

Examining the Relationship Between Marital (and Parental) Status and Moral Foundations

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Drawing from Moral Foundations Theory, in this article I hypothesize that higher scores on binding moral foundations are related to having children or being in a committed relationship. I support this assumption by presenting empirical evidence gathered from one meta-analytical analysis involving of nineteen studies about moral foundations and marital status ($k = 27$; $N = 38,044$), one meta-analytical analysis involving ten studies about moral foundations and parental status ($k = 12$; $N = 24,521$), and four independent samples t test, involving a subsample of eight studies ($k = 8$; $N = 6,982$). The results support my hypothesis for parental status, and partially support my hypothesis for marital status. Limitations regarding the scarcity of available data and others, are discussed.

Keywords: moral foundations, marital status, family, intimate relationships, birthrate, metanalysis

Estudio de la relación entre el estado civil (y parental) y los fundamentos morales

A partir de la teoría de los fundamentos morales, en este artículo planteo la hipótesis de que las puntuaciones más altas en fundamentos morales vinculantes están relacionadas con tener hijos o tener una relación comprometida. Apoyo esta suposición presentando evidencia empírica recopilada de un análisis metanalítico que involucra diecinueve estudios sobre fundamentos morales y estado civil ($k = 27$; $N = 38,044$), un análisis metanalítico que involucra diez estudios sobre fundamentos morales y estado civil ($k = 12$; $N = 24,521$), y prueba t de cuatro muestras independientes, que involucran una submuestra de ocho estudios ($k = 8$; $N = 6.982$). Los resultados apoyan mi hipótesis sobre el estado parental y apoyan parcialmente mi hipótesis sobre el estado civil. Se discuten limitaciones en cuanto a la escasez de datos disponibles y otras.

Palabras clave: fundamentos morales, estado civil, familia, relaciones íntimas, tasa de natalidad, metaanálisis

Estudo da relação entre estado civil (e parental) e fundamentos morais

Com base na Teoria dos Fundamentos Morais, neste artigo levanto a hipótese de que pontuações mais altas nos fundamentos morais vinculativos estão relacionadas a ter filhos ou a estar em um relacionamento sério. Apoió esta suposição apresentando evidências empíricas

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reunidas a partir de uma análise meta-analítica envolvendo dezenove estudos sobre fundamentos morais e estado civil ($k = 27$; $N = 38.044$), uma análise meta-analítica envolvendo dez estudos sobre fundamentos morais e estado parental ($k = 12$; $N = 24.521$), e teste t de quatro amostras independentes, envolvendo uma subamostra de oito estudos ($k = 8$; $N = 6.982$). Os resultados apoiam a minha hipótese sobre o estatuto parental e apoiam parcialmente a minha hipótese sobre o estado civil. São discutidas limitações relativas à escassez de dados disponíveis e outras.

Palavras-chave: fundamentos morais, estado civil, família, relacionamentos íntimos, natalidade, meta-análise

Étude de la relation entre la situation maritale (et parentale) et les fondements moraux

En m'appuyant sur la théorie des fondements moraux, dans cet article, j'émet l'hypothèse que des scores plus élevés sur les fondements moraux contraignants sont liés au fait d'avoir des enfants ou d'être dans une relation engagée. Je soutiens cette hypothèse en présentant des preuves empiriques recueillies à partir d'une analyse méta-analytique impliquant dix-neuf études sur les fondements moraux la situation maritale ($k = 27$; $N = 38\ 044$), d'une analyse méta-analytique impliquant dix études sur les fondements moraux et le statut parental ($k = 12$; $N = 24,521$), et quatre échantillons indépendants de test t, impliquant un sous-échantillon de huit études ($k = 8$; $N = 6\ 982$). Les résultats soutiennent mon hypothèse sur le statut parental et soutiennent partiellement mon hypothèse sur la situation maritale. Les limites concernant la rareté des données disponibles et autres sont discutées.

Mots-clés: fondements moraux, état civil, famille, relations intimes, natalité, méta-analyse

The increase in the number of single people and the decline in fertility across the world is a recent phenomenon, occurring in the past few decades, and both these processes have become causes for growing concern and interest (Bongaarts, 2002; Budgeon, 2008; Petrowski et al., 2015; Stein, 1975).

At the individual level, some authors emphasize the greater current capacity of people to decide to remain single and/or not have children, and highlight the opportunities and positive aspects associated with both being single (Depaulo, 2015; Gray, 2018; Kislev, 2018; Ochnik & Slonim, 2020) as with choosing not to have children (Hansen, 2012; Harrison & Tanner, 2011; Kanazawa, 2014; Stanca, 2012). However, other works show that a better psychological condition, health and well-being is associated with marriage (or cohabitation) (Ifcher & Zarghamee, 2014; Soons & Liefbroer, 2008; Soulsby & Bennett, 2015) and also with having children (Becker et al., 2019; Nelson et al., 2013; Nelson-Coffey et al., 2019; Taylor et al., 2011).

On a social scale, some authors link the existence of strong family nuclei with a stronger economy and less economic inequality (Alesina & Giuliano, 2010; Mathur, 2015, October 30). Therefore, the weakening and disappearance of the family nucleus, reflected in a decrease in the number of marriages in recent decades (Our World in Data, 2018), and accompanied by a sharp decrease in the number of children per woman (The World Bank, 2021), can entail risks for the national economies. A clear example of this risk is the increasing need for pension budgets and a horizon of economic stagnation caused by the aging of the country's population (Arai et al., 2015; Bloom et al., 2011; Er, 2010; Díaz & Berrocal, 2011; Kulik et al., 2014).

Numerous publications have investigated the causes of the increase in the number of single people and the decline in fertility around the world, from sociological, as well as from psychological theoretical approaches. Economic factors such as the decrease of employment stability, the per capita income, rising inequality and also the incorporation of women into labor force (e.g. Contreras & Plaza, 2010; Eckhard, 2014; Livingston, 2011; Mishra & Smyth, 2010), and also cultural-specific factors (Engelhardt & Prskawetz, 2004; Situmorang, 2007), have been pointed out as predictors of the marriage and fertility rates of the countries. Moreover, some psychological variables, such as attachment style (Petrowski et al., 2015) and personality factors, i.e., extroversion, sociability, openness or neuroticism (Avison & Furnham, 2015; Jokela et al., 2011; van Scheppingen et al., 2016), can predict at some level an individual's marital or parental status.

These explanations, however, although they may have a certain marginal predictive power under certain circumstances, do not explain the generalized and consistent decline in fertility throughout the world in recent decades. First, variables like the incorporation of women into labor force cannot explain this trend by themselves, as there are countries with high rates of female labor force participation (like Kenya) and also high rates of fertility rate (The World Bank, 2021; 2022). Second, it is not clear when and how these sociological variables interact with each other, therefore it is very difficult to create a valid and parsimonious explanatory model with include them (an example of a quite complex model can be found in Greenwood et al., 2016). Third, psychological variables cannot explain the increase in the number of single people and the decline in fertility across the world in the last decades, since there is no evidence that this trend has also manifested itself at the population level in those psychological variables.

In this article I am offering a psychomoral approach to predict willingness to commit to one long-term relationship or/ and to have children, which can also explain the increase in the number of single people and decline in fertility across the world in the last decades.

This approach is not new. Morality has been seen to play an important role in predicting the longevity of marriages (Adams & Jones, 1997; Lydon et al., 1997; Stanley et al., 2010), understanding the relationship between parents and children (Hohl, 2018; Walker & Hennig, 1999), and even explaining a person's sexual preferences (Miller, 2007). Evidence suggests that morality is also related to the marital or parental status: preference for singleness and childlessness are linked to the desire of independence (Avison & Furnham, 2015), and the rejection of dependence on others (Petrowski et al., 2015), freedom restrictions and higher levels of responsibility (Štambuk et al., 2019). Koleva (2011) found that morals are more important than non-moral characteristics, such as beauty or intelligence, when choosing a partner, and Miles (2014) found that being married was related directly to Conformity and Tradition values, and inversely to Hedonism and Stimulation.

But more importantly, at the social and societal level, along with the increase in the number of single people and decline in fertility, a global shift in morality, towards self-expressive values (De Castro et al., 2020; Inglehart, R., & Oyserman, 2004; World Values Survey, 2023), autonomy and individualism (Greenfield, 2016; Herriot & Scott-Jackson, 2002; Ogihara, 2017; Telhaug et al., 2004), have been occurring in the last decades, although cultural differences remain sizable (Santos et al., 2017). This cultural and political shift has increased the value of individual freedom (Inglehart & Oyserman, 2004; Minkov et al., 2020), and have brought about more permissive laws regarding abortion and divorce (Glendon, 1987; Levels et al., 2014), and less support for cultural and religious traditions and values (Clements & Clements, 2015; Murray, 2012), which could have facilitated globally the decline of marriage rate, the fertility rate and the decline of the traditional family in general (Greenfield, 2016; Murray, 2012).

As it can be seen, evidence suggests that morality is related in some way to the marital or parental status of the individual. Specifically, the having children and engaging in a long-term relationship seem to be significantly related to having a communitarian or binding-based

morality, whereas the desire not to commit and not to have children is significantly related to a more individualist and autonomy-based morality. However, no quantitative study has as yet encompassed in detail this relationship. Therefore, relying on Moral Foundations Theory (MFT) framework, which has gained prominence in the last decade (Graham et al., 2013; Haidt, 2012), this study presents, for the first time, empirical evidence of the relationship between morality and marital and parental status.

Moral Foundations Theory, Singleness and Parenthood

The MFT has become a recent and prominent alternative to the moral reasoning models that led the field of moral psychology in the recent decades (Fiske, 1991; Gilligan, 1977; Kohlberg, 1958; Turiel, 1983). One of the strengths of this model is that it is not solely based on individual-based elements of morality (like Gilligan, 1977; Kohlberg, 1958; Turiel, 1983), neither it is based solely on communitarian-based elements of morality (like Fiske, 1991), but offers a more comprehensive view of human morality than other models by including both individual-based elements of morality and communitarian-based elements of morality (Graham et al., 2013; Haidt, 2012).

Specifically, the MFT proposes a pluralistic human moral structure, composed of five factors or moral foundations (Haidt & Graham, 2007): Harm/care, Fairness/cheating, Loyalty/betrayal, Authority/subversion and Purity/degradation. Each of these foundations have evolved to face individual and group evolutive challenges and, as a result, each of them triggers a specific emotion (Haidt, 2012). The five foundations can be grouped into two distinct categories: individualizing foundations (comprised by Harm/care and Fairness/cheating) and binding foundations (comprised by Loyalty/betrayal, Authority/subversion and Purity/degradation). Whereas individualizing foundations conform an adaptation for the individual regarding inter-personal relationships, binding foundations are about group adaptation. All of these moral foundations are present in all human beings, but each

of their individual weights can vary greatly from one individual to another, depending on their ancestry evolutionary history. For example, Graham et al. (2009) provided evidence that conservatives and liberals have developed different moral matrixes. The liberal matrix would be composed primarily by the individualizing foundations; whereas the conservative matrix would present the same weight for both individualizing foundations and binding foundations (Haidt, 2012). As a result, people are classified into two groups according to the moral matrix they own and which would also correspond to their political ideology. However, moral matrix differences are not only expected between people regarding political ideology, as the relationship between moral foundations and ideology is not perfect, ranging between -0.2 to 0.49 (Graham et al, 2011). Therefore, it would be possible to find these differences between groups which have been evolved more focused on the group values and more individualistic groups, independently of their ideology.

If the tendency to have children or a stable partner is related to the moral foundations of a person, different moral matrixes between people with and without children, and different moral matrixes between single people and people with a stable romantic partner, should be observed then. Therefore, information from MFT-based articles that include marital and parental status as a variable was gathered in order to carry out a series of meta-analysis and a series of independent samples t tests, in order to test following hypothesis: significative differences between parents and childlessness people, and also between people in a more committed relationship (married, committed, living together...) and people in a less (or no) committed relationship (single, unmarried, etc...), had to be found in the three binding moral foundations, whereas no significative differences had to be found in the two individualizing foundations.

Method

A search of studies up to 2020 was first done in Google Scholar and Psych Info using the terms “moral foundations” and “Haidt”, which resulted in 6,081 entries. After discarding duplicated entries, and entries not linked with articles, a selection of studies was made. The criteria were simple: selected articles had to include both measures of participants’ moral foundations, and a measure of marital and/or parental status. Moreover, moral measures had to be taken under normal, non-manipulated circumstances or non-experimental treatments; and samples had to be comprised by non-psychopathically diagnosed individuals.

Once the selection of articles was complete, data was gathered from the articles, or it was requested from the authors via email. Also, additional data from two articles and from the Morality Project webpage (Measuring Morality, 2012) were compiled from other research projects by the author. As a result, two databases were built, comprised by nineteen studies for marital status ($k = 27$; $N = 38,044$) and ten studies for parental status ($k = 12$; $N = 24,521$). Descriptive information for these samples can be found in the following link: <https://osf.io/48rbv>

Parental Status was coded dichotomously: “0” for *without children* and “1” for *with children*. Marital Status was coded dichotomously: “0” for *less committed relationship* (for single, divorced, separated, widowed, unmarried categories), and “1” for *more committed relationship* (for married, committed, living together categories). This labeling for Marital Status was chosen in order to include as much data as possible in the meta-analysis, given the scarcity of available data, and given that Marital Status was operationalized in a variety of different ways for different samples, in either a scalar (i.e. *married, in a relationship, divorced, single*, etc.) or a dichotomous way (i.e. *unmarried, married*).

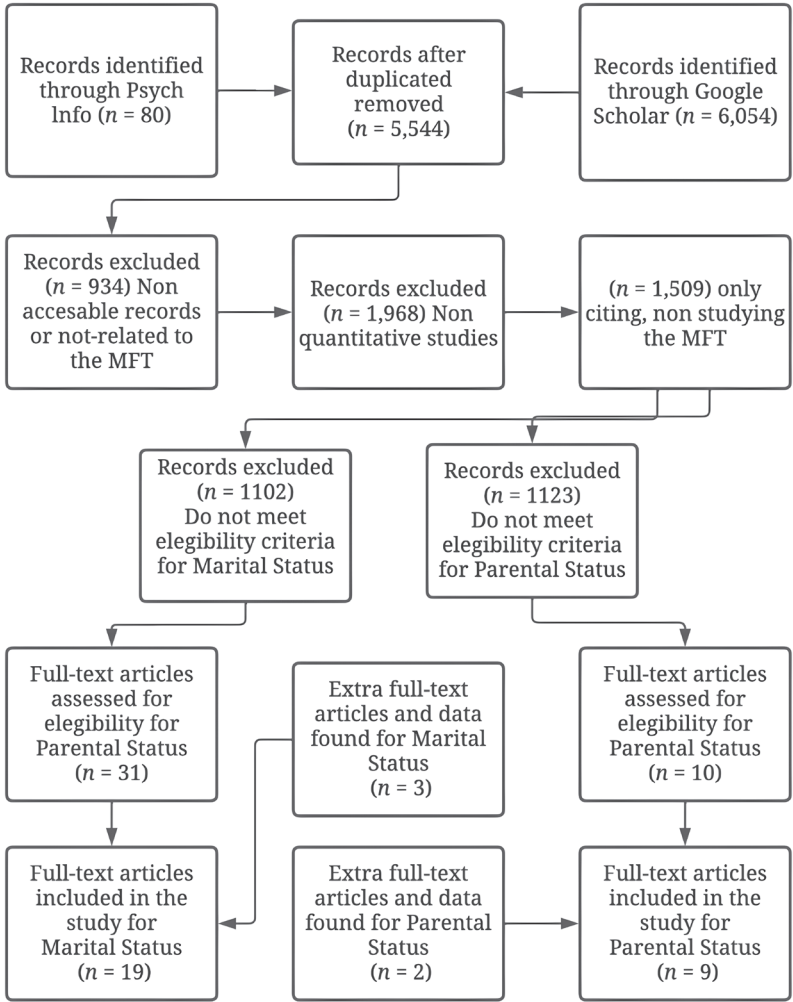


Figure 1. Flowchart of the studies' search

Statistical Analyses for the Meta-analyses

A random effect model for the mean effect size (ES) of our analysis (Cohen's-d differences) was chosen, as differences between moral foundations and marital or parental status were supposed to be a continuous and normally distributed variable (Borenstein et al., 2010). Our analysis included the ES estimation and heterogeneity tests through the Q and I^2 statistics (Huedo-Medina et al., 2006). Whereas Q indicates if the amount of heterogeneity is significant, I^2 is the percentage in which the observed variability exceeds that expected by chance. Outliers were searched and controlled by box-plot for univariate data analyses (Mosteller & Hoaglin, 1991). ES were also transformed into Pearson's r correlations using formulae from Botella et al. (2015, p. 55).

The limited number of samples gathered for both Marital Status and Parental Status did not allow to test possible publication bias in our results with parametric tests. Thus, file drawer analyses were conducted through Orwin's fail safe number tests (Orwin, 1983) for all pooled ES. This test indicates the number of hypothetical studies not included in the meta-analysis, with a non-significant result, which would nullify the significance of the obtained ES. For a meta-analysis of k samples, a fail-safe number as high as $N_s > (5 \cdot k + 10)$ means a higher confidence on the results obtained, whereas a lower fail-safe number means that the statistically significant differences obtained could just depend on the sample utilized, and are expected to vary with the introduction of new data.

Due to the low number of samples, moderator analyses were done only for exploratory purposes. Weighted ANOVAs were carried out taking Cohen's-d differences coefficients as the dependent variable, taking the dummy variable USA as a categorical moderator. This variable indicates if the sample comes from the USA or not, and it may explain heterogeneity between samples from different regions, since USA populations have been found to show different psychological characteristics, compared to other parts of the world. This uniqueness of USA population is related to the WEIRD concept (Henrich et al.,

2010). Since meta-analyses cannot explain the sampling error heterogeneity, we calculated R^2 (the percentage of specific or inter-study variance explained by the model) (Borenstein et al., 2009), in order to assess the explanatory power of the USA variable.

Analyses were performed using Excel 2010, Wilson's meta-analysis macros for SPSS (Wilson, 2005) and Metafor package for R (Viechtbauer, 2010).

Further Statistical Analyses for Marital Status

It is possible that moral differences between people in a committed relationships and people in a less committed relationships depend on the degree of commitment. If this is the case, then moral differences would be greater between married and single people than between people who is living with his or her partner and people who don't. Also, it is important to note that widowed and some divorced people that are not *in a committed relationship* has not chosen their current marital state. If this is the case, they should show similar levels of binding moral foundations than people who are currently married, what could lead to lower differences, between people in a more committed relationship and people in a less committed relationship, than expected.

Unfortunately, due to the scarcity of data, moderator tests were not available for the meta-analyses. Furthermore, results for Marital Status could not describe differences in moral foundations for specific marital status' categories.

Therefore, several complementary Cohen's-d differences were calculated, and four independent samples t tests regarding different marital statuses comparisons (married-unmarried, married-never committed, committed or not, ever committed or not), were carried out afterwards. The term *committed* in these analyses involves both people who are married and people living with a partner. Data for this t tests were compiled from a convenience subsample of eight samples with datafiles available (Ashdown et al., 2019; Clifford, 2017; Dickinson et al., 2016; Forscher & Kteily, 2020; Gay et al., 2018; Measuring Morality, 2012;

Quintelier et al., 2013; Smith et al., 2017), included in nine of the articles utilized in the meta-analysis. These samples also presented compatible marital categories for the marital status variable, so that all four analyses involve all participants of the compiled sample. Overall, the compiled sample comprises 6,982 participants, 89.6% coming from USA, with a mean age of 44.61 and 53.6% females. Approximately a third of the sample (35.5%) report being currently single (without a committed relationship), 43.0% are currently married, 4.2% are living with a partner, 12.6% are separated or divorced and 3.0% are widows.

Results

Meta-Analysis

Ten different analyses were conducted for computing Cohen's differences or effect sizes (ES). Five of those computed differences between people in a *less committed relationship* and people in a *more committed relationship* in each of the moral foundations, and the other five computed differences between *parents* and *no parents*. Pooled ES, τ^2 estimates, Q -test and I^2 statistics, along with the sample size and the number of estimates, are shown on Table 1, Table 2 shows pooled ES results transformed into Pearson's r correlations. Results for the file drawer analyses are shown on Table 3, and forest plots regarding all these analyses can be found in the following link: <https://osf.io/48rbv>

As Table 1 and Table 2 show, for marital status, only Fairness/cheating and Purity/degradation show a significant but small ES, according to Lovakov and Agadullina (2021) interpretations. For parental status, Harm/care difference is significant and also small, whereas binding foundations' differences have a medium size.

Table 1*General results for the meta-analyses*

MF	k	N	d_+	95%CI	τ^2	Q	I^2
Marital							
HC	26	36,696	-.0176	[-.0839, -.0360]	.017873	108.9159***	77.0
FC	26	36,696	-.0995**	[-.1643, -.0347]	.014149	91.3951***	72.6
LB	26	36,696	.1217*	[.0101, .2332]	.065374	330.2783***	92.4
AS	26	36,696	.1091	[-.0154, .2337]	.085461	422.7300***	94.1
PD	27	38,044	.1452*	[.0235, .2669]	.085303	455.3466***	94.3
Parental							
HC	12	24,521	.0876**	[.0301, .1452]	.003702	22.1288*	50.3
FC	12	24,521	.0530	[-.0122, .1181]	.005746	28.2710**	61.9
LB	12	24,521	.3148***	[.2500, .3795]	.005583	27.5642**	60.1
AS	12	24,521	.3552***	[.2759, .4344]	.010753	42.6788***	74.2
PD	12	24,521	.3620***	[.2819, .4420]	.011152	43.9001***	74.9

Note. MF = Moral Foundation; HC = Harm/care; FC = Fairness/cheating; LB = Loyalty/betrayal; AS = Authority/subversion; PD = Purity/degradation; k = number of independent samples; N = total sample size; d_+ = pooled gender difference estimate; 95%CI = 95 %confidence interval; τ^2 = random effects variance component; Q = Cochran's heterogeneity Q statistic with k-1 degrees of freedom; I^2 = heterogeneity percentage index. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2*Pooled Pearson's r correlations*

	Moral Foundation	r_+	95%CI
Marital	Harm/care	-.009	[-.042, -.018]
	Fairness/cheating	-.050***	[-.082, -.017]
	Loyalty/betrayal	.061*	[.005, .115]
	Authority/subversion	.054	[-.008, .116]
	Purity/degradation	.072*	[.012, .132]

	Moral Foundation	r_+	95%CI
Parental	Harm/care	.043**	[.146, .071]
	Fairness/cheating	.026	[-.006, .058]
	Loyalty/betrayal	.153***	[.122, .183]
	Authority/subversion	.172***	[.134, .209]
	Purity/degradation	.175***	[.137, .212]

* $p < .05$, ** $p < .01$, *** $p < .001$

In accordance with the hypothesis proposed in the introduction, results show that people with children show similar levels of individual foundations than people without children. The pooled ES for Fairness/cheating is not significant, while pooled ES for Harm/care is very small (.0876) and has a low associated fail-safe number (Table 3).

Table 3

Fail-safe numbers (Orwin Approach)

	Marital Status	Parental Status
N_0	145	70
Moral Foundation		
Harm/care	0	21
Fairness/cheating	29	0
Loyalty/betrayal	37	76
Authority/subversion	26	84
Purity/degradation	50	80

Note. No= reference fail safe number (5-k+10)

Differences in binding foundations also support the hypothesis: people with children show higher levels of the three binding moral foundations (Loyalty/betrayal; Authority/subversion and Purity/degradation) than people without children, and the ES is larger, reaching a medium size. The hypothesis is also supported by Loyalty/betrayal, Authority/subversion and Purity/degradation's associated fail-safe

numbers. As shown in Table 3, fail-safe numbers for Loyalty/betrayal, Authority/subversion and Purity/degradation are higher than the reference number N_0 . Heterogeneity shown by Q and I^2 is significant and moderately high. This means that differences in the three binding foundations (Loyalty/betrayal, Authority/subversion and Purity/degradation) between people with children and people without children may be greater or lesser depending on the characteristics of the sample. Given that a sufficiently high number of samples is not available, it is not possible to make any further hypotheses about the possible moderating variables that could explain this heterogeneity.

With respect to marital status, the results do not support the hypothesis proposed in the introduction. People in a more committed relationship show statistically higher levels of Loyalty/betrayal and Purity/degradation than people in a less committed relationship, while people in a less committed relationship show statistically higher levels of Fairness/cheating than people in a more committed relationship. However, these differences are associated with very low safety numbers, and heterogeneity is greater than 90%. Thus, moral foundations differences found for Marital Status in the meta-analysis must be assumed with caution, as they depend largely on the sample available for this study.

Exploratory analysis for USA as a moderator

Results on Table 4 show that all Q -test results for marital status are non-significant. This means that there are no ES significant differences for marital status between samples from the USA and samples from outside the USA. For parental status, Q -test is significant for Harm/care, and non-significant for the other foundations. USA as a moderator appears to explain 95.4% of inter-study variance, and leaves the residual heterogeneity of the Harm/care-based ES below the significance threshold. ES's and heterogeneity information for USA and non-USA samples separately is shown in Table 5.

Table 4

Exploratory analysis for USA as a moderator

MF	k _{nousa}	k _{usa}	Q _{model}	Q _{residual}	I ²	τ_1^2	R ²
<i>Marital</i>							
HC	12	14	.0002	108.9154***	78.0	.02217	.0
FC	12	14	.8496	83.4411***	71.2	.01553	.0
LB	12	14	.0022	321.4860***	92.5	.07813	.0
AS	12	14	.1634	402.6369***	94.0	.09955	.0
PD	12	15	.4502	369.5938***	93.0	.08176	4.1
<i>Parental</i>							
HC	2	10	11.1912***	10.3365	3.3	.00017	95.4
FC	2	10	.1197	28.1593**	64.5	.00923	0
LB	2	10	.4458	23.2238**	56.9	.00678	0
AS	2	10	1.6620	30.6277***	67.3	.01060	1.4
PD	2	10	3.0842	26.5914**	62.4	.00846	2.4

Note. MF = Moral Foundation; HC = Harm/care; FC = Fairness/cheating; LB = Loyalty/betrayal; AS = Authority/subversion; PD = Purity/degradation, Q = Cochran's heterogeneity Q statistic with total k-1 degrees of freedom; I² = heterogeneity percentage index; τ_1^2 is the inter-study variance value including the moderator; R² = inter-study variance percentage explained by the model * p < .05, ** p < .01, *** p < .001

Table 5

Explanatory model for Harm/care with USA as a moderator

	d ₊	95%CI	r ₊	95%CI	Q _{wg}	I ²
No USA	-.0591	[-.1338, .0155]	-.029	[-.066, .008]	1.7737	43.6
USA	.0810	[.0468, .1151]	.040	[.023, .056]	8.5628	0.0

Note. d₊ = pooled ES; Q_{wg} = within-group heterogeneity Q statistic with k-1 degrees of freedom; I² = heterogeneity percentage index; * p < .05, ** p < .01, *** p < .001

Table 5 indicates that, in samples located in USA, parents show significantly higher scores of Harm/care, than non-parents. Samples located outside the US, however, do not show significant ES between

parents and non-parents. Results must be taken with caution, and only for exploratory purposes, as the number of samples available is very small.

Further Statistical Analyses for Marital Status

Cohen’s-d differences and four independent samples t tests regarding different marital statuses comparisons (married-unmarried, committed or not, married-never committed, ever committed or not) were carried out on a compiled sample of 6,982 participants. All t tests were significant. Results are shown in Table 6.

All the tests resulted in significant differences in the five moral foundations. As expected, moral differences in the binding foundations (Loyalty/betrayal, Authority/subversion and Purity/degradation) are positive in all cases. These differences also show higher ranges than the pooled ES’ found in the meta-analysis. Indeed, all ES computed are large, according to Lovakov & Agadullina (2021), whereas only Authority/subversion’s ES in the Committed/Not Committed category is in the medium.

Table 6
Independent samples t tests: Cohen’s-d differences and Pearson’s-r correlations

	Married/ Unmarried		Committed/ Not Committed		Married/ Never Committed		Ever Committed/ Never Committed	
MF	d	r	d	r	d	r	d	r
HC	.528	.250	.571	.270	.722	.340	.650	.304
FC	.460	.220	.476	.230	.643	.306	.588	.277
LB	.563	.270	.572	.270	.768	.358	.679	.316
AS	.408	.200	.382	.190	.587	.282	.561	.265
PD	.546	.260	.532	.260	.751	.350	.662	.303

Note. MF = Moral Foundation; HC = Harm/care; FC = Fairness/cheating; LB = Loyalty/betrayal; AS = Authority/subversion; PD = Purity/degradation; d = Cohen’s-d difference; r = Pearson’s-r correlation; All Independent samples t tests results are significant *** p < .001

However, contrary to what was expected, people with a higher level of commitment *also* show higher moral levels in the two individual foundations (Harm/care and Fairness/cheating). These differences are of the same range as the differences found for the three binding foundations.

Finally, as expected, moral foundations differences between married people and unmarried people are smaller than between married people and people who have never committed, and they are also smaller than between people who once had a committed relationship and those who never had one. People who are currently married show greater moral differences than people who have never been in a committed relationship than those who have ever been in a committed relationship.

Discussion

The present study aimed to test the following hypothesis: the global shift in morality that have been occurring in the last decades, towards self-expressive values, may have had a significant impact on the global decrease in birth and marriage rates.

According to this hypothesis, one should see, for example, different moral configurations for people with children and for people without children in this sense. If the social tendency to prioritize values such as individual freedom has been accompanied by a decline in birth rates, this could be influenced by the fact that having children is not associated with values such as self-expression or autonomy, but by values of a binding nature, such as those reflected in the three binding moral foundations (Loyalty/betrayal, Authority/subversion and Purity/degradation). Therefore, people with children would show higher scores in the three binding moral foundations than people without children.

Similar moral differences were also expected with respect to married people compared to single people, and, in general, from people who establish more commitment-based relationships and people who establish relationships with less or no commitment.

After carrying out two meta-analytic studies and four independent samples *t* tests, results mainly supports the proposed hypotheses regarding parental status. Results also support to a certain extent the hypotheses made regarding marital status, but they suffer from some limitations that must be considered when interpreting them.

Parental Status

People with children show significantly higher levels on the three binding moral foundations (Loyalty/betrayal, Authority/subversion and Purity/degradation) than people without children. These results are also quite stable, since associated fail-safe numbers for Loyalty/betrayal, Authority/subversion and Purity/degradation are greater than the reference fail-safe number. Moreover, results do not show consistent significant differences regarding individual foundations (Harm/care and Fairness/cheating) between people with children and people without children.

These results support the proposed hypotheses. People who establish a life commitment as important as having children, show a moral configuration in which they give greater importance to foundations of a group or binding nature than people who do not have children. These three foundations: Loyalty/betrayal, Authority/subversion and Purity/degradation, refer precisely to the evolutionary need of people to create cohesive groups, with a clear structure and roles within the group, and conservative sexual and eating behavior. The formation of a family requires sacrificing aspects of individual autonomy in the face of successful upbringing, and identifying not only with one's own individual self, but also with the human structure (family) that he or she has formed, ideally voluntarily.

Differences in individualizing moral foundations between people with children and people without children were not expected. Valuing caring for others and not harming others (aspects related to Harm/care), for example, are not limited only to parents, although it would be reasonable to propose that a father has a greater interest in caring than a non-father. The results obtained do not provide conclusive evidence

in this sense: the difference found in Harm/care is very small, and the associated fail-safe number is very low. This means that the difference found in Harm/care should not be taken into consideration in the absence of more empirical evidence.

To sum up, people with children show higher scores in binding moral foundations than people without children, but there is not enough evidence to support a similar situation regarding individualizing moral foundations.

Marital Status

The meta-analysis conducted for marital status does not show conclusive evidence about moral differences between people in a less committed relationship and people in a more committed relationship. People in relationships with more commitment show higher moral scores in Loyalty/betrayal, Authority/subversion and Purity/degradation, but not in AS, than people in relationships with less commitment, which was not expected. Furthermore, these differences must be considered with caution, given the very high heterogeneity found and the low associated fail-safe numbers obtained. The significant difference found in Fairness/cheating also has an associated low value of fail-safe number and high heterogeneity.

These results are not satisfactory, and they are possibly related to the limitation of the sample. Operationalizations of the *marital status* variable, vary themselves from one reference to another, sometimes in a very notable way (see Table 7). As a consequence, people in the same marital status could be part of the *more commitment group* or could be part of the *less commitment group*, depending on the study of origin. For example, whereas an unmarried person, living with a partner, would be counted in the same category as a married person in Messick & Aranda (2020), he or she would be counted in the same category as an unmarried person in Wang et al., (2019). For this reason, the present meta-analysis tried not to assess moral foundations differences between specific marital categories, but assess moral foundations differences between people in a *more committed relationship* and people in a *less*

committed relationship, considering the contributions of all the studies carried out to date. However, no conclusive results have been obtained. Moral differences in marital statuses seem to depend on the marital status that is being compared itself. For example, different results when comparing a married person with a person who has never married, and when comparing a married person with a widow, would be expected.

Table 7

Descriptive statistics for Marital Status' metanalysis

Original Article	Original marital categories
Ashdown et al. (2019)	Single, dating casually, dating exclusively, committed, engaged, married, married with an affair
Atari M et al. (2020)	In marital relationships or not
Cantarero et al. (2021)	Married/single
Clifford (2017)	Never married, marriage, separated, divorced, widowed
Collier-Spruel (2019)	Never married, marriage, separated, divorced, widowed
Dickinson et al. (2016)	Single, first marriage, other marriage, separated, divorced, widowed
Forscher & Kteily (2020)	Never married, married, living as, widowed, separated, divorced
Gay et al. (2018)	Never married, marriage, separated, divorced, widowed
Krijnen et al. (2022)	Unmarried/married
Measuring Morality (2012)	Never married, married, living with, widowed, divorced
Mejova & Kalimeri (2019)	Single, unmarried living together, married, divorced, widow
Messick & Aranda (2020)	Single-never married, married-living as, widowed, separated-divorced
Milojev et al. (2014)	Single, in a romantic relationship
Prince et al. (2020)	Single, married, widowed, other, divorced

Original Article	Original marital categories
Quintelier et al. (2013)	Never married, first marriage, other marriage, separated, divorced, widowed
Sağel (2015)	Relationship (dating; cohabiting; engaged; married) and not in a relationship (single; divorced; widowed)
Santos-Lang (2016)	Been married or not
Sloan et al. (2020)	Unmarried/married
Smith et al. (2017)	Married and Living with Partner; Living with Partner (not married); Separated; Widowed; Never been married; Divorced-Not currently married
Wang et al. (2019)	Married/unmarried

Note. *articles published after 2020 were selected prior publication, as preprints

The four independent samples t tests carried out afterwards have overcome these limitations, by using a single sample with a single operationalization of marital status. The four t tests carried out gave significant results, which means that, when all the people analyzed fall within the same marital operationalization, moral foundations differences always occur and in a significant way: between married and unmarried people, between people in a committed relationship and people not in a committed relationship, married people and people who have never been in a committed relationship, and people who have ever been in a committed relationship and people who have never been in a committed relationship.

Furthermore, t statistics are all negative and Cohen's d are all positive. This means that people who are married, in a committed relationship, or have been in a committed relationship in the past, show higher moral foundations scores than people who are not married, not in a committed relationship, or who have never been in a committed relationship, respectively. This result partially was expected. People who establish a committed relationship with another person show values consistent with the three moral binding foundations (Loyalty/betrayal, Authority/subversion and Purity/degradation): in a marriage

or similar relationship it is necessary to establish cohesion, negotiate specific roles, and maintain sexual fidelity (at least in general), in order for the relationship to prosper. The person must identify not only with himself as an individual, but also with the couple he or she has formed with his or her spouse.

Differences in binding moral foundations are greater between people who have ever had a committed relationship and those who have never had such a relationship than between those who are married and those who are not married. This could mean that moral configuration of the person does not depend on their current marital status, which is itself an indicator of stability for the moral configuration of the person. This assumption about the stability of the moral configuration of the person is supported by a meta-analysis which studied the relationship between age and moral foundations (Castilla-Estévez & Blázquez-Rincón, 2021) and it is also compatible with the intuitionist and nativist assumptions of the MFT itself (Haidt, 2001; Graham et al., 2013).

Finally, moral foundation differences found in the two individual foundations (Harm/care, Fairness/cheating) were not expected. This result could mean that people who want to establish committed relationships may not only see the relationship as a human structure of which they are a part, but also as a simple relationship between two individual people who are at the same level. Given that marital commitments are generally easier to break than parental commitments, people who want to be successful in a marriage could include both group-type values and individual-type values.

Limitations

The present study has found how differences in marital status and parental status are significantly related to significant differences in the moral configuration (or moral matrix) of the person. Results for parental status are clear, especially with respect to binding foundations, and independent samples t-analyses also show notable moral

differences between different categories of marital status. However, the present study suffers from at least three limitations that must be acknowledge here.

First, the number of samples collected, both for marital status' and for parental status' meta-analyses, is small. Thus, it has not been possible, for example, to carry out a proper publication bias analysis. Furthermore, Orwin's numbers found for the different effect sizes are smaller, or at most comparable in size, to the reference safety number (N_0). This means that the results obtained might change in the future, if enough new data is compiled into another meta-analysis. This external validity threat is clearer for the marital status' meta-analysis, since for all moral foundations, the associated Orwin's numbers are much lower than the reference safety number.

Second, as Table A1-1 shows, there is no consensus on how to code a person's marital status should be coded. Since the coding of marital status is not uniform across the studies collected, it is not possible to ensure enough internal validity for the pooled ES found in the meta-analysis. This lack of code consensus for marital status may explain why, pooled ES found through the t-analyses, are much larger than those obtained through the meta-analysis. These t-analyses have been carried out on well-defined marital status categories, so the results obtained would be more reliable in that sense. However, the sample utilized for the t-analyses is less than a quarter of the size of the sample used in the meta-analysis, so the external validity for t-analyses' results would not be higher than those obtained through the meta-analysis.

Third, the vast majority of the sample comes from the USA. Thus, the results obtained in the moderator analysis are only exploratory.

In sum, overall results are promising, but are not conclusive. More research is needed in order to study, for example, to what extent the differences in moral foundations this study has found are stable or, on the contrary, they depend on variable such as the country of origin, people's ideology or religion, among other possibilities.

Conclusion

The fall in birth rates and traditional family structures is among the most relevant change taking place in the society. This paradigm shift cannot be understood without considering the shift in prevailing values – like the value family has – sexual relations, the role of women in the society, and the value of having children in an increasingly populated and technologized world. This value shift reflects also a prevailing moral shift, especially from a more traditional and binding and group-based morality, to a more individualistic-based morality. Consequently, moral differences among people play a key role in these social trends. I hope that this small-scale study contributes to make noticeable this fascinating line of research to more authors.

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