Narratives and the Economics of the Family*

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Abstract

We argue that families adopt stories and that different stories give rise to different patterns of behavior. We build a theoretical model, focusing on two common, competing stories, which we term the "protector narrative" and "fulfillment narrative." Our model makes predictions regarding the bundle of behaviors associated with each of these narratives; it also makes predictions regarding the narratives families will choose to adopt. We show that the protector narrative gives rise to a type of "traditional" family with distinct gender roles: men are breadwinners, are authoritarian towards women and children, and are expected to be "tough"; women avoid work when feasible, and are not expected to be "tough." Because of role differentiation, it is important to be part of a family. The fulfillment narrative gives rise to a type of "modern" family in which gender roles are less distinct, both men and women work, and marriages are based, to a greater extent, on romantic love.

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I. Introduction

An American family of a century ago would be downright puzzled by the choices of many families today. Cohabitation, for instance — once considered highly shameful — is now commonplace (65 percent of women aged 19 to 44 had cohabited as of 2010).[1] While a century ago most women were expected to be housewives, today the majority work outside the home. Rates of single parenthood have also skyrocketed. Even the past few years have seen profound changes, with the legalization of gay marriage in 2015. We also see pronounced cross-sectional differences across families, with some displaying more "traditional" behaviors and others displaying more "modern" ones. This variation in families — over time and in the cross section — may, in part, reflect differences in economic conditions; but it also seems to reflect more fundamental differences in what families value.[2]

In this paper, we augment the standard economic model of Becker (1981) in order to account for these patterns. We take the view that, in addition to caring about standard economic goods, the family wishes to further a subjective story — or narrative — that captures its deeply held values.[3] Formally, we model the family as maximizing the sum of utility from consumption and utility generated from its story. For the most part, we treat the story as exogenously given but we also discuss how stories can be endogenized.

Our focus in the paper will be on two stories that in many ways are polar opposites of each other. The first story, which we call the protector narrative, produces a type of "traditional" family where there are strong gender norms and where members are cast into two distinct roles: "pure individuals" who are, to varying degrees, kept cloistered (so as to protect them from the world's most corrupting aspects); and "protectors," who are the main breadwinners of the family, acquire worldly knowledge, and act tough and authoritarian. This arrangement allows the family to exploit convexities brought about by the narrative. The second story, which we call the fulfillment narrative, produces a type of "modern" family where gender norms are weak and all adult members hold similar roles.

[1] See Manning and Stykes (2015).

[2] For a discussion of the role of changing economic conditions — such as the increase in women's education and the expansion of the service sector — see Goldin (1990).

[3] The stories we consider can be viewed as a source of identity at the family level. In this sense our work connects to the literature on identity (see especially Akerlof and Kranton, 2000).

The main takeaway of our analysis is that each type of story leads to a distinctive bundle of behaviors. Notably, these bundles can include non-economic practices that are inconsistent with the standard model. For instance, a family might assign its members to roles based upon gender rather than talent, underinvest in women's human capital, or forbid children from entering marriages of the same sex.

We open the paper by documenting some stylized facts that serve as motivation for our analysis. Specifically, we show that families tend to come in distinct types in the sense that their behaviors (and beliefs) bundle together into rather specific packages. We then construct our model in steps, by gradually adding complexity to the family's objective and choice set. As we add more complexity, we obtain a richer bundle of behaviors for each family type. Throughout our analysis, we interweave our theoretical results with empirical applications. Our goal is to illustrate the applicability of our framework and to bring each of the model's predictions to life.

Our paper relates to a literature outside of economics on "family models," which argues that families come in well-defined types. For example, Lakoff (1996, 2008) contrasts a "strict father model," which prizes obedience in children, with a "nurturant parent model," which favors independence; and Stiehm (1982) and Young (2003) describe a model where the (male) head of household has the duty to provide for the family and protect them from harm. These treatments view a family's type as reflecting its narrative, as we do. However, these treatments lack a formal model and do not seek to derive the patterns of interest from first principles, like we do. In addition, they do not take a stance on how families with different narratives will respond to changes in their economic conditions.[4]

Our paper also relates to a growing, largely empirical, literature within economics which argues that culture and norms are critical for understanding families (see, for example, Alesina et al., 2013, Fernandez and Fogli, 2009, Bertrand et al., 2015, and Becker, 2018, and Jayachandran, 2015 and Giuliano, 2017 for reviews). These papers show that social norms and a family's cultural inheritance have significant impacts on such outcomes as female labor force participation, divorce rates, and fertility.

Our empirical techniques build upon recent work by Benjamin Enke (2019), who finds that individuals with "universal moral values" behave differently — along a

[4]Lakoff suggests that American conservatives largely adhere to the strict father model while liberals largely adhere to the nurturant parent model. In related work, Cahn and Carbone (2010) contrast "red families" with "blue families."

range of dimensions — from those with "communal moral values."[5]

Finally, we contribute to a nascent literature that explores the impact of narratives on various aspects of the economy (see, for instance, Akerlof and Shiller, 2015; Morson and Schapiro, 2017; Mukand and Rodrik, 2018; Shiller, 2017; Eliaz and Spiegler, 2018; Bénabou et al., 2018; Michalopoulos and Xue, 2019). To our knowledge, our paper is the first to explore how narratives affect the family.

Our goal in the paper is to capture some of the heterogeneity in how people think, and what motivates them, when they make decisions.[6] As a disclaimer: while we believe our model does a better job than a standard Beckerian model of capturing how people think, it is nonetheless quite stylized. In particular, we do not wish to suggest that all families we label "traditional" — or all families we label "modern" — think the same or are well captured by our model.

II. Family Types

In this section, for motivation, we present a stylized fact: family behaviors and beliefs tend to bundle together into rather specific packages. This bundling generates significant similarities across families of a given type and significant differences across families of different types. We show here, in particular, that classifying survey respondents into just two categories already explains a lot.

Table 1 presents the results of a simple exercise. We classify Americans into two types using an unsupervised learning algorithm. Our data comes from years 1977 to 2016 of the General Social Survey (GSS). Our algorithm uses two attitudinal questions to cluster respondents into types. These questions concern views on premarital sex and on whether men should work and women tend home.[7]

We term the first type of individuals "traditional" and the second type "modern."[8] On average, "traditional" types are less accepting than "modern" types of premarital sex (difference of 1.9 standard deviations), and are more likely to believe that men should work and women should tend home (difference of 0.8 standard deviations).

[5]We also build on the empirical techniques of Draca and Schwarz (2018) and Bandiera et al. (2019).

[6]Note that our exercise here is purely positive: the aim is not to pass judgments.

[7]For an extended version of Table 1, see Table A.3 in the Appendix.

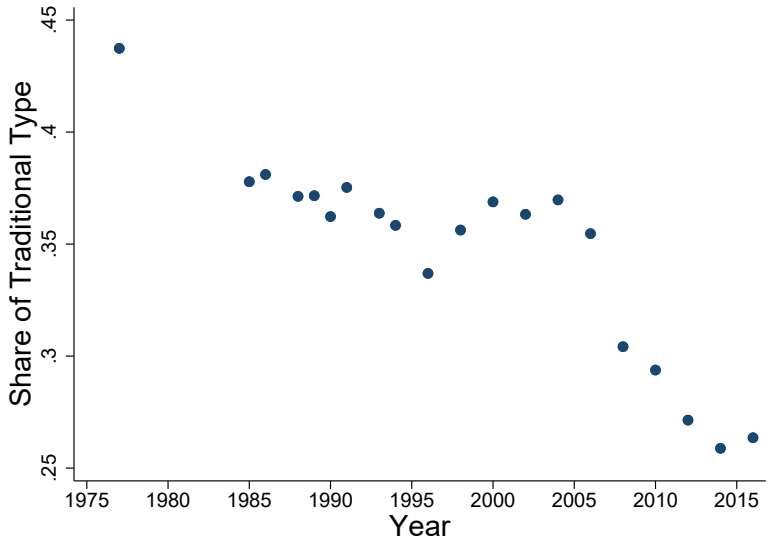
[8]Our classification is inevitably imperfect and cannot possibly account for the full diversity of individual values. We use quotation marks to denote this fact.

Table 1

Variable	(1) Modern Type Average	(2) Difference Traditional Type
Sex before marriage: always wrong	-0.661	1.924***
Better for man to work, woman tend home: strongly agree	-0.274	0.796***
Being housewife as fulfilling as paid work: strongly agree	-0.103	0.315***
Bad marriage better than none at all: strongly agree	-0.083	0.227***
Homosexual sex relations: always wrong	-0.333	0.933***
Can people be trusted: can't be too careful	-0.024	0.071***
Should chldrn be obedient or think for selves: to be obedient	-0.176	0.491***
Favor spanking to discipline child: strongly agree	-0.110	0.328***
Ever married*	0.720	0.136***
R's age when 1st child born*	24.265	-0.795***
Percentage of same gender in occupation*	0.678	0.036***
Have gun in home: no*	0.609	-0.066***

Note: The table presents the differences in averages between two clusters generated using data from GSS through a k-means cluster procedure using the following questions: 1) Sex before marriage, 2) Better for man to work, woman tend home. After the colon (:) in the variable description, the response that corresponds to the largest numeric value of the question is listed. One thousand iterations with different seeds were computed, and the iteration that maximized the distance between cluster centers is presented. Sampling weights are used to take into consideration sub-sampling of non- respondents and the number of adults in the household. All variables without stars (*) have been standardized. The stars in column 2, represent the significance level at which the difference across clusters is statistically significant using heteroskedasticity robust standard errors: *** for 0.01, ** for 0.05, and * for 0.1.

Figure 1: Traditional Family Share by Year



Being a "traditional" type predicts other beliefs: for example, "traditional" types are more likely to believe that a bad marriage is better than none at all, that gay marriage is wrong, that children should be obedient rather than think for themselves, and that people cannot be trusted. There are also differences in behavior. For example, "traditional" types are more likely to be married (85.6% are married versus 72% of "modern" types), to have children at a young age, to be in gendered professions, to favor spanking their kids, and to own guns. Additionally, "traditional" women are more likely to be housewives. Figure 1 shows that "traditional" families are becoming less prevalent. Only 26 percent of families were "traditional" in 2016, compared to 44 percent in 1977.

We shall argue that bundles of this form naturally arise when we bring stories into the family's objective.

III. Model

We begin with a simple model, to which we will progressively add elements.

A family must choose a job for each of its $N \geq 2$ members. A job is described by its wage w. Job $w = 0$ stands for "no work." Family members are equally capable, with each qualified to work jobs in the interval $[0, w_{\max}]$.[9] Let w_i denote the job selected for i; let $\overline{w}$ denote the average family wage; and let w_0 denote per capita unearned income. Income is split equally across family members, so each one receives $\overline{w} + w_0$; and income is devoted entirely to consumption.

The choice of jobs results in an "outcome" V_i for each member i. This outcome has two components:

$$V_i \quad = \quad \underbrace{u(\overline{w} + w_0)}_{\text{consumption utility}} \quad + \quad \underbrace{S(w_i)}_{\text{story utility}},$$

where $u(\cdot)$ is increasing and strictly concave and $S(\cdot)$ comes from the family's story. Thus, we take the view that stories are a source of utility; in particular, they provide meaning to each occupation.[10] For the time being, we assume the family is endowed

[9] We make this assumption in order to emphasize that the differences in individual roles that arise in our model do not stem from differences in capabilities.

[10] Story utility differs from a standard Beckerian commodity because it is a side effect of the family members' occupational decisions, rather than something family members produce directly.

with a story.

We take the view that family members fully internalize each other's outcomes. Thus, the family's objective is to maximize the average outcome:

$$\overline{V} = u(\overline{w} + w_0) + \overline{S},$$

where $\overline{S}$ denotes the average value of $S(w_i)$. Observe that $\overline{V}$ depends upon the family's job selection only through average wage $\overline{w}$ and average story utility $\overline{S}$.[11]

For a given story of interest, we solve the family's problem in two steps:

1. Obtain the family's "production-possibility frontier" (PPF) by finding the maximum achievable value of $\overline{S}$ for every value of $\overline{w}$.

2. Find the point $(\overline{w}, \overline{S})$ on the PPF that maximizes $\overline{V}$.

In Sections IV and V, we solve this baseline model under two alternative stories: the "protector narrative" and the "fulfillment narrative." Each story will be captured by a different function $S(\cdot)$.

In Sections VI, VII, and VIII, we add further elements to the model to derive a rich set of behaviors. In Section VI, we assume each individual's outcome V_i has a third component: the degree to which the individual "fits" their gender. As we shall see, this motive gives rise to endogenous gender norms. In Section VII, we consider various types of human capital investment, such as "veiling" and "toughness." These investments may be enhancing/disenhancing of wages and story utility. In Section VIII, we endogenize the decision to marry and consider the impact of stories on the marriage rate.

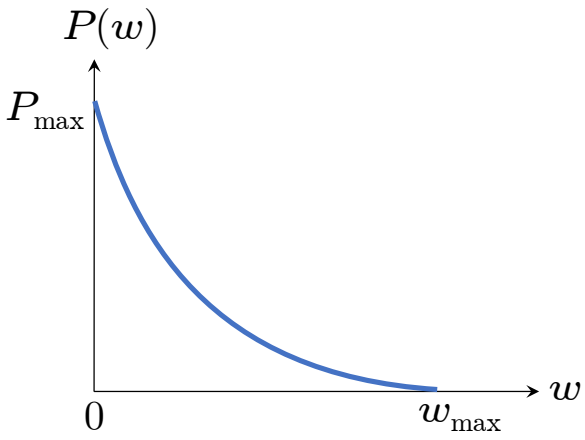
IV. The protector narrative

Here we put forward our first story: the "protector narrative." Informally, it goes as follows:

> *Purity (lack of corruption) is valuable and worthy of protection. The world is a dangerous place, full of corrupting influences.*

[11] If we eliminate story utility from our model, it becomes a Becker-style model in which all forms of production are fully substitutable.

Figure 2: The Purity Function



Ideas of purity and pollution are widespread (see Douglas (1966) and Kristeva (1980) for seminal treatments, and Haidt (2012) for a discussion of the relationship between purity and morality). Virtually every culture has specific ideas of what is "dirty" (some related to health, others quite arbitrary) as well as rituals and prescriptions for avoiding contamination. Sources of pollution may include: menstruation, childbirth, and death; exposure to "untouchable" individuals; sexual contact; and immoral acts (e.g., treason or murder), which are often seen as "stains."[12] Means of protecting purity may include: veiling, keeping a restricted diet, avoiding members of the opposite sex, or maintaining ignorance of certain aspects of the world. Perhaps the Garden of Eden story captures these ideas best: eating from the Tree of Knowledge is corrupting and therefore forbidden.[13]

Our interest, in particular, is on how the choice of an occupation impacts purity. Formally, we equate story utility to purity: associated with each job w, there is a purity level $P(w)$, and so member i's outcome is $V_i = u(\overline{w} + w_0) + P(w_i)$. We assume that $P(w)$ is decreasing and convex ($P' < 0, P'' > 0$), as illustrated in Figure 2. (We normalize the minimum achievable purity to zero and denote the maximum achievable purity by $P_{\max}$.) $P' < 0$ captures the idea that higher salary jobs involve greater exposure to "corrupting" elements (e.g. members of the opposite sex, knowledge, foreign cultures). $P'' > 0$ captures the idea that purity is (roughly)

[12]For Kristeva (1980), notions of pollution are closely linked to a distinction between "self" and "other." Thus, both bodily secretions and individuals outside one's group can be considered impure.

[13]Many Christians believe that not only Adam and Eve but all of their descendents were corrupted by this original sin. Even newborn babies must be baptized, so the thinking goes, because, young as they are, they are subject to this taint.

all-or-nothing in the sense that even small degrees of exposure are highly damaging. In the Garden of Eden story, innocence is lost after just a single bite of the forbidden fruit.

A. Occupational Choice under the Protector Narrative

Under the protector narrative, the family's problem is to maximize:

$$\overline{V} = u(\overline{w} + w_0) + \overline{P},$$

where $\overline{P}$ is the average value of $P(w_i)$. We now solve the family's problem.

Step 1: Obtaining the family's PPF.

The first step is to derive the family's PPF (the maximum achievable value of $\overline{P}$ for every value of $\overline{w}$).

We start with the most extreme case where $N = \infty$ (that is, the family is large). This case is the most straightforward from a technical standpoint and will play a prominent role in our analysis. Here, the PPF is simply the line segment connecting the two extreme points of the purity function (see Figure 3(a)).[14]

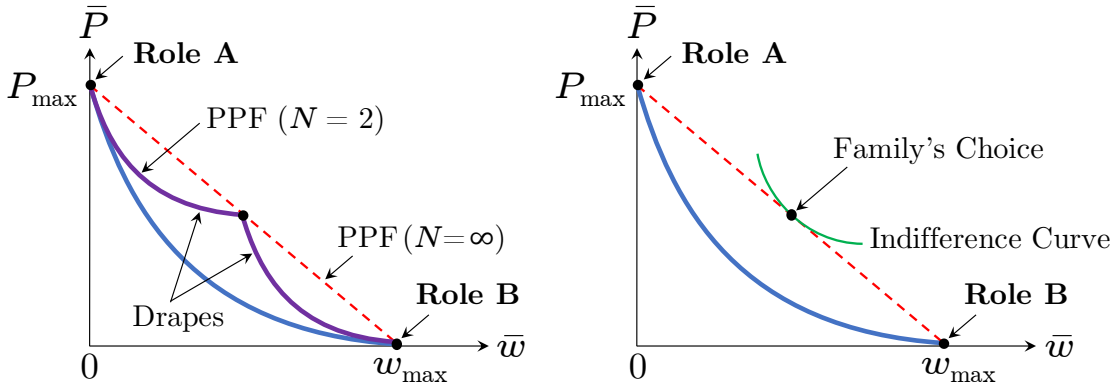
The family reaches this frontier by splitting its members between two extreme roles: a high-purity/low-wage role (A) and a low-purity/high-wage role (B). Intuitively, given that purity is (roughly) all-or-nothing, exposure has diminishing costs. Consequently, it is best to concentrate all exposure on a subset of family members and keep the remainder maximally pure.[15]

Now consider the case where N is finite. The key thing to note is that it is efficient to assign at least $N-1$ family members to the extreme roles (A and B). To see why, suppose two family members are in non-extreme roles. Because of the convexity of $P(\cdot)$, the family benefits from moving them farther apart (e.g., the family can increase $\overline{P}$ while keeping $\overline{w}$ constant). This shows that the original allocation is not optimal.

[14]For any arbitrary purity function, when the family is composed of a continuum of members, the PPF is the convex hull of this function (see Aumann and Perles, 1965). It is then easy to see that, for the finite case, the PPF converges uniformly to this convex hull as $N \to \infty$.

[15]Notice that, by randomizing between roles A and B, a single individual can achieve the same expected values of $\overline{w}$ and $\overline{P}$ as the family; however, the individual cannot achieve the same utility as the family because these values are only achieved in expectation (not with probability 1).

Figure 3



(a) PPF ($N = 2$ and $N = \infty$). **(b)** Solution ($N = \infty$).

With this observation in place, it is easy to plot the PPF. Take the case of $N = 2$, illustrated in Figure 3(a). Begin by assigning both family members to Role A. Next, leave family member 1 in Role A and gradually raise the wage of family member 2 until 2 reaches Role B. This traces the first "drape" of the frontier. Note that, when 1 is in Role A and 2 is in Role B, the PPF coincides with the PPF in the $N = \infty$ case. Finally, leave member 2 in Role B and gradually raise the wage of family member 1. This traces the second "drape."

More generally, for any finite N, the PPF is built by moving members, one at a time, from Role A to B. This results in a PPF that is composed of N drapes.[16] As N grows, the PPF more-and-more closely resembles the $N = \infty$ case.

Going forward, to simplify the exposition, we will focus on the case of large families ($N = \infty$). This case merely approximates the (more realistic) finite case. Fortunately, none of our predictions depend upon this approximation.

Step 2: Finding the optimal point on the PPF.

Because the family is large ($N = \infty$), the family's problem is simply to choose the split of its members between Roles A and B. Let μ denote the optimal fraction of family members in Role B. Provided the optimal split is interior ($0 < \mu < 1$), it equates the slope of the PPF with the marginal rate of substitution between the two goods, as illustrated in Figure 3(b). In this case:[17]

[16] The PPF shares $N + 1$ points with the PPF in the $N = \infty$ case. Each drape is a scaled-down $P(\cdot)$ curve (scaled at $\frac{1}{N}$).

[17] To see why, notice that the slope of the PPF is $-\frac{P_{\max}}{w_{\max}}$ and the marginal rate of substitution is

$$\mu = \frac{1}{w_{\max}}\left[(u')^{-1}\left(\frac{P_{\max}}{w_{\max}}\right) - w_0\right]. \tag{1}$$

Note for future reference that families with higher endowments focus more on purity and less on breadwinning (μ is decreasing in w_0).

B. "Separate Spheres"

Although gender is currently absent from the model, for reasons that will become clear in Section VI, there is a strong tendency for roles to become gendered. The model thus helps us understand a view that has held sway in many societies, over many time periods: that women and men should occupy separate spheres. A woman's "proper place," according to this view, is the domestic sphere while a man's is the public sphere. Historian Barbara Welter (1966) argues that this ideology gained prominence in the United States in the nineteenth century, in the wake of the Industrial Revolution, as men increasingly went to work outside the home.

A critical component of the ideology — termed the "cult of domesticity" by historians — is that women should be embodiments of virtue: pious, chaste, and innocent even to the point of being childlike. Women, in other words, are supposed to occupy Role A. According to Welter, "the nineteenth-century American man was a busy builder of bridges and railroads, at work long hours in a materialistic society...he occasionally felt some guilt that he had turned this new land...into one vast counting-house. But he could salve his conscience by reflecting that he had left behind a hostage not only to fortune, but to all the values which he held so dear and treated so lightly. Woman...was the hostage in the home."[18]

The idea of separate spheres arguably reached its apotheosis in America in the 1950s. The post-war boom, according to Cherlin (2014), meant that "for the first time large numbers of working-class families [were able to] attain the middle-class ideal of the male-breadwinner family: husbands doing most of the earning, and

$-\frac{\partial \overline{V}/\partial \overline{w}}{\partial \overline{V}/\partial \overline{P}} = -u'(\overline{w} + w_0)$. Therefore, the optimum is interior whenever $u'(w_0) > \frac{P_{\max}}{w_{\max}} > u'(w_{\max} + w_0)$. Moreover, in any interior solution, $\overline{w} = (u')^{-1}\left(\frac{P_{\max}}{w_{\max}}\right) - w_0$. Expression (1) then follows from the observation that $\mu = \frac{\overline{w}}{w_{\max}}$.

[18] Welter (1966), p. 151.

Figure 4: 1959 Bell Telephone Advertisement



wives focusing on homemaking, child-rearing, and emotional support."[19] This ideal was widely depicted in television shows, such as "Leave it to Beaver" and "Ozzie and Harriet," and magazine advertisements (see Figure 4). In terms of our model, greater family wealth (w_0) made it optimal for women to withdraw from the labor market and adopt Role A.

C. Comparison with a Labor-Leisure Model

Note that, mathematically, the model we have presented thus far is equivalent to a Beckerian model where family members specialize into "market production" and "leisure production." Two points are worth making. First, protector-narrative families divide into distinct roles — breadwinner and homemaker — because they hold a particular, subjective story. By varying the story, we will be able to account for heterogeneity across families in the extent of role division.

Second, in our telling, Role A's produce "purity" — *not* "leisure." That is, Role A's do not enjoy having idle time; in fact, absent purity motives, they would choose to work *more*. This difference in interpretation will become more and more consequential as we add greater richness to the family's choice problem, as the family's desire for purity will imply a number of additional behaviors.

Our interpretation fits with the picture Betty Friedan gives of the 1950s housewife in her seminal book, *The Feminine Mystique*. Friedan describes a widespread affliction ("the problem that has no name"): many American housewives, despite being married with children, living in material comfort, and having plenty of free

[19] Cherlin (2014), p. 1.

time, felt dead inside. Among the upper-middle class women she interviewed, she found that a surprising number had been hospitalized for depression, took tranquilizers, or had attempted suicide. In Friedan's view, these women were suffering from a lack of meaningful work. As one older woman put it to her: "I think it would be the most wonderful thing in the world to work, to be useful. But I don't know how to do anything. My husband doesn't believe in wives working."[20]

D. Protected Occupations

Some occupations in the economy, such as working on a family farm or teaching in an elementary school (see Figure 5) may be attractive, in part, because they involve particularly low levels of exposure. At the same time, these occupations may not pay especially well. To formally capture this possibility, suppose family members have access to two types of occupations, "regular" and "protected" (see Figure 6(a)). We assume that protected occupations are less damaging to purity but also have a lower maximum wage (w_L as opposed to $w_{\max}$).

Figure 5: Examples of Protected Occupations

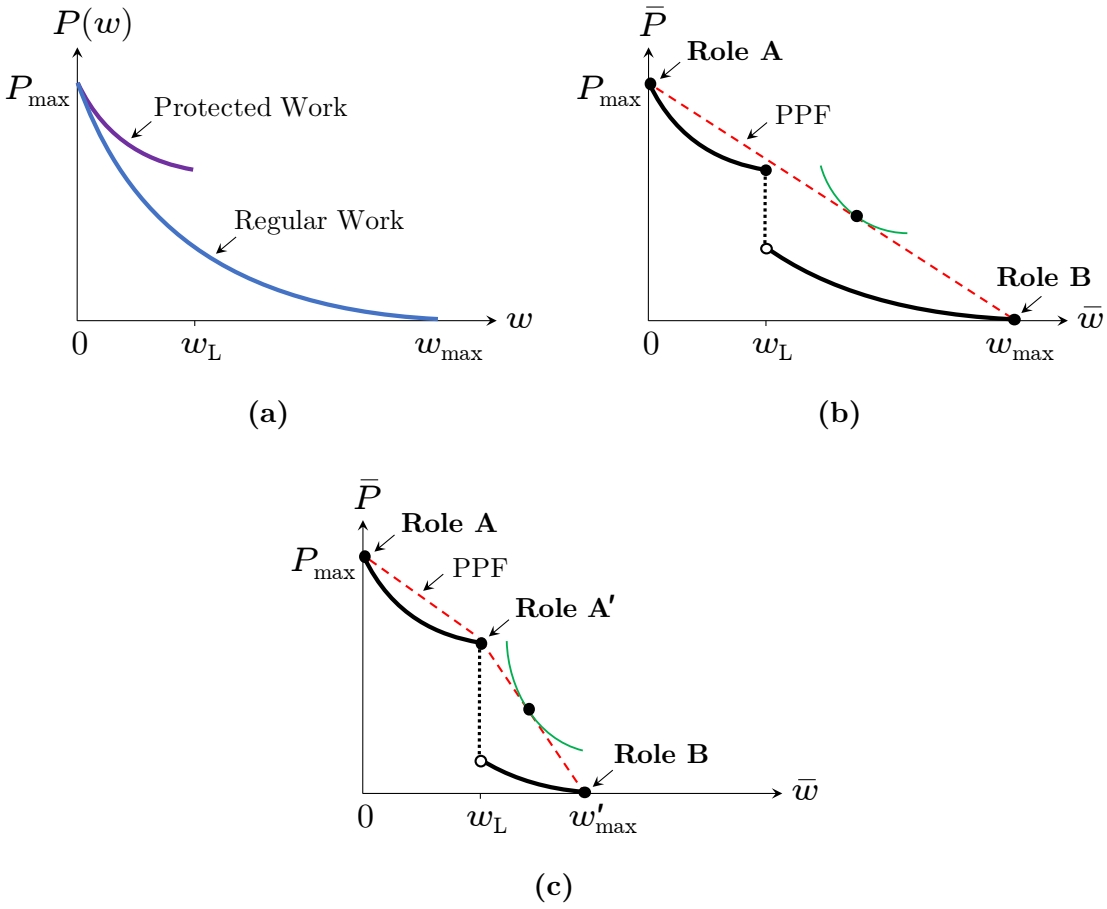




Each family member now faces an (effective) purity function equal to the upper envelope of the two original purity functions. As a result, the family's PPF is either: (i) a single line segment connecting Roles A and B, as depicted in Figure 6(b); or two line segments, one connecting Roles A and A′, and the other one connecting Roles A′ and B, as depicted in Figure 6(c). In the former case, family members are split between Roles A and B, as in the baseline model; in the latter case, they are either

[20]Friedan (1963), p. 257.

Figure 6: Protected Occupations



split between Roles A and A′, or A′ and B, depending on the family's preferences.

The new Role A′ (a "protected worker") is a compromise between purity and income. This role emerges when either protected work is sufficiently attractive (i.e., either w_L or $P(w_L)$ are high), or regular work is sufficiently unattractive (i.e., either $w_{\max}$ or $P_{\max}$ are low), or some combination of the two.

It has been noted that as an economy develops, female labor force participation may first fall and then rise (see Boserup (1970) and Goldin (1994)). We shall address this observation in Section VI(C), making use of the above predictions, but only after we have introduced our fulfillment narrative and the possibility of gender norms.

V. The fulfillment narrative

We now put forward our second story: the "fulfillment narrative." Informally, it goes as follows:

Fulfilling individual desires is important. The world is full of opportunity.

This narrative shifts emphasis away from ideas of purity and corruption; instead, it encourages the pursuit of individual desires and views the outside world as a place where these desires can be fulfilled. At a deeper level, this narrative emphasizes "naturalness" over "purity." Desires, being part of one's nature, are seen as valid.[21]

In the United States, the fulfillment narrative shot to prominence during the 1960s, in large measure in reaction to the strictures of the 1950s family model. It was the impetus behind the period's countercultural movements, including the Women's Movement and the Hippie Movement. The fulfillment narrative perhaps found its purest voice in psychotherapy, which, drawing on the work of psychologists such as Carl Jung, Donald Winnicott, and Erik Erikson, encouraged "self realization" and "finding one's true self," rather than acting out a socially-imposed role.

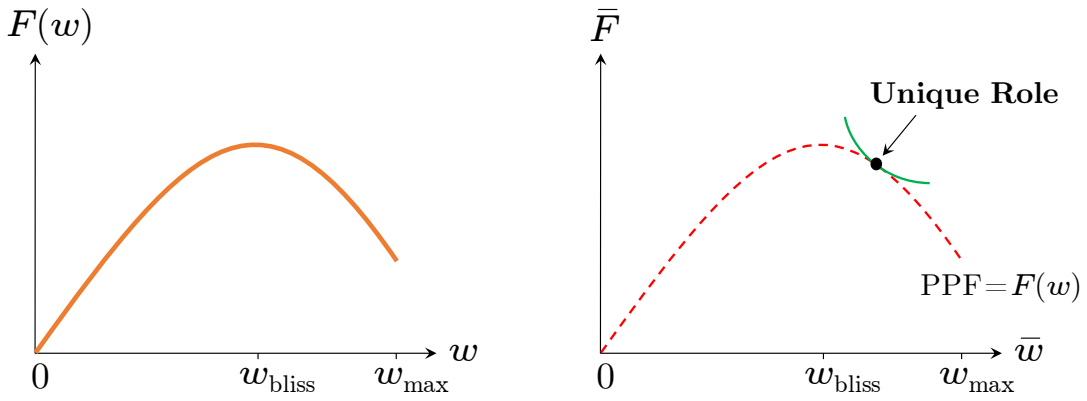
Betty Friedan was Erikson's student; and in *The Feminine Mystique*, which ignited the Women's Movement, she espoused the idea that women were being placed into a socially-imposed role (Role A). In her thinking, they needed to be free to find their true selves through careers — and thereby obtain a measure of fulfillment.

The Hippie Movement, likewise, encouraged people to get in touch with their true natures. Hippies saw traditional roles (A and B) as "square." They invited people, in the words of Timothy Leary, to "turn on, tune in, and drop out" — to eschew the rat race, engage in artistic and sexual experimentation, harmonize with nature, engage in communal living, and use recreational drugs.[22]

[21] The protector narrative takes the opposite view of human nature. For instance, in St. Augustine's interpretation of the Garden of Eden story, man's very nature is corrupted by Adam and Eve's original sin: a schism ("concupiscence") opens between what man naturally longs for and what is virtuous. Thus, man's nature must be denied.

[22] *Close Encounters of the Third Kind*, Steven Spielberg's classic 1977 film, dramatizes the challenge that the fulfillment narrative poses to the traditional 1950s-style family. It tells the story of Roy Neary (Richard Dreyfuss), an unhappily married father of three who, like Friedan's housewives, feels trapped in a role that does not suit him. In one of the film's most memorable scenes, Neary constructs a giant simulacrum of a mountain in the family's living room using dirt from the garden. Neary's mountain represents his decision to act on his true passions and the polluting effect this

Figure 7: Occupational Choice under the Fulfillment Narrative



(a) Fulfillment Function. **(b)** Solution.

In recent years, notions of fulfillment have fueled the rise of "workism" — particularly among the rich and college-educated. Mirroring Friedan, workism emphasizes career as the primary source of identity and meaning in one's life. As noted by Derek Thompson (2019) in *The Atlantic*, rich college-educated millennials "are reared from their teenage years to make their passion their career and, if they don't have a calling, told not to yield until they find one." Consequently, in Robert Frank (2007)'s words, "for many of today's rich there is no such thing as 'leisure' in the classic sense—work is their play."[23]

Because jobs differ in their opportunities for fulfillment, the fulfillment narrative can have important consequences for career choice. There are a variety of views regarding the aspects of a job that matter most for fulfillment. For Friedan, fulfillment is closely related to professional achievement; for the hippies, it derives more from personal enrichment, social impact, and enjoyment; and for some millennials it may be a combination of all of these factors. Regardless, some form of work or engagement with the world is necessary to be fulfilled; at the same time, a remunerative career, in and of itself, lacks meaning. The pursuit of fulfillment therefore rationalizes a woman's choice of a legal career over marrying young and having children, or a college graduate's choice of an academic career over a more lucrative one.

Formally, we equate story utility with fulfillment: associated with each job w,

has on the family. Not surprisingly, following the incident, his wife (Teri Garr) leaves him, taking the kids with her.

[23]Indeed, the richest married men (those in the top decile) had the shortest workweek in 1980 but, by 2005, had the longest (see McGrattan and Rogerson, 2008).

there is a fulfillment level $F(w)$, and so member i's outcome is $V_i = u(\overline{w}+w_0)+F(w_i)$. We assume that $F(w)$ has a concave, inverse-U shape, as shown in Figure 7(a). The increasing portion of $F(w)$ captures the idea that an occupation is important for fulfillment. The decreasing portion reflects the idea that the most lucrative occupations are not typically the most fulfilling. As will become clear, the most critical assumption is that $F(w)$ is increasing for low w; neither the assumption that $F(w)$ has a decreasing portion, nor the assumption that $F(w)$ is everywhere concave, are essential.

A. Occupational Choice under the Fulfillment Narrative

Under the fulfillment narrative, the family's problem is to maximize:

$$\overline{V} = u(\overline{w} + w_0) + \overline{F},$$

where $\overline{F}$ is the average value of $F(w_i)$.

The family's PPF is equal to the fulfillment function (as the function and its convex hull are equal in this case). The family reaches any given point on the frontier by assigning all family members to the same role, so $w_i = \overline{w}$ for all i.

The optimal role, depicted in Figure 7(b), solves the following first-order condition (provided the solution is interior):[24]

$$F'(\overline{w}) = -u'(\overline{w} + w_0). \tag{2}$$

Observe that the optimal role has a positive wage ($\overline{w} > 0$). Intuitively, there is no reason to assign family members to job $w = 0$ as this job is both less fulfilling and less lucrative than intermediate-wage jobs.

VI. Gender Fit

There is an extensive literature outside of economics suggesting that gender norms — and even our very conceptions of gender — are, to a large extent, socially constructed

[24] If $u'(w_{\max} + w_0) + F'(w_{\max}) > 0$, then the optimal wage is $w_{\max}$.

(for a survey, see Cherlin (2017), Chapter 3). As such, gender norms differ across and within societies and change over time.

In this section, we will extend the model to incorporate gender norms. We will start by exploring how gender norms affect the family's allocation of members to jobs. We will then endogenize gender norms and argue that narratives play a critical role in shaping them. For the purposes of our model, we assume that people have binary gender identities ("male" or "female"); gender identity, of course, need not be binary and hence our model is incomplete.

We take as our primitive assumption that individuals have a desire to "fit" their genders. Therefore, if a particular activity is perceived of as "male," men will have a desire (at the margin) to engage in that activity and women will have a desire (at the margin) to shy away from it, and vice-versa. This assumption is standard in the economic literature on identity (see Akerlof and Kranton, 2000).[25] To endogenize gender norms, we further assume that activities are perceived of as more "male" ("female") when more men (women) engage in them.

Our model makes two core predictions. First, provided that men earn on average more than women, protector families will have a preference for assigning women to Role A and men to Role B. Hence, roles in these families will be strongly gendered. Second, gender norms themselves will be stronger in protector families than in fulfillment ones.

Both of these predictions are consistent with our data. Table 2 shows gender differences in behavior for the two types of respondents identified in Section 2. Observe that the fraction of women who work full time is greater among "modern" types while the fraction who "keep house" is greater among "traditional" types. By comparison, "traditional" men and "modern" men are very similar: most work full time and very few keep house. Moreover, for each gender, there is a significant difference in time spent on household chores across types: "traditional" women spend more time on chores whereas "traditional" men spend less. Recall also, from Table 1, that "traditional" types are more likely to be in gendered professions, which is suggestive that gender norms are more pronounced in "traditional" families.

[25] In our model, we take it as given that people have a desire to "fit" their gender identities. This too may be a social construct.

Table 2: Gender Differences

Variable	Men		Women	
	Modern Type Average	Difference Traditional Type	Modern Type Average	Difference Traditional Type
Labor force status: working fulltime (ages 25-55)*	0.818	0.028**	0.577	-0.079***
Labor force status: keeping house (ages 25-55)*	0.016	0.005	0.185	0.075***
Who does household cleaning: always my spouse	0.563	0.356***	-0.533	-0.202**

Note: The table presents the differences by gender in averages between two clusters generated using data from GSS through a k-means cluster procedure using the following questions: 1) Sex before marriage, 2) Better for man to work, woman tend home. After the colon (:) in the variable description, the response that corresponds to the largest numeric value of the question is listed. One thousand iterations with different seeds were computed, and the iteration that maximized the distance between cluster centers is presented. All variables without a star (*) have been standardized. The stars in the diffences columns, represent the significance level at which the difference across clusters is statistically significant using heteroskedasticity robust standard errors: *** for 0.01, ** for 0.05, and * for 0.1.

A. Modeling Gender Norms

Suppose there is a population consisting of a large number of families and suppose the population is half male and half female.

To capture the idea that families care about gender fit, we add a third term to V_i:

$$V_i \quad = \quad \underbrace{u(\overline{w} + w_0)}_{\text{utility from consumption}} \quad + \quad \underbrace{S(w_i)}_{\text{utility from story}} \quad + \quad \lambda \cdot \underbrace{\Phi_i}_{\text{gender fit}},$$

where Φ_i measures person i's gender fit and $\lambda \geq 0$ denotes the importance of gender fit. We will refer to the sum of the second and third terms as "net story utility." As we shall see, gender fit considerations create comparative advantages — and potential gains from "trade" — across genders.

We now propose a functional form for Φ_i. Let W denote the average population wage and, for any given i, let W_i denote the average wage of people of the same gender as i and let W_{-i} denote the average wage of people of the opposite gender. To capture the idea that gender fit is both about being *like* one's own gender and *unlike* the opposite gender, we assume:

$$\Phi_i \quad = -\frac{1}{2} \underbrace{(w_i - W_i)^2}_{\text{distance from own gender}} \quad + \quad \frac{1}{2} \underbrace{(w_i - W_{-i})^2}_{\text{distance from opposite gender}}.$$

Upon rearranging terms, gender fit simplifies to:

$$\Phi_i = \Delta_i \cdot w_i - \Delta_i \cdot W,$$

where $\Delta_i = W_i - W_{-i}$ denotes the gender wage differential from the perspective of person i. Notice that Φ_i has the following properties:

1. Φ_i is linear in w_i. As a result, in contrast to $S(w_i)$, gender fit does not add concavity/convexity to the family's objective.

2. Φ_i is increasing in w_i for the gender with the higher wage ($\Delta_i > 0$) and decreasing in w_i for the gender with the lower wage ($\Delta_i < 0$). Hence, a non-zero wage differential motivates family members to specialize along gender lines.

3. As the magnitude of Δ_i grows, Φ_i becomes more responsive to w_i. Therefore, the motive to specialize is increasing in the the wage differential.

Our analysis will proceed as follows. In Section B, we will take the male-female wage differential in the overall population as fixed and we will consider the problem of a single family.

Next, in Section C, we will consider equilibria in the population as a whole. We will show that, when families hold the protector narrative, every "stable equilibrium" has a positive wage differential. In this sense, gender differences are inevitable. By contrast, under the fulfillment narrative, so long as families do not weight gender fit too heavily ($\lambda < \overline{\lambda}$), a stable equilibrium exists with zero wage differential.

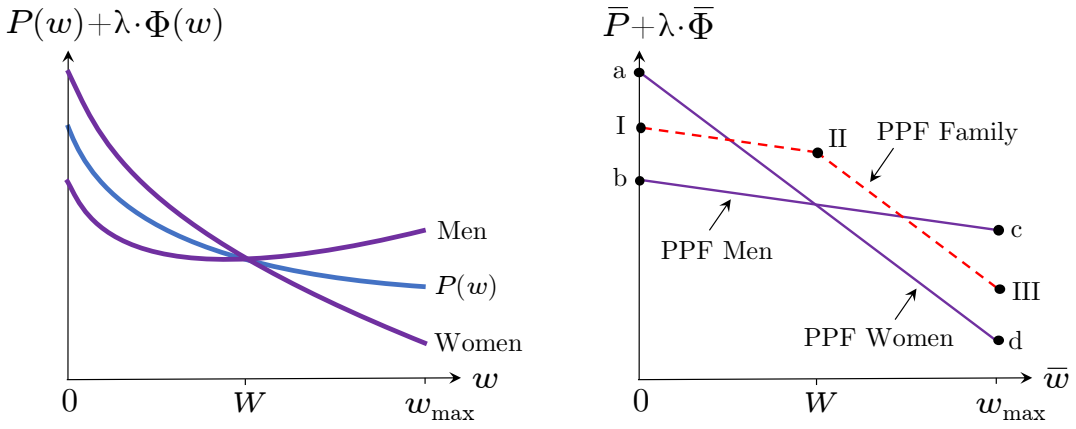
B. Single Family's Problem

Let Δ denote the male-female wage differential in the population and, for concreteness, assume $\Delta > 0$ (i.e., on average, males earn more than females). Here, we consider the problem of a single family that takes this differential as given.

The family's PPF is the maximum achievable "net story utility" for the family ($\overline{S} + \lambda \cdot \overline{\Phi}$) for every value of $\overline{w}$. For each story, we will construct the PPF by first building gender-specific PPFs and then aggregating across genders.

Protector Narrative. Suppose the family holds the protector narrative and suppose, as in the baseline model, that the purity function is convex. Figure 8(a) plots the

Figure 8: Gender Norms and the Protector Narrative



(a) Net Purity Functions. **(b)** Gender-specific and Family PPFs.

purity function and the "net purity" functions $(P(w) + \lambda \cdot \Phi_i(w))$ for each gender. The female function is a clockwise rotation of the original $P(w)$ function around the population wage W; the male function is a counter-clockwise rotation.[26]

The following proposition describes the resulting PPF for the family.

Proposition 1. *The family's PPF when $\Delta > 0$ is illustrated in Figure 8(b). The family reaches any given point on the PPF by:*

(i) Splitting its members between Role A ($w = 0$) and Role B ($w = w_{max}$).

(ii) Following a pecking order in the assignment of roles, whereby women (men) are assigned to Role A (B) before men (women).

Part (1) of the proposition follows from the fact that each gender's net purity function is convex. Hence, it is efficient to split all members of a given gender between the extreme points of this function.

Part (2) is obtained as follows. Part (1) implies that the resulting PPF for each gender is a straight line, as depicted in Figure 8(b).[27] Thus, the model is akin to a Ricardian trade model where each gender represents a country and a planner wishes to maximize the average welfare of the two countries. In this model, men have a comparative advantage at wage production while women have a comparative

[26]This is because $\Phi_i(W) = 0$ and, since $\Delta > 0$, $\Phi_i(w) = 0$ is increasing (decreasing) in w for men (women). Note that the curves would be rotated in the opposite directions if $\Delta < 0$.

[27]Each gender's PPF is the line segment connecting the extreme points of the net purity function.

advantage at purity production. Because of these comparative advantages, men are assigned to Role A only after every woman has been assigned to Role A, and women are assigned to Role B only after every man has been assigned to Role B.

The aggregate (family) PPF is therefore traced as follows. First, assign all members to Role A. This delivers point I on the PPF, which is a weighted average of points a and b on the gender-specific PPFs. The weights are determined by the fractions of men and women in the family. Next, per the pecking order, gradually move men from Role A to B until all men are assigned to Role B. This traces the line segment connecting points I and II. Point II on the PPF is a weighted average of points a and c on the gender-specific PPFs. Finally, gradually move women from Role A to Role B, until all family members are assigned to Role B. This traces the line segment connecting points II and III. Point III is a weighted average of points c and d on the gender-specific PPFs.[28]

The solution to the family's problem is the point on the family's PPF that maximizes $\overline{V}$. It is worth highlighting the following results:

1. Point II of the PPF, where all women are in Role A and all men are in Role B, is a kink point and therefore a point at which bunching may occur. That is, a significant fraction of families may opt for a perfect gender split across roles.

2. A decline in the male share of the family (e.g., due to the death of a husband) weakly increases both the fraction of men and the fraction of women assigned to Role B. Intuitively, the pecking order in the assignment of roles implies that a decline in the male share is a negative income shock, and a positive purity shock, to the family. Since consumption and purity are weakly complementary to each other, such a shock leads both genders to focus (weakly) more on breadwinning and (weakly) less on purity.[29]

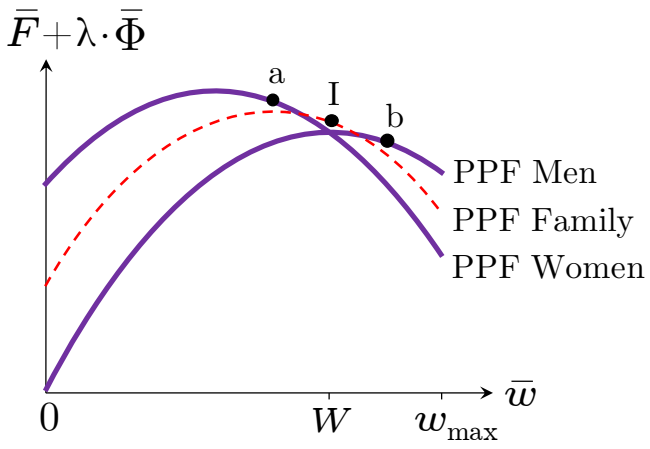
Fulfillment Narrative. Now, suppose the family holds the fulfillment narrative. Assume the fulfillment function is concave (as in the baseline model). Similar to before, the "net fulfillment" functions $(F(w) + \lambda \cdot \Phi_i(w))$ for each gender are rotations of the original $F(w)$ function around the population wage W: clockwise for women and counterclockwise for men.

[28]Note that the intersection of the gender-specific PPFs always occurs at $w = W$. Point II, however, may be to the right or left of W.

[29]This result generalizes to any outcome function $V(w, P)$ with $V_{ww}, V_{PP} \leq 0$ and $V_{wP} \geq 0$.

The PPF for each gender is depicted in Figure 9. These PPFs are equal to the gender-specific net fulfillment functions (given that the convex hull of a concave function is equal to the function itself). Along these PPFs, all family members of a given gender hold the same role.

Figure 9: Gender Norms and the Fulfillment Narrative



As in the protector case, the model is akin to a trade model where each gender represents a country and a planner wishes to maximize average welfare. What differs is that we now have concave production frontiers (as in a Hecksher-Ohlin model). Hence, it is optimal to equate the marginal rates of transformation (i.e., the slopes of the PPFs) across genders.

Each point on the aggregate PPF is obtained by taking a weighted average of points of equal slope on the gender-specific PPFs. For instance, point I in Figure 9 is a weighted average of points a and b.[30] As a result, the family's PPF is also concave, with a peak at an intermediate wage.

The solution to the family's problem is the point on the family's PPF that maximizes $\overline{V}$. Observe that there will be some degree of differentiation between the genders. However, these differences are not extreme. The reason is that, while gender fit considerations push towards gender specialization, the fulfillment narrative pushes against it. As we show in the next section, this has implications for the extent of gender norms in the population equilibrium.

[30]When it is not possible to equate the slopes, at least one gender will be at an extreme.

C. *Population Equilibrium*

Here, we consider equilibria in the population as a whole. To simplify, suppose families in the population are identical and have an equal number of men and women.

Denote by $BR(\Delta)$ the wage differential that arises inside a family when it best responds to population wage differential Δ.[31] We define a population equilibrium as a value Δ^* such that $BR(\Delta^*) = \Delta^*$.

We are interested, in particular, in *stable equilibria* that are defined as follows. Suppose families live for many periods and the wage differential at time 0 is Δ_0. In each subsequent period, families best respond to the previous period's wage differential, so that the wage differential at time t is $\Delta_t = BR^t(\Delta_0)$. We will say that an equilibrium Δ^* is stable if, for all Δ_0 close to Δ^*, the wage differential converges to Δ^* as $t \to \infty$. This rules out knife-edge equilibria that are not robust to perturbations.

We now show that the protector and fulfillment narratives can lead to very different outcomes.

Under the protector narrative, every stable equilibrium has a positive wage differential:

Proposition 2. *Suppose that families hold the protector narrative and, absent gender fit considerations, they would choose an interior solution — that is, they would assign members to both Roles A and B. Then, every stable equilibrium has a positive wage differential.*

The reason a zero wage differential is unstable is that any nonzero wage differential in the population (no matter how small) induces a sizable wage differential inside each family. This is because families assign members to extreme roles and follow a pecking order in doing so.[32]

In practice, we can expect to see not only a positive differential but a large one. As noted, the presence of pecking orders within families, on its own, generates a significant population wage differential. Furthermore, there is a multiplier effect: the greater the wage differential in the population, the greater the optimal differential

[31] There is a unique best response when $\Delta \neq 0$. When $\Delta = 0$, we assume that the family assigns members to roles in a gender-balanced way. Hence, $BR(0) = 0$.

[32] For all $\Delta \neq 0$, $|BR(\Delta)| \geq \min\{\mu, 1-\mu\} \cdot 2w_{\max}$, where μ denotes the optimal fraction of family members assigned to Role B when $\Delta = 0$.

within each family.[33]

Under the fulfillment narrative, by contrast, it is easy to obtain a stable equilibrium with zero wage differential:

Proposition 3. *Suppose that families hold the fulfillment narrative and let w^* denote the optimal wage absent gender fit considerations. Then, there is a stable equilibrium with zero wage differential provided:*

$$\lambda < -F''(w^*)/4.$$

The inequality in the proposition is met when the curvature of the fulfillment function is large relative to the family's concern about gender fit λ. This inequality highlights the tradeoff faced by fulfillment families: while gender fit considerations push towards gender specialization, the curvature of the fulfillment function pushes towards a common role for all members. When the second force dominates, families react to small population wage differentials with even smaller differentials of their own. Consequently, a zero wage differential is stable.

D. Female Labor Force Participation

Figure 10(a) plots female labor force participation (FLFP) across countries as a function of GDP per-person employed. In line with the findings of Boserup (1970) and Goldin (1994), there is an approximately U-shaped relationship between the two variables: as GDP per-person employed grows, FLFP first falls, then grows.

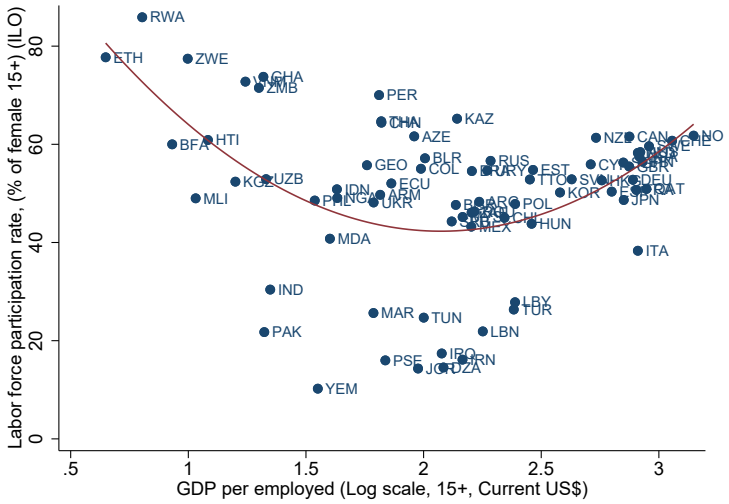
Our framework suggests a stylized, three-pronged mechanism that is capable of accounting for this U-shape:

1. Among protector families, an increase in the earning potential ($w_{\max}$) of its members incentivizes female family members to withdraw from the labor market, and in particular switch from Roles B ("regular work") and A′ ("protected work") to Role A (no work).

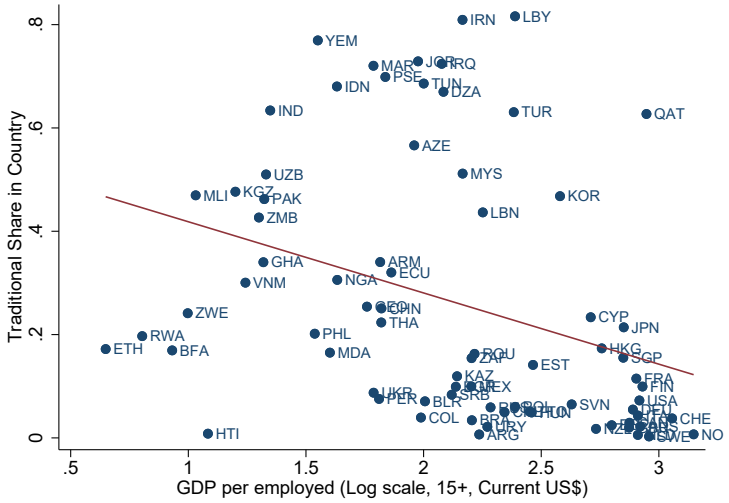
2. Among fulfillment families, FLFP is high, and in particular higher than among

[33] As Δ grows, point II on the PPF moves upward while points I and III remain the same. As a result, the family moves closer to point II, where the within-family wage differential is greatest.

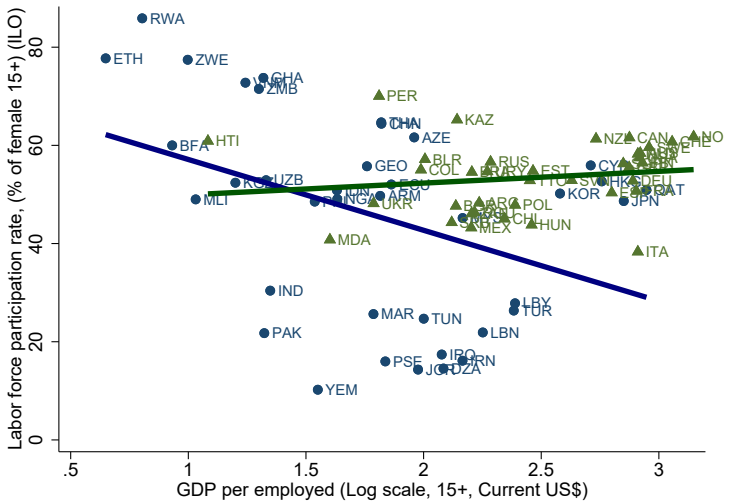
Figure 10: Female Labor Force Participation



(a)



(b)



(c)

the most wealthy protector families, because work is a common source of fulfillment.[34]

3. As income rises, more and more families adopt the fulfillment narrative.

Figures 10(b) and 10(c) provide some suggestive evidence consistent with this mechanism. To construct these figures we first use data from the World Value Survey (waves 5 and 6) to classify respondents into "traditional" and "modern" types using the same methodology we used in Section 2 for US households.[35] Figure 10(b) shows a negative relationship between GDP per-person employed and the share of "traditional" types (this negative relationship is significant, with $p = 0.000$). Figure 10(c) divides countries into those above-median levels of "traditional" types (blue dots) and those above-median levels of "modern" types (green triangles). Among the top 50% "traditional" countries, as GDP per-person employed increases, FLFP falls (this negative relationship is significant, with $p = 0.012$). Among the top 50% "modern" countries, by contrast, there is no longer a negative relationship between the two variables (the relationship is positive and insignificant, with $p = 0.463$); moreover, on average, FLPF jumps relative to that in the wealthiest "traditional" countries.

VII. Investments

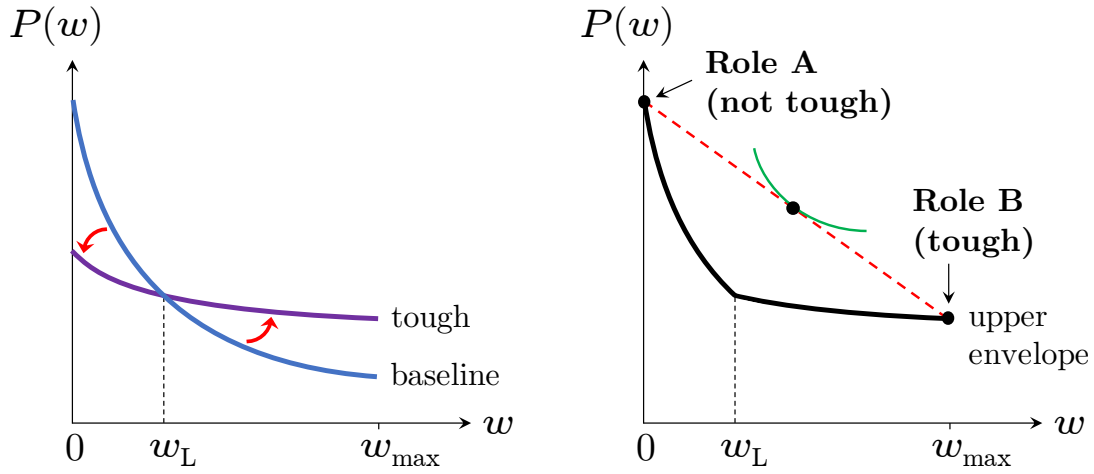
In this section, we enrich the bundle of behaviors associated with each narrative by adding further decisions to the family's problem. We model these additional decisions as investments that alter story utility.

We will show that, in the typical protector family: (i) men are "tougher" than women; (ii) men are authoritarian towards women and children; and (iii) women are, to some degree, veiled or cloistered. In contrast, in the typical fulfillment family: (i) men and women are equally "tough"; (ii) there is no role for authoritarianism; and (iii) no family members are veiled or cloistered.

[34] As we shall see in Section VIII, fulfillment women are also more likely to remain single and be the sole family earner.

[35] We cluster respondents using the following questions: 1) Would not like to have as neighbors: Unmarried couples living together; 2) Men should have more right to a job than women, 3) Being a housewife just as fulfilling. Table A.1 in the Appendix illustrates the differences between the two clusters. Table A.2, also in the Appendix, ranks countries by their share of "traditional" types.

Figure 11: Toughness



(a) Effect of Toughness on $P(w)$.

(b) PPF.

A. Toughness

Suppose the family has a choice whether to "toughen up" its members. Examples would be teaching a child how to fight or shoot a gun, or imparting certain types of knowledge. Assume that toughness has a negligible impact on fulfillment but a sizable impact on purity. Toughening someone up is akin to giving them a vaccination: it exposes them to polluting elements, but it protects them against further exposure. Consequently, toughness reduces purity at low wages ($w < w_L$) and raises purity at high wages ($w > w_L$), as shown in Figure 11(a).

Protector Narrative. In a protector family, absent gender fit considerations, each member faces an (effective) purity function equal to the upper envelope of the original two, as depicted in Figure 11(b). Observe that, as before, the solution to the family's problem involves splitting members between Roles A and B; Role B's are toughened up while Role A's are not. Note that when the family also cares about gender fit, not only will roles become gendered, as we showed in Section VI; qualities associated with roles, such as toughness, will become gendered as well.

Fulfillment Narrative. By assumption, a fulfillment family will be more or less indifferent over toughening up its members. Suppose the choice, given this near indifference, is determined by members' idiosyncratic preferences. Then, provided there are no systematic gender differences over these idiosyncratic preferences, the family

with toughen up a roughly equal fraction of men and women, and hence "toughness" will not be gendered.

B. Authoritarianism

One way to toughen someone up may be to give them knowledge. Consider sexual education. On the one hand, sexual education might be seen by a protector type as a polluting. Indeed, in our GSS sample, "traditional" types are considerably more opposed to sexual education in public schools — by 0.62 standard deviations (p=0.000) — than "modern" types. On the other hand, sexual education guards against other threats to purity (e.g., unwanted pregnancy or sexually transmitted diseases) — and may have economic benefits too.

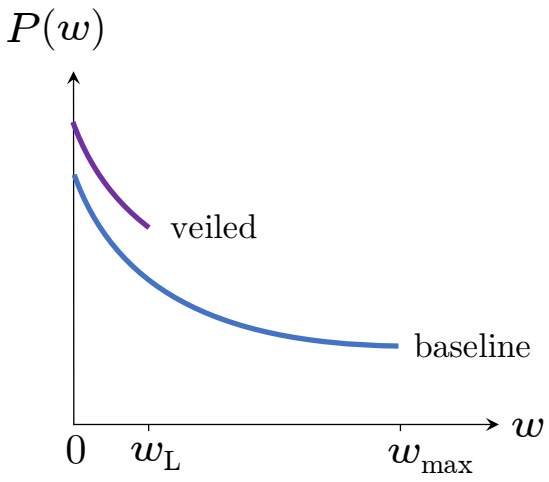
Our model of toughness suggests that protector-narrative families will give sexual education — and other protective forms of knowledge — to Role B's but not to Role A's. Furthermore, our model suggests that gender norms will arise around the acquisition of such forms of knowledge. In line with this prediction, the "cult of domesticity" held up innocence as one of the key feminine virtues. For instance, *Whisper to a Bridge*, the 1851 advice book to new brides, is notable for the complete absence of intimate information.

With innocence, of course, comes a series of threats to purity. The innocent girl, so the thinking goes, is easy prey for slick tricksters. As such, it is the job of male members of the household to use their knowledge to look out for their womenfolk. Women, in turn, were expected, according to Barbara Welter, to be submissive and follow men's orders. *The Young Lady's Book,* for instance, published in 1830, advises its readers: "whatever situation of life a woman is placed from her cradle to her grave, a spirit of obedience and submission, pliability of temper, and humility of mind, are required of her."[36]

Under the fulfillment narrative, by contrast, there is no reason to keep people innocent. Consequently, there should be far less authoritarianism within fulfillment families. Table 1 provides some evidence. Recall that there is a considerable difference between "traditional" and "modern" types in parenting styles. "Traditional" types are more likely to spank their children and place greater value on obedience.

[36]Hosmer (1854), p. 28.

Figure 12: Veiling



C. Veiling and Cloistering

A conspicuous difference between some traditional and modern families is the degree to which women are veiled and cloistered. While veiling may serve a variety of purposes, it is often associated with ideas of purity and the fending off of potential predators.[37]

A simple interpretation of cloistering and some types of veiling is that they increase purity but reduce earning potential, as depicted in Figure 12. Our model of veiling/cloistering is thus very similar to our model of protected work. This model predicts that protector-narrative families will choose to veil members assigned to low-wage roles ($w < w_L$). By contrast, fulfillment-narrative families will not engage in veiling.

VIII. Marriage

A simple extension of the model rationalizes several broad trends in marriage. Suppose that a pair of individuals, 1 and 2, must decide whether to marry (or otherwise form a family). For simplicity, they hold the same narrative, have the same earning potential, and for now, do not care about gender fit. If they marry, each receives a payoff of $\overline{V} + \alpha$, where $\overline{V}$ denotes the pair's average outcome and α denotes an

[37] Veiling may also protect family members from exposure to other cultures, as in the model of Carvalho (2012).

"affinity" payoff. If they do not marry, individual i receives a payoff of V_i. We assume that, if indifferent, they do not marry.[38]

For the time being, assume that gender fit considerations are absent (i.e., $\lambda = 0$). Observe that there are two reasons why the pair would choose to marry in our model: (1) affinity; and (2) exploiting gains from specialization. In fulfillment families, there is no specialization. Hence, under the fulfillment narrative, marriage takes place if and only if the pair has positive affinity ($\alpha > 0$). By contrast, under the protector narrative, there are gains from specialization, so the affinity threshold for marriage is lower. Proposition 4 summarizes.

Proposition 4. *Suppose individuals do not care about gender fit. Then:*

1. *Under the fulfillment narrative, marriage occurs if and only if there is positive affinity: $\alpha > 0$.*

2. *Under the protector narrative, provided married individuals adopt an interior solution, the affinity threshold for marriage is less than zero.*

Suppose, further, that there is a population of matched pairs and that the affinity of each is an independent draw from the same distribution, regardless of narrative. Then, Proposition 4 implies that protector-narrative pairs will have a higher marriage rate than fulfillment-narrative pairs.[39]

Our empirical findings are consistent with this prediction. As Table 1 shows, in the United States, "traditional" individuals have a 13% higher marriage rate than "modern" individuals.[40] Scholars also argue that "romantic love" has only recently come to be seen as a proper basis for marriage. According to Cherlin (2014): "To most...nineteenth century men and women, marrying someone because of strong romantic feelings was considered risky. Passionate, romantic love was thought to be a base emotion that faded quickly, leaving little support for the couple."[41] Furthermore, the modern system of dating — which shifted power in matchmaking away from

[38]Here, we do not distinguish between marriage and cohabitation. For a discussion of this topic, see Matouschek and Rasul (2008).

[39]Under the protector narrative, since affinity is a less central motive for marrying, we would also expect to see a higher incidence of arranged marriages.

[40]Even after controlling for income, age, gender, education, and year, the difference in marriage rates between "traditional" and "modern" types is highly significant (see Table A.4 in the Appendix).

[41]See Cherlin (2014), p. 182.

parents — only became widespread in the early to mid twentieth century (see Bailey, 1988 and Modell, 1989).

A. Gender Norms and Marriage.

We now introduce gender fit considerations ($\lambda > 0$). We focus on the case of protector families since it is in this case that gender norms tend to be most pronounced.

In our model, so long as a pair consists of a man and a woman, gender norms create additional gains from specialization. Intuitively, if it violates gender norms for the woman to work or for the man to stay at home, then the woman needs the man to provide income and the man needs the woman to provide purity. Hence, gender norms tend to lower the affinity threshold for marriage.[42]

There are some important cases, however, where gender norms may be an impediment to marriage. Some examples follow.

Crisis of Masculinity. Over the past 50 years, labor market outcomes of working-class American men have deteriorated significantly. According to Binder and Bound (2019), between 1973 and 2015, real earnings of 25-54 year-old high-school-educated men have declined by 18.2 percent in real terms. This trend has been accompanied by dramatic changes in family structure: marriage rates have declined and single parenthood has increased (see McLanahan (2004), Edin and Nelson (2013), and Cherlin, 2014).

This pattern is consistent with our model. Among protector individuals, a reduced male earning potential may reduce the attractiveness of marriage. This is because when gender norms are strong, a man with a low earning potential performs "poorly" in both roles A and B: regardless of his choice of role, he will not be considered sufficiently "manly." As a result, his potential mate may prefer to remain single.[43]

"Fallen angels." According to Sally Mitchell (1981), the "fallen angel" is a frequent motif in Victorian literature. For instance, William Gayer Starbuck, in his 1864

[42]Our assumption that married couples seek to meet gender norms is consistent with the findings of Murray-Close and Heggeness (2018) who show that households where the wife earns more than the husband have a tendency to deflate the wife's and inflate the husband's earnings.

[43]Indeed, if the earning potential of a man is below that of his potential female partner, and the earning potentials of both are weakly below the average earnings of their peer group, then the net purity function of the woman will lie strictly above that of the man, and thus absent a sufficiently large affinity gain, she will be better off not marrying him.

novel *Woman Against the World*, gives this warning to women: "When a woman falls from her purity there is no return for her — as well may one attempt to wash the stain from sullied snow. Men sin and are forgiven; but the memory of a woman's guilt cannot be removed on earth. Her nature is so exquisitely refined that the slightest flaw becomes a huge defect."[44]

Among protector individuals, a shock to female purity may reduce the marriage rate. This is because, when gender norms are strong, a woman who is already considered "impure" will perform poorly from the standpoint of the narrative in both Role A (by definition) and Role B (because she would violate gender norms). Thus, she may have difficulties finding a partner.

Same-sex marriage. "Traditional" types are considerably less tolerant of homosexuality than "modern" types in our GSS sample. "Traditional" types are more likely to say homosexual relations are wrong (difference of 0.93 standard deviations, $p = 0.000$) and more likely to oppose gay marriage (difference of 0.95 standard deviations, $p = 0.000$). Our model helps account for this phenomenon. While gender norms may raise the likelihood of heterosexual marriages among protector individuals, they may have the opposite effect on homosexual marriages. Indeed, if a homosexual pair holding the protector narrative specializes into Roles A and B, as favored by the narrative, one member must violate a gender norm, thus lowering the value of marriage.

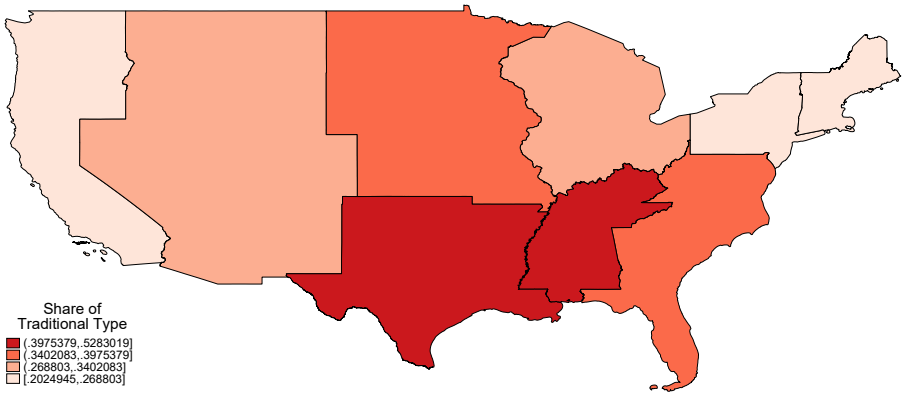
IX. Endogenous Narratives

So far, we have treated each family's narrative as given. Here we offer a preliminary (and informal) discussion that hints at how families might choose their narratives in the first place. Specifically, we suggest that two forces – both previously identified in the literature – may play an important role in this choice (see especially Akerlof (2017)).

The first force is a desire to do well relative to other families in producing story utility, as measured by the family's own story. That is, a protector (respectively, fulfillment) family will compare its purity (respectively, fulfillment) level against that achieved by other families it interacts with, and receive utility or disutility (i.e.

[44]See Starbuck (1864).

Figure 13: Geographical Variation in Narratives



"own esteem") on the basis of this comparison. Because it is difficult for families to perform well under both the protector and fulfillment metrics at once, they will tend to specialize on a single objective and hence adopt a single narrative (protector or fulfillment, but not both). Other things equal, the chosen narrative will be the one where the family has a comparative advantage. (A very wealthy family, however, may be able to perform well under both narratives at once, and may therefore choose to hold both.)

The second force is a desire to be well perceived by peer families, as measured by the stories of peer families. That is, a family that interacts with protector (respectively, fulfillment) families will be judged by these families on the basis of how well it performs along the purity (respectively, fulfillment) dimension, and will receive utility or disutility (i.e. "peer esteem") on the basis of this judgment. This force pushes families toward conformity: other things equal, families will tend to specialize on what their peers happen to value, and hence adopt the same narratives as they do.

If social classes differ in their comparative advantages, the first force (a desire for "own esteem") has the potential to produce class differences in narratives.[45] In line with this possibility, in our GSS sample, "modern" types have higher socioeconomic status, as measured by a socioeconomic index (0.15 standard deviations higher, $p = 0.000$), years of schooling (1 additional year, $p = 0.000$), and individual income (0.12 standard deviations higher, $p = 0.000$). One way to rationalize this pattern

[45]Furthermore, if families tend to interact with families of the same class, the second force will generate within-class conformity, and hence exacerbate these class differences.

is to assume that an individual's access to high-wage jobs that are also fulfilling is dependent on having high human capital. In this case, on average, middle- and upper-class families may have an advantage, relative to working class families, at generating fulfillment.

The second force (a desire for "peer esteem") has the potential to produce a geographical clustering of narratives (with close neighbors likely sharing the same narrative). Figure 13 shows (low resolution) geographical clustering from our GSS sample.

Finally, it is worth noting that societies with weak institutions and high levels of corruption may be ones where the only jobs that are high-wage are unfulfilling (for instance, they may involve corruption). As a result, these societies might gravitate towards the protector narrative. In this case, preserving "purity" of family members can potentially serve as a justification for a breadwinner's impure acts. A possible example is Chiaromonte, Italy (aka "Montegrano") circa 1955 as documented by Banfield (1967). Banfield termed the prevailing ethic "amoral familism": a version of the protector narrative where individuals placed the wellbeing of their immediate families over the wellbeing of the wider community.

X. Discussion

We have argued that augmenting the classic family model with stories significantly enhances its explanatory power. Families with different narratives will adopt very different bundles of behavior and will also respond differently to changes in their economic conditions.

Our model, by necessity, remains incomplete. Perhaps most notably, we only touched on some of the implications of the protector and fulfillment narratives. Other potential implications include matters of fertility, such as age of child bearing, quantity-quality trade-offs, and abortion; as well as family formation and disintegration, including divorce, remarriage, and the use of dowries. While stories, and their interaction with economic motives, no doubt play a key role in these choices, each one calls for a judicious treatment of its own.

In addition, the two stories we have focused on capture only a subset of the narratives that exist. Other important narratives, which may serve as either complements

or substitutes for these two, concern views on lineage (e.g. matrilineal, patrilineal, bilateral) and more broadly on kinship. We have also only hinted at how family narratives originate and what economic factors might govern their spread.

Finally, we have only begun to scratch the surface in terms of testing the theory. Families have changed a great deal over time, while at the same time remaining highly diverse. A careful mapping of this evolution is likely to reveal how changes in families' economic conditions act in conjunction with their changing narratives.

Appendix A

Table A.1: World Value Survey Clusters

Variable	(1) Modern Type Average	(2) Difference Traditional Type
Justifiable: Sex before marriage: Never justifiable	-0.090	0.355***
Jobs scarce: Men should have more right than women: Agree	-0.145	0.568***
Most people can be trusted: Can't be too careful	-0.036	0.143***
Being a housewife just as fulfilling: Agree strongly	-0.077	0.302***
Would not like as Neighbors: Unmarried couples living together	-0.585	2.294***
Would not like as Neighbors: Homosexuals: Mentioned	-0.092	0.361***
Important child qualities: obedience: Important	-0.045	0.177***
Ever married*	0.654	0.060***
How many children do you have*	1.724	0.468***

Note: The table presents the differences in averages between two clusters generated using data from World Value Survey through a k-means cluster procedure using the following questions: 1) Would not like to have as Neighbors: Unmarried couples living together, 2) Jobs scarce: Men should have more right to a job than women, 3) Most people can be trusted. After the colon (:) in the variable description, the response that corresponds to the largest numeric value of the question is listed. One thousand iterations with different seeds were computed, and the iteration that maximized the distance between cluster centers is presented. All variables without stars (*) have been standardized. The stars in column 2, represent the significance level at which the difference across clusters is statistically significant using heteroskedasticity robust standard errors: *** for 0.01, ** for 0.05, and * for 0.1.

Table A.2: Country Ranking by Share of Modern Type Respondents

Country	Ranking	Country	Ranking	Country	Ranking
Sweden	1	Serbia	27	Ecuador	53
Netherlands	2	Ukraine	28	Ghana	54
Argentina	3	Bulgaria	29	Armenia	55
Norway	4	Finland	30	Zambia	56
Haiti	5	Mexico	31	Lebanon	57
Andorra	6	France	32	Pakistan	58
New Zealand	7	Kazakhstan	33	South Korea	59
United Kingdom	8	Estonia	34	Mali	60
Uruguay	9	South Africa	35	Kyrgyzstan	61
Australia	10	Singapore	36	Uzbekistan	62
Spain	11	Taiwan	37	Malaysia	63
Canada	12	Romania	38	Azerbaijan	64
Brazil	13	Moldova	39	Qatar	65
Switzerland	14	Burkina Faso	40	Turkey	66
Colombia	15	Ethiopia	41	India	67
Italy	16	Hong Kong	42	Algeria	68
Hungary	17	Rwanda	43	Indonesia	69
Chile	18	Philippines	44	Tunisia	70
Trinidad & Tobago	19	Japan	45	Palestine	71
Germany	20	Thailand	46	Morocco	72
Russia	21	Cyprus	47	Iraq	73
Poland	22	Zimbabwe	48	Jordan	74
Slovenia	23	China	49	Yemen	75
Belarus	24	Georgia	50	Iran	76
United States	25	Vietnam	51	Libya	77
Peru	26	Nigeria	52		

Note: The table presents a ranking of countries in descending order based on the share of modern type households in the country. To classify households in traditional or modern type, two clusters were generated through a k-means cluster procedure using the following question from the WVS: 1) Would not like to have as Neighbors: Unmarried couples living together, 2) Jobs scarce: Men should have more right to a job than women, 3) Most people can be trusted. Then, the share of modern households was computed for each country. One thousand iterations with different seeds were computed, and the iteration that maximized the distance between cluster centers is presented.

Table A.3: Extended Version of Table 1

Variable	Fulfillment Average	Difference Protector	p-value	N	% of Clusters
Beliefs and Values					
Labor Force and Gender Roles					
Preschool kids suffer if mother works: strongly disagree	0.172	-0.502	0.000	26887	1.000
Better for man to work, woman tend home: strongly disagree	0.274	-0.796	0.000	27296	1.000
Women not suited for politics: disagree	0.142	-0.419	0.000	25924	1.000
Mother working doesn't hurt children: strongly disagree	-0.152	0.442	0.000	27112	1.000
A man won't get a job or promotion: very unlikely	0.042	-0.136	0.000	6565	1.000
A woman won't get a job or promotion: very unlikely	0.015	-0.049	0.106	6599	0.000
Family life suffers if mom works f-t: strongly disagree	0.190	-0.568	0.000	4585	1.000
Wife should help husbands career first: strongly disagree	0.258	-0.701	0.000	14177	1.000
Should hire and promote women: strongly disagree	-0.012	0.038	0.195	7224	0.113
Women take care of home not country: disagree	0.208	-0.568	0.000	14092	1.000
Importance of women's rights issue to r: not imp at all	-0.107	0.311	0.000	938	0.992
For or against preferential hiring of women: strongly against	0.004	-0.012	0.692	6941	0.579
Job is best way for woman to be indep: strongly disagree	-0.068	0.187	0.000	1761	0.879
Husb & wife should contrib to family income: strongly disagree	-0.135	0.383	0.000	2676	0.992
Both men and women should contribute to income: strongly disagree	-0.111	0.363	0.000	2098	0.992
Shld woman with preschooler work?: stay home	-0.163	0.480	0.000	2546	1.000
Job is just a way to earn money: strongly disagree	0.025	-0.072	0.149	2109	0.682
Enjoy job even if $ not needed: strongly disagree	-0.045	0.133	0.009	2086	0.992
Shld mom work aftr marriage, before kids?: stay home	-0.119	0.327	0.000	1588	1.000
Imp to r of having a fulfilling job: not at all important	-0.070	0.192	0.007	1022	0.962
Importance of social usefulness in a job: not impt at all	0.021	-0.062	0.215	2102	0.000
Being housewife as fulfilling as paid work: strongly disagree	0.103	-0.315	0.000	2906	0.992
Men should earn money women keep house: strongly disagree	0.219	-0.715	0.000	2120	1.000
Husb shld work wife shld look after home: strongly disagree	0.256	-0.740	0.000	3122	1.000
Work important and feel accomplishment: fifth	0.019	-0.055	0.040	7459	0.318
How satisfied is r with his/her job: completely dissat	0.052	-0.193	0.002	1398	0.598
Should women work: disapprove	-0.118	0.321	0.000	14267	1.000
Do most women work to support family: strongly disagree	-0.076	0.211	0.004	908	0.815
Allow workers more flexible hours: no, should not offer this option	-0.029	0.083	0.287	928	0.000
Job security is good: not at all true	0.011	-0.034	0.742	563	0.000
Importance of high pr income in a job: not impt at all	-0.022	0.064	0.200	2099	0.000
Should working women have paid maternity leave: strongly disagree	-0.055	0.152	0.046	851	0.897
Men hurt family when focus on work too much: strongly disagree	0.073	-0.229	0.000	14502	1.000
Importance of advancement in a job: not impt at all	-0.027	0.080	0.113	2102	0.000
R's job is useful to society: strongly disagree	0.037	-0.136	0.032	1376	0.598
Work satisfaction: very dissatisfied	0.036	-0.113	0.000	20911	0.879
Importance of job security in a job: not impt at all	0.003	-0.009	0.857	2116	0.000
Views on Homosexuality					
Homosexual sex relations: not wrong at all	0.333	-0.933	0.000	13695	0.992
Homosexuals should have right to marry: strongly disagree	-0.288	0.945	0.000	5326	0.992
Sexuality					
Sex before marriage: not wrong at all	0.661	-1.924	0.000	27296	0.962
Sex with person other than spouse: not wrong at all	0.194	-0.550	0.000	14143	0.962
People should live together before marriage: strongly disagree	-0.423	1.176	0.000	1646	0.962
Living together as an acceptable option: strongly disagree	-0.426	1.331	0.000	2873	0.962
Punishment for downloading porn at office: life in prison	-0.116	0.303	0.000	819	0.962
Sex education in public schools: oppose	-0.211	0.624	0.000	26740	0.992
Birth control to teenagers 14-16 (form 2): strongly disagree	-0.229	0.747	0.000	647	0.992
Materials lead to breakdown in morals: no*	0.462	-0.328	0.000	3831	0.992

Trust					
Can people be trusted: can't be too careful	-0.024	0.071	0.000	13904	1.000
Would trust my family: not at all	0.042	-0.117	0.103	869	0.000
Other ppl will take advantage of r if not careful: strongly disagree	0.002	-0.005	0.949	728	0.038
Must be corrupt to get to top in america: strongly disagree	-0.069	0.204	0.012	759	0.421
Afraid to walk at night in neighborhood: no*	0.651	-0.080	0.000	14182	0.879
How safe interviewer thinks neighborhood is: very unsafe	0.000	0.002	0.976	1819	0.113
Abortion/Euthanasia/Suicide					
Allow incurable patients to die: no*	0.194	0.333	0.000	25666	0.962
Abortion if woman wants for any reason: no*	0.477	0.338	0.000	13780	0.992
Suicide if incurable disease: no*	0.287	0.378	0.000	26361	0.992
Suicide if bankrupt: no*	0.886	0.073	0.000	26929	0.992
Suicide if dishonored family: no*	0.886	0.073	0.000	26859	0.992
Suicide if tired of living: no*	0.793	0.130	0.000	26623	0.992
Aid/Altruism					
Gov. should assist low-income college student: defin should not be	-0.050	0.168	0.000	2826	0.962
Gov. should provide housing to poor: defin should not be	-0.018	0.060	0.188	2793	0.000
Govts resp provide childcare: definitely should not be	-0.079	0.226	0.013	682	0.879
Govts resp: provide for the unemployed: defin should not be	-0.020	0.061	0.098	4194	0.318
Experience connection to all of life: never or almost never	0.105	-0.287	0.000	829	0.879
I am a citizen of the world: disagree strongly	-0.013	0.047	0.613	783	0.000
R have tender feeling for people less fortunate: describes very well	-0.091	0.248	0.000	1735	0.598
R does not feel very sorry for people having pro: describes very well	0.069	-0.187	0.001	1734	0.705
R feels protective towards people taken advantage: describes very well	-0.095	0.259	0.000	1737	0.705
Others misfortunes do not disturb r: describes very well	0.080	-0.218	0.000	1735	0.705
R does not feel pity for someone treated unfair: describes very well	0.043	-0.117	0.039	1728	0.598
Govt should redistribute wealth: disagree strongly	-0.016	0.045	0.459	1396	0.000
Govts resp: reduce income differences: defin should not be	-0.019	0.060	0.074	4858	0.962
Should take care of oneself and ones family first: strongly disagree	-0.042	0.118	0.170	734	0.000
Concerned about environment: very concerned	0.047	-0.159	0.018	1372	0.788
Accept cut in living stnds to help envir?: not at all willing	-0.057	0.168	0.000	3814	0.992
Pay higher taxes to help envir?: not at all willing	-0.070	0.211	0.000	3813	0.992
Should better off ppl help less well-off friend: strongly disagree	0.070	-0.198	0.027	718	0.879
People should help less fortunate others: strongly disagree	0.043	-0.135	0.003	3130	0.598
Take care of yourself first before others: strongly disagree	-0.049	0.137	0.009	1963	0.598
People need not overly worry about others: strongly disagree	-0.047	0.145	0.001	3124	0.421
R is a selfish person: not a good description at all	0.016	-0.045	0.646	722	0.083
Family/Morality					
Spouses pool some/all the money together: yes*	0.631	-0.007	0.828	1157	0.319
Everyone benefit from traditional family: no*	0.386	-0.165	0.000	803	0.992
Divorce laws: more difficult	-0.190	0.551	0.000	25984	0.992
Divorce as best solution to marital problems: strongly disagree	-0.129	0.423	0.000	2099	0.879
Should feuding parents stay together for kids: strongly disagree	0.191	-0.533	0.000	856	0.992
How religious is r: extreme non-rel	0.232	-0.686	0.000	2215	0.962
How important women biologically better-suited: not at all important	0.139	-0.399	0.000	936	1.000
How important women are taught from childhood: not at all important	0.108	-0.309	0.000	940	1.000
How important men have more freedom: not at all important	-0.028	0.083	0.278	908	0.000
How important men work harder explain: not at all important	0.010	-0.029	0.712	914	0.579
How important women's family responsibilities: not at all important	0.031	-0.092	0.223	911	0.682
How important give men better paying jobs: not at all important	-0.026	0.075	0.322	907	0.000
Desir qualities of friend: responsible: not at all important	0.056	-0.154	0.020	1024	0.318
Happiness of marriage: not too happy	0.042	-0.108	0.000	13509	0.705
Kidless people lead empty lives: strongly disagree	0.128	-0.352	0.000	1717	1.000

Kids are life's greatest joy: strongly disagree	0.066	-0.201	0.000	2970	0.879
Those wanting kids should get married: strongly disagree	0.212	-0.647	0.000	2987	0.992
Bad marriage better than none at all: strongly disagree	0.083	-0.227	0.000	1761	1.000
What is ideal number of kids for family: seven or more	-0.099	0.309	0.000	2823	0.962
To obey: least important	0.187	-0.563	0.000	11695	0.992
To think for ones self: least important	-0.119	0.358	0.000	11695	1.000
To work hard: least important	-0.060	0.182	0.000	11695	0.992
To help others: least important	-0.004	0.013	0.548	11698	0.402
Should chldrn be obedient or think for selves: to think for themselves	0.176	-0.491	0.000	2551	0.992
R agrees immoral person corrupts society: disagree strongly	0.121	-0.367	0.000	5400	0.992
Who makes decision about how to bring up children: mostly my spouse	-0.032	0.097	0.276	838	0.579
Who does household cleaning: always my spouse	-0.023	0.072	0.489	629	0.571
Violence/Guns					
Favor or oppose gun permits: oppose*	0.216	0.022	0.008	14066	1.000
Should gun control law be stricter after 911: should be less strict	-0.001	0.004	0.962	812	0.000
Should background check be required for private gun sale: strongly oppose	0.007	-0.019	0.811	856	0.000
Should carrying a firearm drinking alcohol be illegal: oppose*	0.095	-0.021	0.354	861	0.000
Ever approve of man punching adult male: no*	0.319	0.069	0.000	3799	0.992
Stranger had broken into mans house: no*	0.115	0.039	0.002	3945	0.788
Stranger was beating up a woman: no*	0.137	0.021	0.109	3887	0.644
Drunk bumped into man & wife: no*	0.933	-0.029	0.003	3934	1.000
Does r hunt: yes*	0.168	-0.019	0.006	14245	0.318
Does r's spouse hunt: yes*	0.075	0.035	0.000	14245	0.705
Behavior					
R's occupational prestige score (2010)	0.030	-0.088	0.000	25704	1.000
R's age when 1st child born*	24.252	-0.795	0.000	12681	0.992
Age when first married*	22.295	-0.235	0.035	8105	0.318
Boycotted products for pol reasons: have not done it and would never do it	-0.076	0.325	0.000	797	0.962
How successful balancing work & family: completely successful	-0.004	0.013	0.889	648	0.000
Who in household prepares the meals: always my spouse	-0.043	0.139	0.164	655	0.571
Ever been divorced or separated: no*	0.746	0.077	0.000	16053	0.962
Ever drink too much?: no*	0.586	0.183	0.000	3787	0.962
Hubby or wife earns more dollars: i have no income	0.057	-0.187	0.047	665	0.992
Has r ever been divorced: no*	0.652	0.161	0.000	1501	0.788
Ever have sex paid for or being paid since 18: no*	0.920	0.023	0.000	16628	0.598
Have sex other than spouse while married: no*	0.809	0.071	0.000	12355	0.962
How successful in family life: completely successful	-0.057	0.167	0.019	939	0.879
How often fam life interfere job: never	0.001	-0.002	0.965	3258	0.454
How often difficult to conc at work because family resp: never	-0.005	0.021	0.829	809	0.000
How often pay attention to women issues: never	-0.111	0.319	0.000	945	1.000
Vote for woman president: no*	0.059	0.115	0.000	16703	1.000
Going bankrupt: no*	0.988	0.001	0.932	1366	0.000
Contributed money in arts, culture, etc: no	-0.045	0.144	0.048	804	1.000
R donated blood during the past 12 months: not at all in the past year	0.004	-0.014	0.756	3137	0.000
R has given money to a charity: not at all in the past year	0.092	-0.287	0.000	3135	0.879
R has given food or money to a homeless person: not at all in the past year	0.019	-0.060	0.164	3127	0.000
Contributed money in political org. etc: no*	0.926	-0.021	0.395	802	0.000
Contributed money in religious org: no*	0.596	-0.251	0.000	863	0.879
Does r or spouse hunt: neither	-0.004	0.012	0.535	14245	0.000
Have gun in home: no*	0.609	-0.066	0.000	14065	1.000
R had sex for pay last year: not selected	-0.002	0.012	0.829	2825	0.000
R had sex with casual date last year: not selected	-0.029	0.191	0.001	2821	0.598
Pistol or revolver in home: no*	0.779	-0.030	0.000	14018	0.992

R use pornographic site in past 30 days	0.051	-0.200	0.019	673	0.705
Recycle cans bottles: never	-0.055	0.164	0.000	3799	0.992
Relation to last sex partner: no, no relationship	0.018	-0.059	0.006	12799	0.421
R returned money after getting too much change: not at all in the past year	0.011	-0.034	0.420	3124	0.000
Rifle in home: no*	0.760	-0.041	0.000	14018	1.000
Shotgun in home: no*	0.760	-0.045	0.000	14018	1.000
Spend evening at bar: never	-0.214	0.622	0.000	27238	0.962
Favor spanking to discipline child: strongly disagree	0.110	-0.328	0.000	24127	1.000
I would turn down job offering more pay: strong disagree	0.019	-0.070	0.420	829	0.000
R done volunteer work for a charity: not at all in the past year	0.047	-0.147	0.001	3134	0.598
Prison or jail ever: no*	0.849	0.039	0.118	1077	0.000
Percentage of same gender in occupation*	0.678	0.036	0.000	17480	0.992
Group Affiliations					
Number of strong conservative r is acquainted with	-0.132	0.364	0.002	371	0.598
Number of strong liberal r is acquainted with	0.093	-0.263	0.045	366	0.962
How often r attends religious services: more thn once wk	-0.298	0.867	0.000	27053	0.962
Attended a political meeting or rally: have not done it and would never do it	-0.025	0.105	0.248	818	0.083
Rank in society of r: bottom	-0.024	0.073	0.393	715	0.190
R's self ranking of social position: bottom	-0.011	0.040	0.199	6631	0.204
Subjective class identification: upper class	0.018	-0.054	0.000	27158	1.000
Think yourself as a feminist?: no, not a feminist	-0.050	0.145	0.047	904	0.992
Mostly men or women at the workplace: all men	-0.006	0.020	0.808	826	0.402
R belongs to a political party: never belonged	0.033	-0.142	0.132	806	0.000
Membership in church group: no	0.232	-0.602	0.000	5448	0.962
Number of memberships	-0.020	0.052	0.079	5480	0.421
Political party affiliation: strong republican	-0.078	0.224	0.000	22657	0.992
Demographics					
Age of respondent*	41.796	8.404	0.000	27213	1.000
Not married: no*	0.460	0.331	0.000	13791	0.992
Ever married*	0.720	0.136	0.000	27288	0.992
Separated or divorced*	0.220	-0.090	0.000	18391	0.962
Labor force status: working fulltime (ages 25-55)*	0.692	-0.056	0.000	16142	1.000
Labor force status: working parttime (ages 25-55)*	0.104	0.010	0.105	16142	0.000
Labor force status: keeping house (ages 25-55)*	0.109	0.061	0.000	16142	1.000
Family income in constant dollars	0.074	-0.222	0.000	24540	1.000
Respondent income in constant dollars	0.036	-0.124	0.000	17074	0.962
R's highest degree: graduate	0.087	-0.254	0.000	27252	1.000
Highest year of school completed*	13.504	-1.009	0.000	27243	1.000
Spouse with junior college education or higher: yes*	0.357	-0.098	0.000	13488	1.000
R's socioeconomic index of 1st occupation (1980)	0.078	-0.209	0.004	877	0.962
Participated in a charitable org past 12 months: do not belong	0.045	-0.127	0.136	736	0.000
Participated in a neighbor association past 12 months: do not belong	-0.011	0.031	0.699	737	0.000
Number of persons in household*	2.925	0.036	0.126	27295	0.000
Year of first marriage*	1966.263	-10.318	0.000	8082	1.000
Think of self as liberal or conservative: extrmly conservative	-0.178	0.526	0.000	26293	0.992
R's socioeconomic index (2010)	0.050	-0.149	0.000	25704	1.000
Respondents sex: female*	0.515	0.088	0.000	27296	0.598

Note: The table presents the differences in averages between two clusters generated using data from GSS through a k-means cluster procedure using the following questions: 1) Sex before marriage, 2) Better for man to work, woman tend home. After the colon (:) in the variable description, the response that corresponds to the largest numeric value of the question is listed. One thousand iterations with different seeds were computed, and the iteration that maximized the distance between cluster centers is presented in columns 1 and 2. The p-value in column 3 represents the significance level of the difference between clusters using heteroskedasticity robust standard errors. Column 4 gives the number of observations. Column 5 reports the percent of iterations where the difference was significant at the 10% level.

Table A.4: Version of Table 1 with Controls for Income, Age, Gender, Education, and Year

Variable	(1) Modern Type Average	(2) Difference Traditional Type
Sex before marriage: always wrong	-0.798	1.920***
Better for man to work, woman tend home: strongly agree	0.294	0.660***
Being housewife as fulfilling as paid work: strongly agree	0.019	0.252***
Bad marriage better than none at all: strongly agree	0.316	0.124*
Homosexual sex relations: always wrong	0.407	0.854***
Can people be trusted: can't be too careful	1.601	0.028
Should chldrn be obedient or think for selves: to be obedient	1.106	0.427***
Favor spanking to discipline child: strongly agree	0.678	0.329***
Ever married*	0.172	0.043***
R's age when 1st child born*	15.09	-0.357***
Percentage of same gender in occupation*	0.813	0.016***
Have gun in home: no*	0.547	-0.053***

Note: The table presents the differences in averages between two clusters controlling for income, age, gender, education, and year. The clusters were generated using data from GSS through a k-means cluster procedure using the following questions: 1) Sex before marriage, 2) Better for man to work, woman tend home. After the colon (:) in the variable description, the response that corresponds to the largest numeric value of the question is listed. All variables without stars (*) have been standardized. The stars in column 2, represent the significance level at which the difference across clusters is statistically significant using heteroskedasticity robust standard errors: *** for 0.01, ** for 0.05, and * for 0.1.

Appendix B

Proof of Proposition 3.

We begin with case where, absent gender norms, the family's optimum wage is interior (i.e. $w^* < w_{\max}$). Now suppose the family encounters norm Δ_{t-1} (without loss $\Delta_{t-1} \geq 0$) and chooses w_f, w_m for period t. Provided Δ_{t-1} is small, w_f, w_m, both of which are functions of Δ_{t-1}, remain interior and satisfy the following first-order conditions (which are sufficient because the family's objective is strictly concave):

$$u\left(\overline{w}+\overline{w}_0\right)+\frac{1}{2}F'\left(w_f\right)=\lambda\Delta_{t-1} \text{ and } u'\left(\overline{w}+\overline{w}_0\right)+\frac{1}{2}F'\left(w_m\right)=-\lambda\Delta_{t-1},$$

where $\overline{w}=\left(w_f+w_m\right)/2$.

Now apply the Implicit Function Theorem and rearrange terms to obtain

$$\begin{pmatrix} \frac{dw_f(\Delta_{t-1})}{d\Delta_{t-1}} \\ \frac{dw_m(\Delta_{t-1})}{d\Delta_{t-1}} \end{pmatrix} = A^{-1}\begin{pmatrix} 2\lambda \\ -2\lambda \end{pmatrix},$$

where

$$A=\begin{pmatrix} u''\left(\overline{w}+\overline{w}_0\right)+F''\left(w_f\right) & u''\left(\overline{w}+\overline{w}_0\right) \\ u''\left(\overline{w}+\overline{w}_0\right) & u''\left(\overline{w}+\overline{w}_0\right)+F''\left(w_f\right) \end{pmatrix}.$$

Because $u'', F'' < 0$ this matrix has a non-zero determinant, and hence the derivatives $\frac{dw_f}{d\Delta_{t-1}}, \frac{dw_m}{d\Delta_{t-1}}$ are well defined. Moreover, when $\Delta_{t-1}=0$ we have $w_f, w_m, \overline{w}=w^*$ and hence

$$\begin{pmatrix} \frac{dw_f(\Delta_{t-1})}{d\Delta_{t-1}} \\ \frac{dw_m(\Delta_{t-1})}{d\Delta_{t-1}} \end{pmatrix} = \begin{pmatrix} 2\lambda/F''\left(w^*\right) \\ -2\lambda/F''\left(w^*\right) \end{pmatrix}.$$

Since u'' and F'' are continuous, it follows that whenever Δ_{t-1} is small, $-\frac{dw_f(\Delta_{t-1})}{d\Delta_{t-1}}$ and $\frac{dw_m(\Delta_{t-1})}{d\Delta_{t-1}}$ are each close to $-2\lambda/F''\left(w^*\right)$, which by assumption is strictly smaller than $1/2$. Therefore, there exists a constant $\delta > 0$ such that for all small Δ_{t-1},

$$\frac{d\Delta_t(\Delta_{t-1})}{d\Delta_{t-1}} := \frac{d\left(w_m(\Delta_{t-1})-w_f(\Delta_{t-1})\right)}{d\Delta_{t-1}} < 1-\delta.$$

Since $\Delta_t = \int_0^{\Delta_{t-1}} \Delta_t'(x)dx$, it follows that whenever Δ_{t-1} is strictly positive and small, $\Delta_t < \Delta_{t-1}\left(1-\delta\right)$. As a result, for all small $\Delta_t \geq 0$ we have $BR^{\infty}\left(\Delta_t\right)=0$, as desired.

Finally, the case where $w^* = w_{\max}$ is very similar. The only difference is that in this case at least one of the wages w_f, w_m is always equal to w^*.

References

Akerlof, George A and Rachel E Kranton, "Economics and Identity," *The Quarterly Journal of Economics*, 2000, *115* (3), 715–753.

_ **and Robert J Shiller**, *Phishing for phools: The economics of manipulation and deception*, Princeton University Press, 2015.

Akerlof, Robert, "Value Formation: The Role of Esteem," *Games and Economic Behavior*, 2017, *102*, 1–19.

Alesina, Alberto, Paola Giuliano, and Nathan Nunn, "On the origins of gender roles: Women and the plough," *The Quarterly Journal of Economics*, 2013, *128* (2), 469–530.

Aumann, Robert J and Micha Perles, "A variational problem arising in economics," *Journal of Mathematical Analysis and Applications*, 1965, *11*, 488–503.

Bailey, Beth L, *From front porch to back seat: Courtship in twentieth-century America*, Johns Hopkins University Press, 1988.

Bandiera, Oriana, Stephen Hansen, Andrea Prat, and Raffaella Sadun, "CEO Behavior and Firm Performance," *Journal of Political Economy, Forthcoming*, 2019.

Banfield, Edward C, "The moral basis of a backward society.," 1967.

Becker, Anke, "On the Economic Origins of Constraints on Women's Sexuality," *Working Paper*, 2018.

Becker, Gary S, *A Treatise on the Family*, Harvard University Press, 1981.

Bénabou, Roland, Armin Falk, and Jean Tirole, "Narratives, imperatives, and moral reasoning," *NBER Working Paper No. 24798*, 2018.

Bertrand, Marianne, Emir Kamenica, and Jessica Pan, "Gender identity and relative income within households," *The Quarterly Journal of Economics*, 2015, *130* (2), 571–614.

Binder, Ariel J and John Bound, "The Declining Labor Market Prospects of Less-Educated Men," *Journal of Economic Perspectives*, 2019, *33* (2), 163–90.

Boserup, Ester, "The role of women in economic development," *New York: St. Martin's*, 1970.

Cahn, Naomi and June Carbone, *Red families v. blue families: Legal polarization and the creation of culture*, Oxford University Press, 2010.

Carvalho, Jean-Paul, "Veiling," *The Quarterly Journal of Economics*, 2012, *128* (1), 337–370.

Cherlin, Andrew J, *Labor's Love Lost: The Rise and Fall of the Working-Class Family in America*, Russell Sage Foundation, 2014.

_ , *Public and Private Families: A Introduction, Eighth Edition*, McGraw-Hill, 2017.

Douglas, Mary, *Purity and danger: An analysis of concepts of pollution and taboo*, Routledge, 1966.

Draca, Mirko and Carlo Schwarz, "How Polarized are Citizens? Measuring Ideology from the Ground-Up," *Working Paper*, 2018.

Edin, Kathryn and Timothy J Nelson, *Doing the best I can: Fatherhood in the inner city*, Univ of California Press, 2013.

Eliaz, Kfir and Rani Spiegler, "A Model of Competing Narratives," *CEPR Discussion Paper No. DP13319*, 2018.

Enke, Benjamin, "Kinship, cooperation, and the evolution of moral systems," *The Quarterly Journal of Economics*, 2019, *134* (2), 953–1019.

Fernandez, Raquel and Alessandra Fogli, "Culture: An empirical investigation of beliefs, work, and fertility," *American Economic Journal: Macroeconomics*, 2009, *1* (1), 146–77.

Frank, Robert, "The Workaholic Rich," *Wall Street Journal*, March 21, 2007.

Friedan, Betty, *The Feminine Mystique*, W W Norton & Company, 1963.

Giuliano, Paola, "Gender: An historical perspective," 2017.

Goldin, Claudia, *Understanding the Gender Gap: An Economic History of American women*, New York: Oxford University Press, 1990.

_ , "The U-shaped female labor force function in economic development and economic history," *NBER Working Paper No. 4707*, 1994.

Haidt, Jonathan, *The righteous mind: Why good people are divided by politics and religion*, Vintage, 2012.

Hosmer, William, *The Young Lady's Book: Or, Principles of Female Education*, Miller, Orton & Mulligan, 1854.

Jayachandran, Seema, "The Roots of Gender Inequality in Developing Countries," *Annual Review of Economics*, 2015, *7*, 63–88.

Kristeva, Julia, *Powers of Horror*, Columbia University Press, 1980.

Lakoff, George, *Moral politics: What conservatives know that liberals don't*, Chicago, IL: University of Chicago Press, 1996.

_ , *The political mind: why you can't understand 21st-century politics with an 18th-century brain*, Penguin, 2008.

Manning, Wendy D and Bart Stykes, "Twenty-five years of change in cohabitation in the US, 1987-2013," *Family Profiles Series FP-15-01, National Center for Family and Marriage Research, Bowling Green State University*, 2015.

Matouschek, Niko and Imran Rasul, "The economics of the marriage contract: Theories and evidence," *The Journal of Law and Economics*, 2008, *51* (1), 59–110.

McGrattan, Ellen R and Richard Rogerson, "Changes in the Distribution of Family Hours Worked Since 1950," in "Frontiers of Family Economics," Emerald Group Publishing Limited, 2008, pp. 115–138.

McLanahan, Sara, "Diverging destinies: How children are faring under the second demographic transition," *Demography*, 2004, *41* (4), 607–627.

Michalopoulos, Stelios and Melanie Meng Xue, "Folklore," *CEPR Discussion Paper No. DP13425*, 2019.

Mitchell, Sally, *The Fallen Angel: Chastity, Class, and Women's Reading, 1835-1880*, Popular Press, 1981.

Modell, John, *Into one's own: From youth to adulthood in the United States, 1920-1975*, University of California Press, 1989.

Morson, Gary Saul and Morton Schapiro, *Cents and Sensibility: What Economics Can Learn from the Humanities*, Princeton University Press, 2017.

Mukand, Sharun and Dani Rodrik, "Political Economy of Ideas," *Working Paper*, 2018.

Murray-Close, Marta and Misty L Heggeness, "Manning up and womaning down: How husbands and wives report their earnings when she earns more," *US Census Bureau Social, Economic, and Housing Statistics Division Working Paper*, 2018, (2018-20).

Shiller, Robert J, "Narrative economics," *American Economic Review*, 2017, *107* (4), 967–1004.

Starbuck, William Gayer, *A Woman Against the World* 1864.

Stiehm, Judith Hicks, "The protected, the protector, the defender," in "Women's Studies International Forum," Vol. 5 Elsevier 1982, pp. 367–376.

Thompson, Derek, "Workism is Making Americans Miserable," *The Atlantic*, 2019, *24*.

Welter, Barbara, "The cult of true womanhood: 1820-1860," *American Quarterly*, 1966, *18* (2), 151–174.

Young, Iris Marion, "The logic of masculinist protection: Reflections on the current security state," *Signs: journal of women in culture and society*, 2003, *29* (1), 1–25.