Familistic Attitudes, Dual Burden and Fertility Intentions in Italy

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1. Introduction

Among the closely watched trends of the late twentieth and early twenty-first centuries has been a pronounced drop in fertility rates throughout much of the developed world. The overall decline of fertility in Europe has been particularly dramatic; as of 2003, 57% of the population lived in countries with a fertility rate of 1.3 or lower (Sobtka 2004).

   Italy presents a particularly interesting case for study, with the world's lowest fertility rate during the 1990s. This country's extreme decline in fertility took many population experts by surprise (Chesnais, 1998) given the dominance of the Catholic Church and the country's strong familial values, where "traditionally the family group has had priority over the individual" (Reher, 1998).

   After the baby-boom reached its peak in 1964, with a Total Fertility Rate (TFR) of 2.7 in Italy, the average number of children per woman consistently decreased. In 1977, fertility fell to replacement level (2.1) for the first time, and by 1993, it had plunged to a critical level of 1.3 children per woman. The TFR reached a record low of 1.18 children per woman in 1995. Although the figures have remained consistently well below replacement levels since, there has been a slow increase in births, to an estimated TFR of 1.35 in 2007

   A number of competing explanations have been given for rapidly falling fertility rates in Italy and other Western (and a number of Asian) countries, ranging from economic theories related to an increased participation of women into the labor force, broader cultural theories such as "the Second Demographic Transition" (SDT), ideas concerning the spread of gender equity values in institutions[1] (i.e. McDonald 2000a, 2000b, Chesnais 1996), to Livi Bacci's (2001) hypothesis of "too much family". A careful reading of this spectrum of work reveals their complementary, rather than competing, nature, as is evident in the common attention paid to the changing role of women in contemporary society.

2. Complementary theories

   Subsequent to the work of Becker (1976, 1981) and other neoclassical economists (Mincer 1963), much research has focused on increased female autonomy, female participation in the labor force, calculations of the direct and indirect costs of childbearing, and transformations in family configuration. Becker (1981) argued, in his theory of *New Home Economics,* that social scientists should consider greater female independence as one of the principal factors in a decreasing desire to marry and have children.

   At the aggregate level of analysis, the relationship between female labor force participation (FLFP) and fertility was negative before the mid-1980s, but became positive afterwards (Dey 2006; Billari and Kohler, 2004; Castles, 2003; Del Boca et al. 2005; Kögel, 2004, Rindfuss *et al.*, 2003). Authors such as Engelhardt et al. (2004), Kögel (2004), and Engelhardt and Prskawetz (2004), on the other hand, argue that this relationship is positive only in cross-country analyses, while it remains negative from a within-country longitudinal perspective. These scholars suggest that the negative correlation between fertility and female employment has only weakened over the years. Similarly, Rindfuss and Brewster (1996), in a review of several studies on this topic, suggest that anything that reduces such role incompatibility may raise levels of fertility.

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[1] In this paper we will refer interchangeably to: "gender equity values", "gender equity attitudes", "gender attitudes" and "gender ideology".

Some demographers have championed a Second Demographic Transition theory to explain below-replacement fertility. In this theoretical framework, increased female labor force participation has been associated with a spread in positive attitudes towards gender equity at the societal level, and more generally, with broader processes of individual emancipation.

Second Demographic Transition theory has been criticized, however, as insufficiently attentive to gender dynamics. Bernhardt (2004: 26) argues that "one of the shortcomings of the SDT theory is a lack of an explicit gender perspective" since "concepts of autonomy and self-realization are not gender-neutral, but have markedly different meanings – and implications – for women and men". She theorizes a SDT transition which occurs in two phases. The first phase is characterized by an asymmetry in role obligations, and partially as a consequence, an increase in divorce and cohabitation. In the second phase of the transition (or Third Demographic Transition) "partnership and parenthood become strong positive options for both men and women, which would imply less fragile male-female relationships and the possibility of increasing fertility levels"[2].

In his alternative approach to explaining very low fertility, McDonald (2000a, 2000b) refers, albeit implicitly, to a two step process as well. He suggests that fertility decline can be explained by inconsistencies between levels of gender equity in 'family-oriented institutions' such as domestic tasks and childcare and in 'individual-oriented institutions' such as education and market employment. The latter change quickly and are characterized by higher levels of gender equity, bringing them into conflict with family-oriented institutions, which tend to change more slowly. Women, unable to find a happy medium between the two, have a propensity to limit fertility and adjust responses to family-oriented demands accordingly.

The recent inversion, mentioned above, from a negative to a positive (or less negative) relationship between female labor force participation and fertility could be interpreted as the beginnings of a second phase in the SDT. In other words, it is possible that couples have begun to modify the division of domestic labor (a hypothesis supported by the work of Bianchi et al. 2006). Such change may also be accompanied by a shift in family policies away from money transfers – where these have existed – to the development of specific services offered to families with children. These elements in turn may foster a more equal division of household tasks (McDonald, 2000a).

3. The Italian case

There exist signs that Italy may have begun the second phase of the SDT, with (low but) increasing FLFP and a (low but) increasing TFR. The percentage of women employed in Italy rose from 26.1% to 46.3% between 1972 and 2006[3]. In the meantime, Italian fertility exceeded the rate of 1.3 children per woman in 2004, 2005, and 2006 (Castiglioni and Dalla Zuanna 2007).

Other demographic behaviors in Italy appear to converge towards European patterns as well: marital dissolutions have almost doubled in the last fifteen years, the proportion of women with at

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[2] Another way to think about the spread of gender equity attitudes is to consider individualization and autonomy as general values of the SDT which have the potential to become universal. Ellis (2007) describes a similar process in the context of the American history "(…) the end of the slavery, the recognition of women as citizens, and the expansion of the franchise to include the poor and propertyless were placed on the political table as inevitable consequences of the principles that the American Revolution claimed to embody".

[3] Rubery (2001) points out that "increasing the proportion of dual-earning couples is an implicit objective of the European employment strategy. One of its goals is that the employment rate of women should reach 60% by the year 2010". The female employment rate for the European Union reached 57.6% in 2006 and in the same year surpassed 50% in a Mediterranean country such as Spain (Eurostat). Certainly, it is expected that Italy's FLFP percentage will continue to rise.

least one experience of cohabitation has increased, and the number of marriages preceded by cohabitation has rapidly risen, as has the number of births outside of marriage (Castiglioni and Dalla Zuanna 2007).

On the other hand, Italy remains quite different from other European countries in some respects. According to Castiglioni and Dalla Zuanna (2007) "even in the regions where many couples cohabit, the very late age at leaving the parental home has meant that cohabitation is practiced more by young adults (25-34 and older) than by youth (15-24 years of age)". Along similar lines, Livi Bacci (2001) argues that Italy is characterized by "too much family", a phenomenon in which a delay in the departure from the family of origin sets back other steps in the transition to adulthood, including fertility choices. A number of other scholars associate low fertility with the tendency of Italians to leave the home, marry, and have children later in life, combined with the desire to invest more in each child (Rosina 2007; Kertzer et al. forthcoming; Krause 2005, Dalla Zuanna 2004; Buzzi et al. 2002)[4]. Consistent with these findings, Micheli (2004) points out that the SDT has thus far taken place according to territorial cleavages that have long existed in Europe. Echoing Van de Kaa (1987), Micheli suggests that scholars should not expect to see convergence among European countries in the short term.

Livi Bacci (2001) argues that the behavior of Italian families can be understood as the reaction to important changes that have occurred over the last few decades. Most importantly, in this view, the rapid increase in FLFP has created disparity in the organization of paid labor and school hours, increasing the need for work flexibility, efficient urban mobility, and social investment in leisure time and in the education of children and youth.[5] It is clear that women are strongly penalized in this process: "lagging societal adjustment has increased the claim on parent's – and particularly on women's – time and energy. Postponement and reduction of childbearing can be seen, therefore, as an outcome of this set of forces" (Livi Bacci, 2001, p.147). Castiglioni and Dalla Zuanna (2007) also highlight the heavy burden of woman's workloads, due in large part to "unsatisfactory family policies, a feeble at best market for private childcare and low levels of paternal participation in domestic and childcare activities" (see also Mencarini, 2007; Istat, 2005, part 4.3; Livi Bacci, 2004; Saraceno, 2003, 1994). The result is that Italian women still do much more childcare and housework compared to women in other European countries (de Laat and Sevilla-Sanz 2003).

This paper addresses several questions related to the issues thus far presented: How do gender attitudes influence couples' strategies in terms of the division of work? How satisfied are women with regard to such divisions? How do factors such as gender attitudes and the division of labor influence the intention to have children? In order to provide answers to these questions, we situate gender attitudes within the broader processes associated with the SDT.

In studying the causal links between values, behaviors, and fertility intentions, we also take into account intermediate and control variables, such as women's education, cohort, external work, proximity to their families, and the presence of young children in the family.

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[4] Some other authors, however, disagree with this position relating, at the macro level, low fertility with an increase in mean age at childbirth. Toulemon (2004), for example, shows that in France, the increase in mean age at childbirth since the 1970s has not been associated with a decline in the probability of moving on to a next birth. In fact, parity progression ratios have remained very stable over the last three decades, at all parities. In an international comparison, Toulemon shows that there is little association between increasing mean age at first birth and lower fertility. The European countries which have had the largest increases in mean age at first birth are not the same as those which have experienced the largest declines in total fertility.
[5]Important legislative changes have also deeply affected Italian culture and the relationship between couples: in 1970 divorce became legal, in 1971 contraceptive advertising became permissible, and in 1978 abortion became legal.

The larger question of fertility rates in Italy is further complicated by sharp regional variation, especially evident in the cultural and economic differences in the North and South (Bernardi and Gabrielli 2007; Bernardi and Gabrielli 2006; Dalla Zuanna, 2005; Barbagli, Castiglioni, Dalla Zuanna, 2003). Regional and cohort variation is examined in order to gain further insight into the effect of attitudes on couples' role-set outcomes and their expressed fertility intentions. In light of these objectives, the 2003 national level survey, *Famiglie e Soggetti Sociali* (FSS) provides a valuable dataset with which to work, given its national coverage of demographic events as well as the presence of attitudinal variables – not available in the previous version of the FSS. We begin by introducing the Italian 2003 FSS Survey and our statistical methods of analysis. We then introduce the conceptual framework of our work, with a focus on the principal theoretical arguments related to the SDT, gender ideology, and Italian women's workload. Finally, we present the results of our investigation on the relationship between attitudes, couple's role-set, and fertility through use of a causal approach.

4. Data and methods

In order to investigate the questions posed above, we employed data from the 2003 national level survey: *Famiglia, soggetti sociali, e condizioni dell'infanzia* (Family, social subjects, and childhood conditions - Istat). We used a sub-sample of 4,825 Italian couples, who were either married or cohabiting; in which the woman was less than 45 years of age. The survey contains detailed retrospective information on various aspects of the life course, including reproductive history. Among these couples, 17% had no children, about 30% had one child, and almost 53% had 2 or more children (appendix 1). Information concerning women's fertility intentions within the next 3 years was also available: 30.3 % of women reported wanting, or probably wanting, to have a child within this time period (appendix 1).

Data on education, employment, and time-use in domestic and paid labor were also retrospectively collected. In addition to the objective workload, we were able to measure the subjective burden through a question concerning the woman's level of satisfaction with the division of domestic labor: 78.2% of women in our sub-sample felt satisfied (appendix 1).

Respondents were also asked about the residential proximity of parents and children (appendix 1). Couples living less than 50 kilometers from the woman's mother made up 75.2% of the total subsample (of which 9% cohabitated or lived in the same building). In addition, 73.2% of couples lived less than 50 kilometers from the man's mother (of which 12.6% cohabitated or lived in the same building).

Several items included in the questionnaire allowed us measure partners' life-styles, such as church attendance. Feelings of trust in other people were also measured. Moreover, we were able to gauge respondents' attitudes toward marriage through responses to affirmations such as: "Marriage is an outdated institution", "A couple can live together even without plans to get married", "A woman can have a child alone", and "It is right that an unhappy couple divorce even if there are children". Attitudes towards the transition to adulthood were evaluated through responses to statements such as: "It would be better for a child to leave home at 18 years of age", while those towards female specific roles[6] could be explored through responses to the following: "It is natural that a daughter cares for elderly parents", "Housework can be as fulfilling for a woman as paid labor", and "In case of divorce, it is better for the child to stay with the mother".

We employed several statistical methods in our work, including both data reduction techniques and regression models. We illustrated our analysis with simulations in order to better explain how predicted behavior (or attitudes) changes along key dimensions of covariates.

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[6] According to Yinger (1965) a "role" refers to rights, duties, and patterns of behavior that are normatively approved.

Several *FSS* questions tapped attitudes toward family formation, gender roles, and the like. Since these responses are attitudinal, are likely to be interrelated, and may tap different features of Second Demographic Transition (SDT) theory, we elected to perform a factor analysis on these questions. More specifically, we subjected 8 key questions (see above and below) to a principle components factor analysis. We did not impose an *a priori* decision regarding the number of factors to extract. We did, however, consciously select principle components analysis, imposing orthogonality on the two factors. Thus the second factor to emerge explains some portion of the variance still remaining after extraction of the first factor, and it is uncorrelated with that first factor. We found that two factors were sufficient to capture overall variation, sort out the attitudes into two identifiable dimensions, and help position clusters of responses along these dimensions. Direct interpretation of our findings appears in our results section below. We compute a predicted score on each factor (using STATA software) for each case. Thus, each woman is assigned (1) a *gender equality* factor score and (2) a *familistic attitudes* score. These factors are labeled *a posteriori*; we interpret them as aligning with different features of the SDT. Each of these factors then becomes available as a continuous covariate (distributed as $\sim N(0,1)$) in any subsequent analysis.

In order to capture the gender gap in domestic and paid labor hours in Italy, we calculate a *partners' work gap* indicator, drawing on each partners' reported data on hours worked (H), reflecting the total effort (household plus external work) contributed by the woman (f) and the man (m). The index in any given household i is defined as: $WG_i = \dfrac{H_{i,f} - H_{i,m}}{H_{i,f} + H_{i,m}}$, for $H_{i,f}$ and $H_{i,m}$ the woman and man's work time (household plus external work). The index varies between -1 and 1, and assumes positive values when the woman's total hours exceed the man's total hours.

We incorporate these measures – the gender equality score factor score, the familistic attitudes score, and the partners' work gap indicator – into several regression equations.

Our regression analysis predicts response to the survey question on intention to have a child in the next three years. This is indicated on a four item scale: (1) definitely plan to have a child (2) probably plan to have a child (3) unlikely have a child (4) definitely plan not to have a child. We model this outcome with ordinal logit. As such, we interpret the ordered frequency distribution as the categorical realization of a continuous underlying attitude. The ordinal logit procedure offers a significant advantage in parsimony, estimating a singe vector of covariates predicting the associated continuous distribution. These coefficients estimate the relative impact of a unit change of each covariate on the (presumed) underlying distribution. The procedure also generates a set of cut-points, associated with movement across the observable threshold among the several survey response categories (the number of "cut-points" is one less than the number of survey categories). Thus, the cut-points sort the responses into bins that indicate relative frequency. Note that this strategy differs from that of estimating covariates to predict all discrete categories themselves, such as with a multinomial logit model. The ordinal logit approach is more parsimonious with respect to estimated coefficients. It is less confusing to interpret.

Our view is that this approach is particularly appropriate here. It is unlikely that women (or couples) strongly categorize their fertility intentions; rather a continuous underlying intention or propensity is more likely. The ordinal estimation technique is designed to recover the set of covariates that best predict movement along that underlying dimension, realized into the categories of the survey response. Since we model the outcome this way, we can also make use of the underlying response in simulation or prediction. As an aid to the interpretation of our results, we provide some predicted values under various scenarios of personal characteristics. In these cases (see below), the calculation of *Xb* produces predicted values of the underlying propensity. This value on a continuous scale will change as we alter the characteristics of individuals.

We cannot claim to identify causation in our modeling approach; however, we build our statistical models in such as way as to give as much insight into the role of predictors,

predetermined and contemporaneous, as possible. According to Wunsch et al. (2006: p.3) "[a]fter initially examining the relationship between the exposure of interest and the outcome (giving a «crude» or «unadjusted» result), variables that are known confounders are then added to the model to provide an effect that is «adjusted» for these known confounders". We estimated 13 nested models, each adding a new potential confounder (appendix 3). A reminder is in order in that a "statistically significant association between two variables does not necessarily mean that one caused the other". However, certain criteria help us to asses whether causality exists. These are: socio-demographic plausibility in the relationship, consistency with other investigations, and evidence of an appropriate time sequence (Wunsch et al., 2006: p, 6).

5. *Theoretical approach*

One way to explore the links between lifestyle and couple's role set, and to determine the effect of these factors on fertility, is through a schematic diagram. In figure 1 we show that *lifestyle and attitudes* can influence the ways that couples organize family work. In turn, a *heavy workload* carried by the woman can negatively influence the couple's *fertility*. Moreover, lifestyle and attitudes may directly influence fertility, regardless of the mediating effect of the woman's workload. As previously stated, we interpret the couples' lifestyle through observation of behaviors such as church attendance, attitudes toward marriage, the transition to adulthood, gender equity, and feelings of trust toward other people. The woman's workload is established by the number of hours of domestic and paid labor and through the measurement of the partners' total work gap.

Our framework also incorporates intermediate variables and control variables, such as the woman's education, her cohort, her external work, their proximity to their families, and the presence of young children. The control variables employed can affect the intention to have a child, the couple's role-set, and the attitudinal variables, thus causing spuriousness in statistical relations. For example, the woman's level of education can affect both values and behaviors; thus controlling for education allows for measurement of the net effect of values on behavior.

The intermediate variables can mediate the effect of attitudes on the couple's role-set and fertility intentions. For example, gender attitudes can indirectly affect fertility intentions through the woman's work status; thus controlling for the woman's working status allows us to determine the direct effect of gender attitudes on fertility intentions.

Given the dramatic geographical differences which characterize Italy, regional and cohort variation is examined in order to gain further insight into the effect of attitudes on the couple's role-set and the expressed intention of fertility. Such an examination partially accounts for the structural and societal conditions which Livi Bacci (2001) and Castiglioni and Dalla Zuanna (2007) identify as influencing woman's work load and fertility.

Two strategies are necessary in order to apply a causal perspective. First, our dependent variable is the woman's *fertility intentions* ("Do you intend to have a child in the next three years?") instead of actual fertility. The choice of explaining future expectations of fertility behavior with actual attitudes and behavior allows us to respect the principles of causation while using the FSS cross-sectional data. Second, the causal link between woman's attitudes and couple's behavior in terms of division of labor needs to be assumed, as we have cross-sectional data instead of panel data on attitudes and behaviors. Our hypothesis is that couples' values and attitudes affect their behavior; however the causal direction could also be reversed, such that the organization of housework could affect beliefs about gender roles (on the bidirectional relation of attitudes and behavior see Thornton et al. 1992).

Figure 1 – The relationship between attitudes and fertility intentions, and the mediating effect of the couple's role set
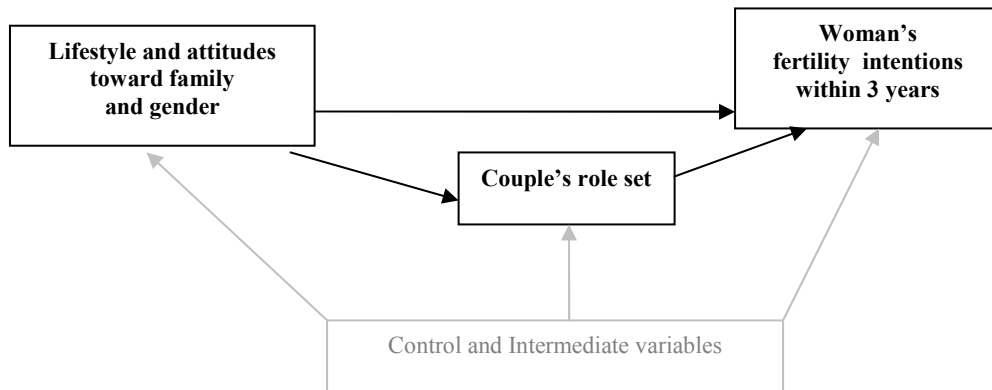
6. Operationalizing social change as defined by the Second Demographic Transition framework

In order to operationalize the lifestyle and attitudinal dimensions mentioned above, we refer to Lesthaeghe's SDT theoretical framework characterized by below-replacement fertility, changes in union formation, changes in the transition to adulthood, and by other concomitant social changes. These can be summarized as: a rise in "higher order" needs linked to autonomy and self-actualization, the weakening of social cohesion, a second secularization wave, refusal of authority, rejection of permanent choice, sexual revolution, and increasing symmetry in gender roles (Lesthaeghe, *Encyclopedia of Sociology*, see first column of table 1).

Through use of the FSS data, we endeavor to translate these societal aspects into individual-level measures of behavior and attitudes (see respectively the second and third columns in table 1). In order to assess higher order needs (see (A) in table 1), such as individual autonomy and self-actualization, we explore attitudes towards statements such as "A woman can have a child alone" and "It would be better for a child to leave home at 18 years of age". We attempt to capture the weakening of social cohesion (B) by considering answers to the question, "Do you feel that you can trust others or that one must be very careful?" Secularization (C) is measured by the frequency of church attendance.

The rising symmetry in gender roles which characterizes the SDT process is measured here in terms of both behaviors and attitudes (D). Attitudes towards domestic and care-related tasks are observed in results from the question "Are you satisfied with the division of domestic work?". We also employ information provided by the FSS on domestic work hours and labor hours, available for both the woman and her partner. In addition, in order to ascertain woman's attitudes toward gender norms, we take into account levels of agreement with statements such as: "In case of divorce it is better for the child to stay with the mother", "Housework can be as fulfilling for a woman as paid labor," and "It is natural that a daughter cares for elderly parents."

Tab. 1 –SDT theory's social changes

LESTAEGHE'S SDT THEORY: SOCIETAL BACKGROUND	BEHAVIOR AT THE MICRO LEVEL FROM THE FSS DATA	ATTITUDES AT THE MICRO LEVEL FROM THE FSS DATA
(A) Rise of higher order needs (individual autonomy, self-actualization, flexible life course).		-"A woman can have a child alone" -"It would be better for a child to leave home at 18 years of age" -"It is right that an unhappy couple divorce even if there are children"
(B) Weakening of social cohesion		-Do you feel that you can trust others or that one must be very careful?
(C) Second secularization wave, sexual revolution, refusal of authority	-Frequency of church attendance	- "Marriage is an outdated institution" -"A couple can live together even without plans to get married"
(D) Rising symmetry in gender roles, female economic autonomy	-Woman's participation in the labor market -Hours per week spent doing domestic labor and external work for both the man and the woman	-Are you satisfied with the division of domestic work? -"In case of divorce, it is better for the child to stay with the mother" -"Housework can be as fulfilling for a woman as paid labor" -"It is natural that a daughter cares for elderly parents"

In order to synthesize the SDT variables and thoroughly explore all related dimensions, we use a principal component analysis (PCA). This allows us to examine attitudes linked to the prescriptive normative statements from the third column of table 1. The analysis resulted in two different factors. The first, F1, is correlated predominantly with *anti-familistic attitudes* concerning marriage, cohabitation, single parenthood, adult children's autonomy, and the possibility of divorce with children. The second, F2, is primarily correlated with *gender attitudes,* concerning the attribution of children to a divorced mother, care of older parents by a daughter, and the extent to which being a housewife is considered fulfilling (fig. 2).

We carried out a PCA using orthogonal components, i.e. assuming that the two factors are independent. In other words, the gender attitudes index "captures" dimensions of gender relations which are uncorrelated to anti-familistic attitudes. Note that even when other PCA methods which do not require components to be independent are estimated, we observe no correlation between the two factors. Hence, our first result is that gender equity and familism appear to be two unconnected dimensions in the SDT process.

PCA was applied to both women and men, resulting in strongly correlated factors for the two sexes. With regard to our statistical modeling (shown over the next few paragraphs) we therefore decided to use a PCA for women's answers only (see appendix 2).

Fig. 2 – Principal component analysis on attitudinal variables – women's answers
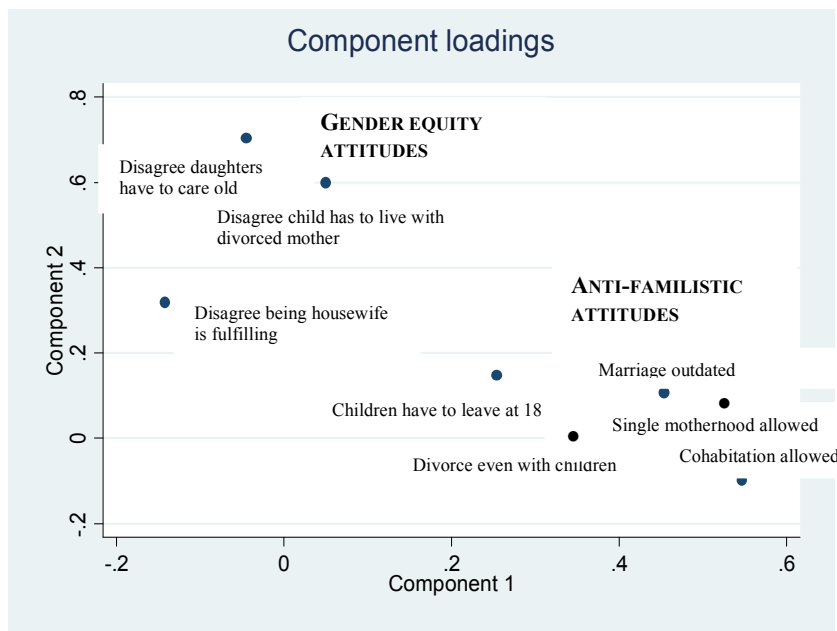
The analysis of variance (results not presented) showed that the Anti-Familistic Attitudes Score (F1) varied significantly across Italian regions ($p<0.001$): the Northern and Central areas tend to be less "familistic" than the Southern regions. The Anti-Familistic Attitudes Score also varied according to woman's education: women with medium levels of education tend to be more family oriented than women with low and high levels of education ($p=0.06$).

The Gender Equity Score (F2) varied by Italian region as well, with the more "modern" Northern regions showing higher gender equity attitudes than the Southern ones ($p<0.001$). In addition, the Gender Equity Score varies linearly and positively with education, with higher scores for more educated women ($p<0.001$).

In order to further investigate the relationship between the SDT process and fertility, we consider the variable on 'trust' ("Do you feel that you can trust others or that one must be very careful?), together with the variable on church attendance. Northern regions have higher levels of trust and the difference compared to Southern regions is statistically significant. Trust is also considerably higher among more educated women. This last result seems to contradict our hypothesis concerning trust as a traditional behavior, and instead supports Banfield's (1958) controversial work on Southern Italy which links traditional behavior (such as loyalty to one's family) with an "amoral" closure towards larger society (see also Putnam 2001). Church attendance, on the other hand, is considerably more frequent in the South than in the North of Italy, but does not significantly vary by education.

7. *Operationalizing the partners' gap in hours worked*

Hochschild and Machung's seminal work (1989) introduced the notion of a "stalled revolution", where women are more likely to contribute to household income, but men are not

likely to share in domestic work. Along these lines, it has regularly been suggested that the only change in the division of domestic labor is that women have simply added paid labor to their existing domestic responsibilities (Craig 2007). The popularized term "second shift" (Hochschild and Machung 1989) is still frequently employed to describe the often stressful position women find themselves in. Women's added shift has also come to be known by names such as 'the dual-burden,' the 'double-burden,' and the 'double-day'[7] (Baxter, 2002; Bittman, 1999; Harrington, 1998; Bittman and Matheson, 1996; Shelton, 1992; Hochschild and Machung, 1989; Pahl, 1984; Meissner et al., 1975).

Time-use analysis has typically been employed in studies of the couple role-set. Some authors have suggested that while men have not increased their contribution to domestic work, women have substantially lowered their time spent doing household chores (Bianchi et al., 2006, 2000; Baxter, 2002)[8]. In accordance with these results, it has been shown that in the U.S., the *total* time women and men spend doing paid and unpaid work (taken together) is broadly equal (Bianchi et al., 2006; Robinson and Godbey, 1997; Greenstein, 2000; Shelton and Firestone, 1989). A comparison of time-use across 10 OECD countries conducted by Bittman and Wajcman (2004) found similar results.

In our FSS sample, however, Italian women work an average of 54 total hours per week, while men work 48 hours (see appendix). In other words, Italian women work an extra 24-hour day per month compared to men.

Furthermore, the FSS data reveal that the average time devoted each week to domestic work is 35 hours for women and 6 hours for men. These results are similar to findings from other U.S. studies for women, but not for men. Using data from the 1987 NSFH data, Greenstein (2000) showed that women do 37 mean hours of domestic work per week. Torr and Short (2004), using 1987-88 and 1992-94 NSFH data, with a focus on couples aged 18-39 with at least one child, showed 32 mean hours of domestic work per week for women[9]. Note, however, that the U.S. NSFH data were gathered ten years prior to the FSS data. For men, on the other hand, Greenstein (2000) and Torr and Short (2004) show a domestic engagement of 17 hours per week, a relevant difference when compared to the Italian men of the FSS sample. The gap between Italian and American men may be even wider if one takes into account, as just mentioned, that the data were collected in the U.S. much earlier. In addition, FSS Italian data refer to "hours in domestic and family work". Although this kind of question does not explicitly include care work, it is probable that some respondents incorporated this kind of labor into their answer. This could explain the higher amount of domestic work hours reported for Italian women, but also supports the lower domestic engagement of Italian men.

In terms of paid labor, the Italian 2003 FSS data reveal that women do a weekly average of 19 hours, compared to 41 for men. Greenstein (2000) showed similar results for American men, but more labor hours for American women (24.1). Again, differences between Italian and American women could be even greater, given that the data Greenstein refers to are from the late 1980s.

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[8] It has been noted that time-use analyses tend to be gender biased, in that often only the primary activity is taken into account, excluding the possibility of a secondary (simultaneous) activity. As multitasking is done more often by women than men (particularly with regard to childcare) measurements tend to be skewed, obscuring possible gender workload disparity (Craig 2007).

[9] For comparison, we referred to studies which collected data retrospectively (such as in the Italian FSS survey), and which tend to overestimate actual hours (Bianchi et al. 2000). Prospective work, on the other hand, usually obtains a lower number of hours for woman's domestic labor. A recent work by Gupta et al. (unpublished work) finds an average of 20.2 weekly hours of domestic work are conducted by German women (German Socio-Economic Panel 1999), 14.9 hours by Swedish women (2000 Swedish Level of Living Survey), and 19.7 by American women (1999 wave of the Panel Study of Income Economics). Similarly, Bianchi et al. (2000) estimate 19.4 weekly domestic hours for American women while Fernandez and Sevilla-Sanz (2006) observe 25.1 domestic hours per week for Spanish women.

In order to capture the gender gap in domestic and paid labor hours in Italy, we calculate a Partners' Work Gap indicator, the distribution of which is plotted in Figure 3.

Fig. 3 – Partners' Work Gap Index distribution
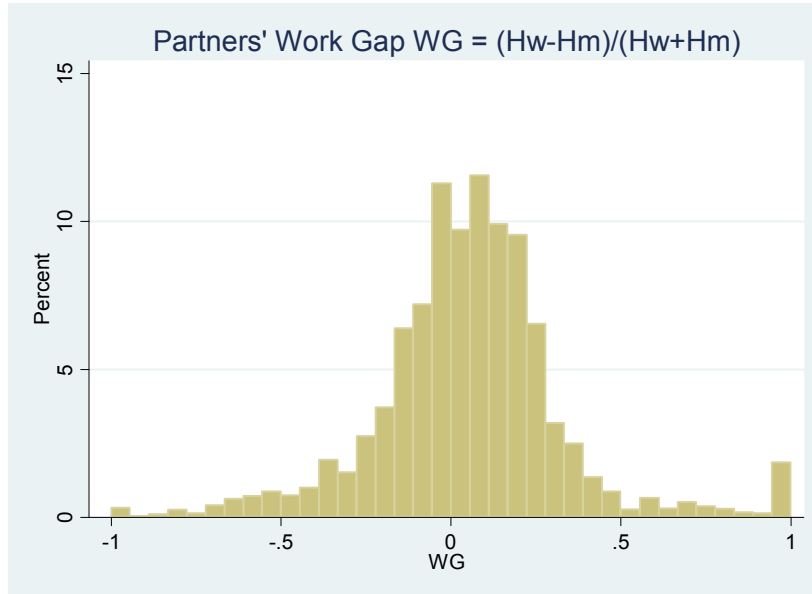
The WG index for Italy shows an asymmetric distribution skewed to the right, reflecting a higher workload for women than for men. The analysis of variance (results not presented) showed that the WG Index varies significantly across Italian regions ($p<0.001$), with a higher total workload for women in the South. In addition, the results show that the WG Index significantly decreases, approaching an egalitarian workload, according to the level of women's education ($p<0.001$).

Note that we use the gap between total hours worked by partners, instead of the gap in housework hours (for research on this aspect, see among others Bianchi et al.'s, 2000, gender gap indicator, as well as Fernandez and Sevilla-Sanz's degree of specialization indicator, 2006). We believe the first measure to be more appropriate for representing the gap in overall workload, especially as we endeavor to understand how the former relates to fertility intentions. A feminist might criticize our approach, contesting that our WG index does not consider the general unfairness of the sexual division of labor "which is rooted in a system of unequal power between men and women" (Bittman and Wajcman 2004). We address this criticism in our conclusion (Section 9) by proposing several potential adjustments to our index in order to account for this perspective.

Coltrane (2000) has pointed out that the perception of an unfair division of domestic labor within the couple has been associated with a greater likelihood of depression and divorce, as well as more negative opinions of martial quality and satisfaction. It is possible that such factors can in turn influence demographic outcomes such as fertility. A more equal division of labor inside the family could thus potentially boost fertility. Torr and Short (2004) found that couple's role set influences the likelihood of having a second child following a U-shaped pattern: 'traditional' and 'modern' couples tend to have a higher probability of having a second child compared to those couples who fall somewhere in-between these categories. According to Mencarini and Tanturri's analysis (2004), the more a father participates in the care of the couple's first child, the more likely that the couple will choose to have a second child (Cooke, 2003, founds similar results using Italian data from a European panel survey, as did Olah, 2003, for Sweden and Hungary).

Likewise, when the man's participation in housework does not decrease following the birth of a second child, the probability of having a third child is higher. Mills et al. (2008) found, only for working women, a negative relationship between fertility intentions and the asymmetrical division of household labor – measured as a household workload share greater than 75%. Similarly, Austrian working mothers whose partners are little involved in housework and childcare do not desire another child (Tazi-Preve et al. 2004).

Some scholars have argued that the domestic allocation of time has a qualitative aspect, linked to the symbolic enactment of gender relations. Domestic labor cannot therefore be reduced to a simple trade-off between time spent in unpaid and paid labor among men and women (Torr and Short 2004). We endeavor to respond to this perspective by considering gender equity attitudes in our model as one of the factors which determine the partners' division of labor. Indeed, Bianchi et al. (2000) found that women and men's gender ideology affects the number of housework hours contributed by the woman, but not those by the man. In a similar vein, Hochschild and Machung's (1989) qualitative analysis showed that men tend to refuse women's solicitations to adopt her egalitarian gender ideology, and to adjust domestic behavior accordingly[10]. These authors suggest that women with gender equal ideologies sometimes accept, consciously or not, an unequal role set, due both to their partner's refusal to cooperate and their desire to avoid a marital crisis. In order to improve our knowledge of the causal relationship between gender ideology and partners' differential workload, we also attempt to take family conditions into account. For example, in some of the couples observed by Hochschild and Machung, "traditional" women engaged in external work in order to improve the economic conditions of the family and/or due to their partner's precarious employment situation.

Let's consider again figure 1. Thus far we have seen that gender equity attitudes can theoretically affect fertility intentions through a reduction of the woman's workload relative to her partner. Woman's gender ideology can also affect their satisfaction concerning the division of domestic labor. For example, the subjective perception of the workload can increase when a woman pursues gender equity.

Moreover, gender ideology could have a direct effect on fertility intentions independent of the woman's objective or subjective perception of the workload. For example, women more oriented toward gender equity could perceive the birth of a child as compromising self-realization goals in the labor market. On the other hand, Torr and Short (2004) found no direct effect of egalitarian gender ideology on the probability of having a second child, once they had controlled for the couple role-set and other background variables.

In conclusion, in our analysis, we attempt to measure the direct effect of gender attitudes on fertility intentions, as well as the indirect effect through workload and satisfaction with the division of domestic labor. Moreover, gender attitudes are located within the broader scheme of SDT changes, such as the relationships between gender ideology, anti-familistic values, religiosity and feelings of trust towards others.

8. Results

In presenting the results, we refer to the causal framework illustrated in figure 1. The relationship between fertility intentions and couple's workload is described first. We then consider the influence of attitudinal variables pertaining to family and gender. To investigate the causal link

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[10] Hoschild and Manchung classify women and men's gender ideology as either traditional (male breadwinner), transitional (acceptable that the woman works but she is still burdened with most of the domestic work), or egalitarian (both partners equally share domestic responsibilities and work).

between variables, we estimated 13 nested models, each adding a new potential confounder (appendix 3).

The effect of the couple's workload on fertility intentions

The greater the number of extra hours worked by the woman in comparison to her partner (partners' work gap index), the lower the fertility intentions (see models 1-7 in appendix). However when total weekly hours worked by the man (domestic plus labor work) are taken into account in the multivariate model, the work gap index effect on fertility intentions disappears (appendix model 8). The reasons are the following: We know that a man's weekly hours of work consist principally of non-domestic work. These hours increase family income and with it fertility intentions. At the same time, the man's worked hours have, by definition, a negative effect on the partner's work gap index. Thus, the Gap Index has a spurious negative effect on fertility intentions because a man's total worked hours produces a negative covariation of the two variables (figure 4). As the whole gap index effect is, eventually, an income effect, we conclude that our indicator is of little utility to measure a "substitution effect" of work on fertility (Becker, 1981; Cigno and Ermisch, 1988, Ekert-Jaffe, Mougin, 2006, among others)[11]. In the concluding paragraph we will offer further reflections and proposals concerning the measurement of partners' work gap.

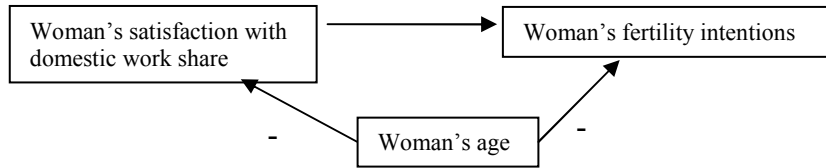**Figure 4 – Man's weekly worked hours as a control variable of the gap index-fertility relationship**
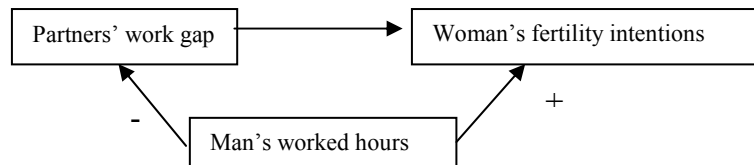
Woman's total hours of work are, on the contrary, negatively related to fertility intentions. However, this effect almost completely disappears when we controlled for the couple's parity (model 13 in appendix 1). The causal framework is the following: the higher the number of children in the family, the more hours the woman works, and the weaker the fertility intentions. Thus, as is obvious, woman's workload acts as intermediate variable mediating the negative effect that parity exerts on fertility intentions.

Among the explanatory variables taken into consideration, we explore women's subjective perception of the workload, expressed as satisfaction with the division of domestic work with her partner. The greater the woman's satisfaction in this respect the greater the intention of having a child. The nested models (model 8 in appendix 3) show that this relationship is partially explained

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[11] According to an economic perspective, when a greater availability of income increases goods consumption, an "income effect" is observed. On the contrary, a "substitution effect" is observed when there is a negative relationship between income and goods consumption. Considering children as "goods", we can observe that fertility usually declines when women's wages increase, e.g. In terms of fertility, the wage substitution effect often dominates the income effect. The reason being that in developed countries, childcare requires considerable investments of time and energy on the part of parents, especially that of women. In addition, it is possible that more labor reinforces preferences for a lifestyle and a social environment different from that of the domestic sphere, thus affecting fertility preferences. On the contrary, men's wages are generally positively associated with fertility, i.e. the income effect dominates the substitution effect.

by the woman's cohort: the higher her age the less satisfaction with the actual division of domestic work with her partner and the less she intends to have a child (figure 5). But even when controlling for age, her satisfaction with the division of domestic work is still positively and significantly related to her intentions to have a child.

Figure 5 – Woman's age as control variable of the woman's satisfaction-fertility relationship

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┌─────────────────────┐                    ┌─────────────────────┐
│ Woman's satisfaction │ ─────────────────> │ Woman's fertility   │
│ with domestic work   │                    │ intentions          │
│ share                │                    │                     │
└─────────────────────┘                    └─────────────────────┘
            ^                                          ^
             \          ┌──────────────┐              /
           -  \         │ Woman's age  │            -/
               \────────│              │───────────/
                        └──────────────┘
```

Our nested models also show that the woman's satisfaction with domestic work is an intermediate variable in the relationship between her feelings of trust toward other people and her fertility intentions (see the decreasing coefficient for variable: "feelings of trust toward other people", once the woman's satisfaction with domestic work is added to model 4 in appendix 3). This is an interesting result, showing that, independent of the couple's actual role-set, the woman's satisfaction with domestic work may be influenced by a general disposition, such as feelings of trust in other people.

The effect of gender attitudes on fertility intentions

Woman's gender attitudes positively influence her intention to have a child within the next 3 years (models 1-5 and models 8-9 in appendix 3). Of particular interest, we observe through the nested models that gender attitudes act as an intermediate variable in the relationship between education and fertility intentions (model 6, figure 6). In addition, gender attitudes act as an intermediate variable in the indirect effect of woman's cohort on fertility intentions (model 8) and in the indirect effect of geographic area of residence on fertility intentions (model 9). Finally, the woman's gender attitudes have an indirect effect on fertility intentions by influencing her work status – the relationship could also operate in the reverse direction, with work status affecting gender attitudes (model 10, figure 7). Once we control for all the explanatory variables in model 13, the coefficient of gender attitudes approaches zero. This means that its effect on fertility intentions is explained by cohort, education, and geographic area and mediated by the woman's work status.

Figure 6 – Gender attitudes as intermediate variable of the effect of education on fertility intentions

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┌─────────────────────┐                    ┌─────────────────────┐
│ Gender attitudes    │ ─────────────────> │ Woman's fertility   │
│ factor              │                    │ intentions          │
└─────────────────────┘                    └─────────────────────┘
            ^                                          ^
         +   \          ┌──────────────┐           +  /
              \─────────│ Woman's      │─────────────/
                        │ Education    │
                        └──────────────┘
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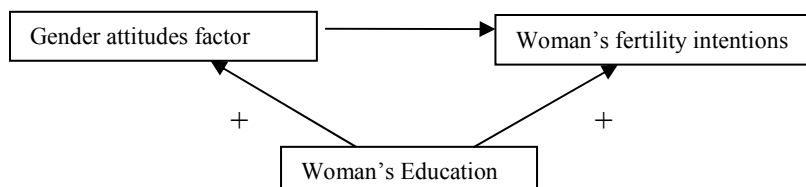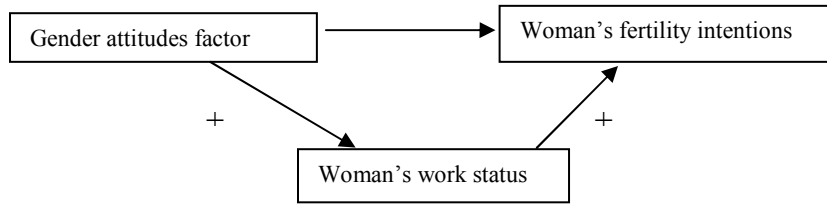
Figure 7 – Indirect effect of Gender attitudes on fertility intentions through the woman's work status.

The effect of anti-familistic attitudes, feelings of trust, and religiosity on fertility intentions

Anti-familistic attitudes – beliefs that marriage has become a weak institution and that children should leave early from parental home – have a negative effect on the woman's intentions to have a child within the next three years. The coefficient of this explanatory variable remains negative and significant even after controlling for all the variables in model 13 (appendix 3). Moreover, according to model 2 (appendix 3) anti-familistic attitudes are partially an intermediate variable of positive effect of woman's *religiosity* on fertility intentions, i.e. religiosity positively affects the beliefs that family ties are a priority over individual autonomy and, through these beliefs, has an indirect effect on the woman's fertility intentions (figure 8). Note that the woman's religiosity has a positive effect on her fertility intentions in models 8-13. More specifically, cohort caused a negative covariation between religiosity and fertility intentions, which then turns positive once it has been controlled for in the multivariate model.

Figure 8 – Woman's non-familistic attitudes as intermediate variable in the relationship between religiosity and fertility intentions
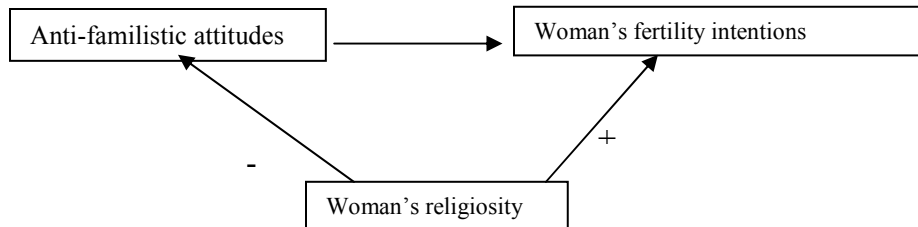
In terms of the *woman's feelings of trust toward other people*, we have already observed that this variable affects a woman's satisfaction with the couple's role-set, which then influences fertility intentions. Feelings of trust toward other people is, in turn, an intermediate variable of the effect that woman's cohort has on fertility intentions. In fact, according to our nested models we can observe and infer the following causal relations. We observe that the higher the woman's age, the lower her intention to have a child. In addition, we see that the coefficient of the variable "feeling of trust" increases when age is accounted for in our multivariate model (from 0.016 to 0.110 in model 8). Thus, we can infer that older cohorts have stronger feelings of trust toward others. The causal framework of a cohort-trust-fertility relationship is illustrated in figure 9. Similarly, education has an indirect positive effect on a woman's fertility intentions through the woman's feelings of trust toward others, i.e the higher her education, the stronger the feeling of trust toward others, and the greater the intention to have a child (see changes from model 5 to model 6 in the coefficients of the variable "feeling of trust"). But even when controlling for cohort,

education, and parity a woman's feeling of trust is still positively and significantly related to her intentions to have a child.

Figure 9 – Feeling of trust as intermediate variable of the effect of age on fertility intentions
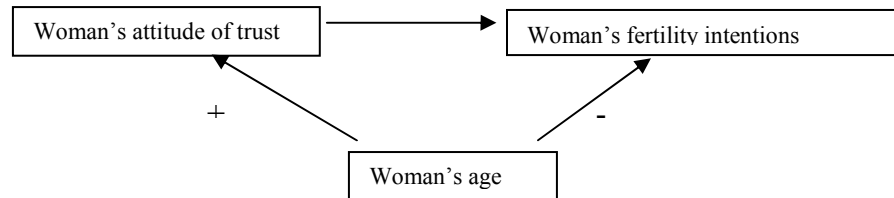
One final remark on this point: we have already stressed in a previous section that we observe no correlation between the anti-familistic attitudes factor and the gender attitudes factor (even when other PCA methods, which do not force components to be independent, are estimated); thus we conclude that gender attitudes and familism appear to be independent dimensions in the SDT process. In other words, people with anti-familistic attitudes are not more likely to be gender equity oriented. More generally, anti-familistic attitudes, attitudes of gender equity, religiosity, and trust towards other people are all uncorrelated dimensions of the individual values system here considered. Given the Catholic philosophy of "reciprocal love", it is surprising to observe that trust toward others is not correlated with church attendance. Furthermore, despite some positions of the Catholic Church, such as the interdiction of women priests, gender attitudes are not correlated with church attendance. The only correlation we observe in terms of attitudes is the negative relationship between religiosity and anti-familistic attitudes shown in figure 10 and model 2 (appendix 3): the higher the frequency of mass attendance, the stronger familistic attitudes tend to be. In other terms, more religious individuals attribute higher values to marriage, accept the permanence of children in the family of origin even after the age of 18, disapprove of divorce when children are present in the household, and disagree with single-motherhood.

Other results

Other interesting results are shown in our models (appendix 3). First, the positive effect of female work status on a woman's fertility intentions (models 10-12) is spurious and depends on parity. Second, a positive effect of education on fertility intentions is observed which, in accordance with Mills et al. (2008:18), we "relate to a stronger bargaining power of women and the tendency of more highly educated couples to equally divide housework or possibly to outsource it".

In addition, women who reside in the North-East of Italy are more likely to desire a child within the next three years. Finally, our results suggest that the death of the mother-in-law negatively influences fertility intentions. This could, however, reflect a male partner age effect: the higher his age, the more probable the death of a parent and the less likely the intention to have a child. In our model we control for woman's age but not for her partner's age –the higher his age, the more probable that his mother has passed away. In this sense, further model refinements are needed.

Simulation results

Results can be summarized through simulation using coefficients of model 13 (appendix 3). In figure 10 we compare the predicted fertility intention for profiles of five hypothetical women.

We consider two possible places of residence, North-Eastern and North-Western Italy, i.e. the regions with the strongest difference in fertility intentions. We note that fertility intentions remain consistently lower in North-Western Italy for all elements the profile. Central Italy has an intermediate value (results not shown). The Southern region (results not shown) has a predicted fertility intention not much different from North-East. As the *unadjusted* Southern regional differential with North-East is much larger (results not shown), we can conclude that the other personal traits included in the full model drive the regional differences.
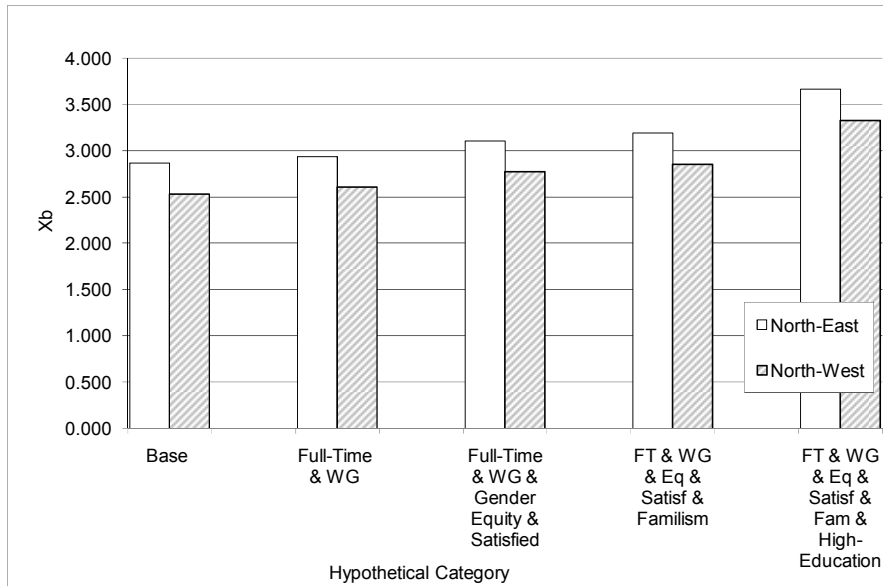
The base profile refers to a woman aged 30-34 years of age, with a middle-level of education, employed part-time, and with one child less than three years old. The division of total workload between partners is equal, corresponding at 50 hours per week each. Thus, WG=0. The woman is taken to be neutral (at the mean of zero) on both the familism dimension and the gender-equity dimension (recall that, computationally, factors are derived to have a mean of zero in the sample.) This hypothetical woman reports Church attendance as "sometimes" during the year, and we also presume she is less trusting in others.

In the second profile, the woman works full-time (and has total work hours of 64). In this case we also fix male hours to about 50. Thus, the woman's relative workload increases and the work gap emerges (WG=0.12).

The third profile differs from the previous two on attitudinal dimensions. We hypothesize a woman who holds more pro-equity attitudes (gender equity factor score of 1.0) and she is satisfied about the division of domestic work with her partner (satisfied=1). Fertility intentions slightly increase, not because of gender equity attitudes, whose estimated adjusted coefficient is near zero but because of the effect through satisfaction.

In the fourth profile the hypothetical woman has the characteristics of third profile but she is also family-oriented: she believes in marriage and she thinks that children should remain in the family even after 18 (we take her to have a family's factor score of -1, and thus a predicted increment to the fertility preferences of [-1*-0.084=+0.084]). These increases further her fertility intentions. Finally the fifth profile examines a hypothetical woman who is similar to simulation #4, but also has a high level of education, instead of middle-level education as in the above profiles. This strongly increases fertility intentions. Replicating and focusing the results of the estimated coefficients, this last step of the simulation points to an appreciable effect of education, once all other traits are controlled. Indeed the educational contrast (high vs. low) is quite powerful overall.

Figure 10 – Predicted fertility intentions

The chart plots Xb (0.000 to 4.000) against Hypothetical Category, comparing North-East and North-West. Categories: Base; Full-Time & WG; Full-Time & WG & Gender Equity & Satisfied; FT & WG & Eq & Satisf & Familism; FT & WG & Eq & Satisf & Fam & High-Education.

9. Conclusions

A woman's perception of a fair organization of domestic work with her partner ("Are you satisfied with the division of domestic work?") positively affects the woman's intention to have a child within 3 years. According to our models, younger women are more satisfied with the organization of domestic work than older women, reflecting a cohort change in the way domestic activities are shared.

Our analysis also shows that total number of hours the woman works (domestic plus paid labor) negatively affects her fertility intentions, and that this relationship is a function of the number of children she has already had: the more children, the higher her workload, and the lower her intention to have another child.

A man's total hours of work (domestic plus paid labor), by contrast, positively affect his partner's fertility intentions, as they express principally the availability of a higher income to afford children's basic needs, to paid care services (both nursery school and baby-sitting), and to guarantee a better education. In the Italian context, family income is particularly important to parents, as it enables them to buy designer clothes and other status symbols for their children. The social pressures for such child-related conspicuous consumption may even be greater in Italy than in other countries. In Italy, a high value is also attached to the ability of parents to buy a house for one's children in the future. As a consequence, monetary transfers to families could also increase fertility intentions although some authors prefer "policies of services" in order to favor female work. According to McDonald (2000a) "(i)n social systems that have not moved fully to gender equity (the situation in all societies), expenditure on services usually provides greater benefits to women than to men, because women are more likely to be the substitute providers of family services if these services are not provided by the state or by the market. Thus, expenditure on tax transfers is consistent with the male breadwinner model of the family while expenditure on services is consistent with a gender equity model".

We also build a measure which compares the partners' total workload. From a conceptual point of view, we believe observations of the total workload provide a better measure of the couple's

relative burden compared to assessments of domestic hours alone. According to our working hypothesis, it is not necessarily the specific couple role-set in domestic work – whether traditional, egalitarian or intermediate– which may be unfair, but the total workload relative to the other partner, obtained by the sum of domestic and paid labor hours. Our Partners Work Gap indicator proves useful for describing the Italian situation, in which women work an extra 24 hours a month compared to men. However, in the multivariate model it seems not to add additional information with respect to variables on partners' total hours.

In our attempt to measure the workload effect on fertility intentions, two types of problems arose. First, labor can produce two effects on fertility: one positive (income effect), related to an increase in family resources through labor, and one negative (substitution effect), in that the investment of time in childcare competes with labor working time. Our workload indicators were unsatisfactory for measurement of the negative effect (or "substitution effect") of woman's extra-work on fertility intentions. However, if we control for "income effect" in our multivariate model, our time indicators (partners' worked hours and the gap in partners' worked hours) could measure a "substitution effect" of woman's extra-work on fertility. Such a control of the income effect of paid labor would be made possible by the construction and inclusion in the multivariate model of an indicator of welfare for the family. Said indicator would account, for example, for home ownership, type of occupation, labor contract, and career prospects (unfortunately information on income is not available in the FSS).

Second, as mentioned in Section 7, the feminist literature criticizes the total workload approach and emphasizes the importance of accounting for domestic work allocation, reflecting an unbalance in power between genders. Some authors argue that domestic work is more repetitive and in addition increases a woman's vulnerability in case of marital disruption.

Our indicators of workload could be improved by disentangling the domestic and paid labor components of workload. In other words, we need to build two work gap indices, one for paid labor and one for domestic labor, and then combine them in a unique indicator. In table 2 we present the four main couple's strategies we expect to obtain.

Table 2 – Couple's labor strategy as combination of partners' gap in domestic labor and partners' gap in paid labor

Partners Paid labor		Partners Domestic labor		Partners' Labor Strategy
Equal workload	&	Equal workload	→	1. Equal division of labor
Equal workload	&	Extra-work for woman	→	2. Division of labor unequal for woman
Extra-work for man	&	Extra-work for woman	→	3. Traditional division of labor
Extra-work for man	&	Equal workload	→	4. Division of labor unequal for man

The first partners' labor strategy corresponds to an equal workload between partners in domestic labor and paid labor, thus relating, on the whole, to an equal division of labor. In the second type of couple's organization that we expect to obtain, there is still equilibrium in paid labor, the woman, however, does most of the domestic work. Hochschild and Machung (1989) refer to this situation as "transitional" (see note 9). The third couple's role-set would be the traditional one, where the man does most of the paid labor and the woman does most of the domestic work. Finally, we might also find, in some cases, a man assuming a greater workload in paid labor while sharing equally with his partner in domestic labor.

There is clearly a need to improve the specification of partners' workload in other ways as well. For example, one has to consider that some of the paid labor in the lower classes can be physically consuming or dangerous. In summary, if comparison of hours of work can show equality in workload, much work is needed to establish if the division of work is egalitarian or fair. Of course this judgment involves not simply a question of measurement but also a question of values.

An original contribution of this study concerns the measure of attitudes. Several items included in the questionnaire measure the partners' lifestyle and attitudes, including the frequency of church attendance and feelings of trust in other people. Moreover, the database used indicates respondents' attitudes towards marriage, towards the transition to adulthood ("It would be better for a child to leave home at 18 years of age"), and towards gender-specific roles. Principal component analysis allowed us to consolidate these items in two indicators: an Anti-familistic indicator reflecting attitudes, and a Gender Equity indicator.

No significant effect of the gender equity indicator was found on the couple's role set. This seems to confirm Hochschild and Machung's qualitative work (1989), showing that women mostly adapt their work choices (part-time versus full-time work, manager position versus executive position) to family demands, job market conditions, and male gender attitudes. In future analysis, we will attempt to consider both partners' gender ideologies and overcome the technical problem of correlation between them.

On the other hand, we found a direct effect of gender equity attitudes on fertility. A woman's egalitarian gender attitudes positively affect her fertility intentions. However, we also show that gender attitudes are entirely explained by cohort, education and region of residence. If a diffusion process of gender equity attitudes is assumed, this is moving from more educated, younger and Northern women. Moreover, gender attitudes have an indirect effect on fertility intentions by increasing the probability that a woman is employed in paid labor. Only a panel study could establish, however, if gender attitudes influence the probability of work, or if the reverse is also true.

In future refinements of this analysis, we intend to consider the interaction between partners' labor strategies (described in table 2) and partners' gender ideology, as the effect of each of these variables on fertility intentions could depend on the other. For example, a traditional division of labor could negatively affect fertility intentions if the woman's egalitarian aspirations do not match reality; yet the same traditional role-set could positively affect fertility intentions if her gender ideology is also traditional.

Religiosity, as measured by church attendance, and feeling of trust in others are also positively related to fertility intentions. Interestingly, we found the two variables to be uncorrelated, thus reflecting two different independent processes of influence on fertility. The anti-familistic attitudes – primarily those concerning marriage perceived as weak institution and agreement that that a child should leave the family of origin early – are negatively associated with fertility intentions, and this association is only partly explained by their expression of a lower religiosity. We are thus able to confirm at the individual level that the Second Demographic Transition process – at least in a first phase lacking a generalized spread of gender equity attitudes – negatively influences fertility (here fertility intentions).

In summary, we found women's lifestyles – represented here by anti-familistic attitudes, gender equity attitudes, feelings of trust toward others, and especially religiosity – to be an influential component of their fertility intentions. Further work is clearly needed in order to observe in detail men's attitudes and lifestyle as well. In addition, our predicted values under various scenarios of personal characteristics show an appreciable effect of woman's education and region of residence.

A reminder is in order that our results refer to fertility intentions as the dependent variable. Intentions presumably are highly correlated with actual fertility. A panel study that incorporated the relevant variables that would permit an analysis of the relationship between a couple's role-set, attitudes and their *actual fertility* would improve our understanding of the links between fertility intentions and fertility behavior, by showing different factors of influence on intentions and behaviors.

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Appendix 1 - Sample characteristics (women less than 45 years old, N=4,825)

VARIABLES	Weighted proportions or means	Unweighted number of cases
DEPENDENT VARIABLE		
Intentions to have a child in next 3 years		
No	46.43	2,187
Probably no	23.23	1,094
Probably yes	18.24	859
Yes	12.1	570
PARTNERS' WORKLOAD VARIABLES		
Satisfaction with organization of domestic work		
No - Little	21.78	1,051
Yes- Somewhat	78.22	3,774
Women's domestic hours	35.05 (21.07)	All sample
Men's domestic hours	6.26 (8.41)	All sample
Women's labor hours	19.45 (18.53)	All sample
Men's labor hours	41.47 (13.52)	All sample
Women's total hours	54.5 (20.78)	All sample
Men's total hours	47.73 (14.94)	All sample
Partners' Work Gap Index	0.05 (0.28)	All sample
LIFESTYLE AND ATTITUDE VARIABLES		
Church attendance		
At least once per week	32.73	1,579
A few times a month	25.14	1,213
A few times a year	31.71	1,530
Never	8.54	412
Missing	1.89	91
Trust in other people		
Yes	18.96	902
No	79.83	3,852
Missing	1.47	71
Familism index**	0.02 (1.48)	All sample
Gender index**	0.04 (1.16)	All sample
CONTROL AND INTERMEDIATE VARIABLES		
Women's age groups		
Less than 30 years old	15.05	726
30-34 years old	22.63	1,092
35-39 years old	30.96	1,494
40-44 years old	31.36	1,513
Women's education		
Low education	44.58	2,151
Middle education	45.22	2,182
High education	10.2	492
Women's occupational status		
Occupied full-time	40.17	1,938
Occupied part-time	16.99	820
Looking for a job	4.25	205
Housewife	38.59	1,862
Mother's proximity		
Cohabitation or same building	9.1	439
Less than 50 kilometers	66.13	3,191
More than 50 kilometers	9.6	463
Dead or living abroad	15.17	732
Mother-in-law's proximity		
Cohabitation or same building	12.62	609
Less than 50 kilometers	60.62	2,925
More than 50 kilometers	8.99	434
Dead or living abroad	17.72	855
Missing	0.04	2
Young children		
No children	17.35	837
One child, older than 5	13.43	648
2 children or more, older than 5	29.28	1,413
One child, 5 years old or less	16.35	789

2 children or more, at least one 5 years old or less	23.59	1,138
Italian region of residence***		
North-West	20.54	991
North-East	21.08	1,017
Center	20.17	973
South	38.22	1,844

Note:

*Only women aged less than 45 are considered in the sample

** Median value is reported

***North-West includes: Piemonte, Valle d'Aosta, Lombardia, and Liguria;

North-East includes: Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, and Emilia-Romagna;

Center includes: Toscana, Umbria, Marche, Lazio, and Sardegna;

South includes: Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, and Sicilia.

Appendix 2 – PCA's scoring coefficients

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Comp7	Comp8
"Marriage is an outdated institution"	0.4536	-0.0836	0.1396	-0.0083	-0.5092	0.5312	-0.3914	0.2704
"A couple can live together even without plans to get married"	0.5436	0.1397	-0.0104	-0.1567	-0.0997	-0.1114	0.0268	-0.7983
"A woman can have a child alone"	0.5004	-0.0286	0.0644	-0.1812	-0.1488	-0.5707	0.3641	0.481
"It would be better for a child to leave home at 18 years of age"	0.2649	-0.1105	0.4874	0.7169	0.3457	-0.1413	-0.1627	-0.0149
"It is right that an unhappy couple divorce even if there are children"	0.3987	0.0122	-0.2667	-0.1921	0.7136	0.4211	0.13	0.1713
"In case of divorce it is better for the child to stay with mother"	-0.0709	0.616	0.4539	0.0441	-0.0904	0.3332	0.5362	0.0277
"It is natural that a daughter cares for elderly parents"	0.018	0.7134	-0.0357	-0.1309	0.1554	-0.2657	-0.5931	0.161
"Housework can be as fulfilling for a woman as paid labor"	0.1176	0.2683	-0.6784	0.6105	-0.2182	0.0267	0.1757	0.0455

Appendix 3- Ordinal Logistic Model of the probability of intending to have a child in the next three years

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13
SDT factors													
Non-familistic attitudes	-0.011	-0.020	-0.021	-0.016	-0.015	-0.020	-0.021	-0.004	-0.009	-0.021	-0.021	-0.021	-0.085 ***
Gender attitudes	0.087 **	0.084 **	0.083 ***	0.078 **	0.077 **	0.025	0.027	0.058 *	0.045 *	0.034	0.032	0.030	0.000
Mass attendance (ref. never)													
At least every week		-0.097	-0.102	-0.101	-0.077	-0.013	-0.007	0.460 **	0.496 **	0.509 ***	0.496 ***	0.486 ***	0.720 ***
Sometimes per month		-0.178	-0.176	-0.165	-0.142	-0.050	-0.043	0.229 *	0.272 *	0.283 **	0.271 **	0.269 **	0.478 ***
Sometimes per year		0.009	0.011	0.022	0.048	0.131	0.140	0.389 **	0.409 **	0.405 ***	0.393 ***	0.381 ***	0.403 ***
Do you think we can trust in others or we have to be very carfull? (ref. no trust)													
Yes			0.183 ***	0.168 *	0.161 *	0.019	0.016	0.110	0.098	0.105	0.101	0.099	0.170 **
Woman's satisfation about the organisation of the domesti work with partner (ref. no satisfied)													
Satisfied				0.362 **	0.339 **	0.303 ***	0.302 **	0.183 *	0.172 *	0.175 **	0.175 **	0.175 **	0.169 **
Partners' work gap index					-0.607 **	-0.548 ***	0.067	0.064	0.053	-0.043	-0.034	-0.011	0.202
Woman's worked hours= Domestic hours + Labor hours							-0.008 *	-0.005	-0.005	-0.008 **	-0.008 **	-0.008 **	-0.002
Man's worked hours= Domestic hours + Labor hours							0.008 *	0.005	0.004	0.004	0.004	0.004	0.010 **
Woman's education (ref. middle education)													
High						0.463 ***	0.457 **	0.693 **	0.706 **	0.591 ***	0.595 ***	0.592 ***	0.466 ***
Low						-0.660 ***	-0.668 **	-0.623 **	-0.610 **	-0.518 ***	-0.516 ***	-0.509 ***	-0.375 ***
Woman's age (ref. 30-35)													
less 30								0.882 **	0.888 **	0.875 ***	0.872 ***	0.864 ***	0.290 ***
35-39								-1.076 **	-1.079 **	-1.093 ***	-1.091 ***	-1.090 ***	-0.692 ***
40-44								-2.128 **	-2.135 **	-2.178 ***	-2.172 ***	-2.157 ***	-1.723 ***
Couple's geographic area of residence (ref. north-east)													
North-West									-0.222 *	-0.245 ***	-0.245 ***	-0.252 ***	-0.334 ***
Center									-0.173 *	-0.163 *	-0.168 *	-0.180 **	-0.156 *
South									-0.274 **	-0.223 ***	-0.235 ***	-0.251 ***	-0.012
Woman's occupation type (ref. housewife)													
Full time										0.532 ***	0.525 ***	0.519 ***	-0.057
Part-time										0.055	0.047	0.047	-0.115
Looking for job										0.385 ***	0.386 ***	0.384 ***	0.189
Woman's mother proximity (ref. less than 50km)													
cohabitation											-0.122	-0.121	-0.061
more 50 km											-0.084	-0.076	-0.120
abroad or dead											-0.130	-0.094	-0.112
Woman's mother-in-law proximity (ref. less than 50km)													
cohabitation												-0.005	-0.019
more 50 km												-0.033	-0.138
abroad or dead												-0.201 **	-0.270 ***
Parity (ref. 2 children)													
No child													3.198 ***
1 child													1.230 ***
1 young child													2.328 ***
2 children, at least 1 young													0.088
Number of obs	4657	4657	4657	4657	4656	4656	4656	4656	4656	4656	4656	4656	4656
LR chi2(2)	14	23	30	59	97	290	297	1545	1557	1618	1622	1633	2819
Prob > chi2	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.001	0.002	0.003	0.005	0.008	0.025	0.025	0.132	0.133	0.138	0.138	0.139	0.240
Log likelihood =	-5868	-5863	-5860	-5845	-5826	-5729	-5726	-5101	-5095	-5065	-5063	-5057	-4464

Legend: *p<0.1   **p<0.05   *** p<0.01