Conflicted Fertility Preferences and Contraceptive Use among Burkina Faso's Urban Poor

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Abstract

In this paper, we ask whether low levels of contraceptive use among poor, urban Africans are due to enduring desires for large families, or to obstacles to family planning services. Using qualitative and quantitative data collected in the Ouagadougou Health and Demographic Surveillance System (Ouaga HDSS) between 2009 and 2012, we confirm that poor city dwellers have a lower use of contraception than the non-poor. We find that, in addition to being aware of the high costs of children, many disadvantaged city dwellers remain sensitive to the benefits of large families. These conflicted fertility preferences translate in the quantitative survey for the poor in relatively low desires to avoid a child in the next two years, contrasting with higher total numbers of child desired. While obstacles to family planning are numerous, a fragile motivation to overcome them is also at stake. Demand for contraception as conventionally measured seems overstated.

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Introduction

The relative role of development versus family planning programs in accounting for fertility transitions in developing countries is a long-standing debate, which arguably found its ultimate expression in the vivid argument between Pritchett and Bongaarts published in 1994. Using a series of country-level regressions, Pritchett argued that fertility declines are largely explained by changes in desired family sizes, which are, in turn, driven by socioeconomic development (which changes the costs/benefits of children). Pritchett expressed doubt that family planning programs contribute very much to these changes. Bongaarts used another set of country-level correlations to argue that family planning programs can have a large impact on fertility, even in poor, underdeveloped settings and without changes in fertility preferences. Bongaarts showed that these populations have high levels of unmet need for contraception, demonstrating the potential for programs lowering the costs of contraception. While both scholars are convincing, it has proven difficult to reconcile their ideas into a single, coherent narrative on fertility. It also remains to be explained why they arrived to such contradictory conclusions using the same set of Demographic and Health Surveys data.

This debate should regain some interest as the persistently high fertility rates in Sub-Saharan Africa become the object of new international attention and interventions. The region is indeed characterized by higher fertility preferences and lower levels of socioeconomic development than other developing regions at the start of their fertility transitions (Bongaarts 2013), which could threaten the success of these renewed efforts. Cleland and al. (2006) are among those who vigorously assert that family planning programs are sufficient to implement change even in poor contexts, dismissing considerations about fertility preferences and lack of development. For these authors, "fertility differences between rich and poor populations stem not from the application of reproductive choice but from the absence of such an option for the poor" (p. 1813). Unmet need for family planning, which is highest on the African continent than anywhere else (Alkema et al. 2013), remains at any rate a powerful argument in favor of strengthening programs in African countries.

The "fertility preferences / development versus family planning programs" debate surfaced recently in the discussion of the unfavorable reproductive outcomes of poor African city dwellers. Africa is rapidly urbanizing, and urban residents make up a fast-growing share of its population. Much of this urban development has been taking place in informal settlements, and urban poverty is expanding (WHO UN-HABITAT 2010). While African cities are, on

average, much more far along in the fertility transition than rural areas (Shapiro and Tambashe 2002), the urban poor's reproductive indicators often resemble those of their rural counterparts more than those of the urban middle-class (Ezeh at al. 2010).

A number of social/anthropological demographers have explained these outcomes by arguing that poor residents of African cities still find large family sizes advantageous (Smith 2004, Agadjanian 2005, Johnson-Hanks 2007, Romaniuk 2011). These authors show that poor urban dwellers are well aware of the costs of raising children in the city, but remain sensitive to the benefits of having many offspring, as the benefits of large families can be substantial where precarity reigns. In these urban African contacts, where individual chances of success are low and success may depend more on interpersonal connections or simple dumb luck than merit, strategies of diversification may often pay off.

Other researchers have stressed, on the other hand, that the urban poor have high levels of unmet need for contraception because they face obstacles to accessing family planning. Ezeh et al. (2010), for example, cite difficulties in accessing quality public health services, misconceptions about contraception, the costs of contraceptives, and unequal gender relations. These results echo the vast literature on the "obstacles to family planning" in low-income countries. In a 2006 review article, Campbell et al. conclude that the main barriers to fertility regulation in developing countries are "limited method choice, financial costs, the status of women, medical and legal restrictions, provider bias, and misinformation" (p. 87).

In this paper, we argue that the demand for contraception (and the ensuing unmet need indicator used by Bongaarts and all those arguing in favor of programs) as measured in surveys should not be taken at its face value in contexts where individuals have conflicted attitudes towards fertility. We contend that survey measures of the immediate demand for contraception tend to reflect individuals' concerns about the costs of children, while their concomitant valuation of the long-term benefits of children seem expressed in other survey answers. In settings and groups at the early phases of the fertility transition, demand for contraception are likely an overstatement -and ideal family size an understatement- of individuals' mixed attitudes towards fertility limitation.

We employ four bodies of qualitative and quantitative data collected between 2009 and 2012 in the Ouagadougou Health and Demographic Surveillance System, at the periphery of Ouagadougou, the capital of Burkina Faso: 1) the routine surveillance frame following more than 80,000 people; 2) a health survey with 758 women of reproductive age; 3) in-depth

interviews with 60 heads of poor households; and 4) observations of five health centers serving the area and two other facilities, and semi-structured interviews conducted with 45 women and men recruited at the facilities. We first examine whether poor residents in Ouagadougou have lower levels of modern contraceptive use and higher fertility than wealthier city dwellers. Using material from the in-depth interviews with poor household heads, we then show how these individuals experience conflicted fertility preferences, both realizing the high costs of children in the city and the constraints imposed by their poverty, but still believing that a large family brings substantial benefits. Using the data from the health survey, we show how these conflicted preferences are expressed by poor women in a survey by a higher *current* desire to avoid pregnancy, which contrasts with a relatively lower *all-time* demand for pregnancy prevention, compared to wealthier women. Using the data collected in the health centers, we finally show that vulnerable city dwellers encounter many of the obstacles to family planning services described in the literature, but conclude that these obstacles are not overcome partly because of a lack of motivation.

Data and Methods

The Ouagadougou Health and Demographic Surveillance System (Ouaga HDSS) is a platform for health research and interventions established in 2008 in five neighborhoods at the periphery of Ouagadougou (Rossier et al. 2012). Two of these (Kilwin and Tanghin) are formal neighborhoods with full access to public services, while the other three (Nonghin, Polesgo and Nioko 2) are unplanned, informal peri-urban settlements lacking such services. After an initial census conducted between October 2008 and March 2009, Ouaga HDSS fieldworkers have conducted periodic household surveys (with an average periodicity of 10 months until 2012), registering vital events (births and deaths), marriages and migrations. As of 2012, the population monitored by the Ouaga HDSS numbered about 86,000 residents, defined as individuals present in the zone for at least six months. This population living in the periphery of the capital is poorer, younger and more often rural-born (migrants) than the population of the city as a whole (Fournet et al. 2008). Social heterogeneity, however, remains high in these areas, especially in the formal peripheral ones (Boyer and Delaunay, 2009).

Qualitative data and methods

We use two bodies of qualitative data collected in the Ouaga HDSS in 2011 and 2012. During June and July of 2011, research assistants conducted 60 semi-structured interviews with the head of household of poor families living in all five neighborhoods under study. They were identified using key informants and the snowball method. An effort was made to include an equal number of respondents who fell into the categories of "poor" (precarious economic situation but able to meet basic needs for food, shelter, health and education) and "very poor" (unable to meet basic needs). Semi-directive interviews were conducted either in Mooré (the language spoken by the Mossi) or French[i], depending on the preference of the respondent, and took place at their residence. Interviews were translated into French as necessary and all interviews were transcribed. The interview guide included two questions directly related to family planning, which read:

1) "It is said that, to escape the misery [of poverty], one needs to push one's children to go to school and to practice contraception to have few children. What do you think about that?"

2) "Do you use contraception? Why (to limit, to space)? Or why not? How many children would you like to have in all?"

Of the 60 interviews conducted, 54 include enough information on family planning for analysis. A complete description of the data collection methodology and of the results of this study aimed at characterizing poverty in the Ouaga HDSS areas can be found in Rossier and Ducarroz (2012).

In addition, we use data from a study conducted between April and June 2012 at five facilities serving the Ouaga HDSS areas that offer family planning services, and two additional centers in Ouagadougou. A research assistant observed each facility over the course of one week. She spent several hours per day observing provider-client interactions and the overall functioning of the various sections of maternal and child health services (immunization, deliveries, family planning, etc.) She wrote a structured observation report for each facility. The same assistant invited a convenience sample of 33 females and 12 males to participate in individual semi-structured interviews. Discussions were in Mooré or in French. All female participants were recruited during their visit to one of the seven facilities. Men were recruited at the health facilities or in their immediate surroundings. The questionnaire for men and woman was identical and contained questions on contraceptive use, knowledge of fertility and

contraception, and family planning services received. The interviews were conducted in private (for example, in an empty room in the health facility). Interviews were audiotaped, then translated and transcribed. A complete description of the data collection methodology and of the results of this study aimed at understanding post-partum contraceptive services and practices can be found in Rossier and Hellen (2014).

The National Health Ethics Committee of Burkina Faso approved the human subject protocols of these two studies. Participants in the semi-structured interviews signed a consent form. Pseudonyms were created for the analysis of the individual interviews, and no real names were retained. We used content analysis techniques to describe the main themes emerging from the collected discourses and relate them to the respondents' demographic, social and economic characteristics.

Quantitative data and methods

Using quantitative data collected in the Ouaga HDSS, we examine four reproductive behaviors and outcomes, both at the individual and aggregate levels: 1) desired number of children; 2) current desire to avoid a pregnancy; 3) current use of modern contraception when wishing to avoid a pregnancy; 4) fertility rates.

The three first variables are drawn from a reproductive health survey conducted on a random sample of 592 households between February and September 2010. All women ages 15 to 49 were surveyed in the selected households, unless they declined or were absent, and a total of 758 women ages 15 to 49 were successfully interviewed (response rate of 76.8%). The analysis of the health survey data is weighted to take the response rate into account.

Using these data, we calculated a "desired number of children" for women ages 15 to 49 by adding the number of children they already had (2.4 children on average) to the number of children still wanted[ii]. Women currently wanting to avoid a pregnancy were defined as those who are in union or ever had sex while unmarried, are not pregnant, and do not want a child in the next two years[iii]. Finally, we calculated the proportion of women using a modern method of contraception among women wishing to avoid a pregnancy.[iv]

Fertility rates were calculated from routine surveillance data for the 2009-2011 time period, for all women ages 15 to 49 residing in the area under surveillance. Altogether, 6,156 births were registered among 30,132 women between the ages of 15 and 49 during this time period. Some women were present during the entire three-year period, others entered or exited during

the period, for a total of 55,606 woman-years. Births to visitors (with a duration of less than 6 months in the catchment area) were not included. Births to resident women during an absence of less than 6 months were registered.

We compare these various reproductive indicators for the urban poor and the non-poor. Using data collected in 2099 for all the households followed in the HDSS, we created a proxy variable to measure standard of living that takes into account the presence of durable goods (a refrigerator and a television) in the household, as well as the most expensive mode of transport available in the home[v]. The coefficient attached to each good is derived from a principal components analysis (PCA)[vi]. Based on the scores of the first factor of the PCA (which accounts for 50.4% of the variance), three categories of household were delineated in the HDSS: the poorest, the middle and the wealthiest. The poorest households do not own any of the listed goods[vii]. Since we are interested in the poorest residents in this analysis (and to avoid sparse data in certain strata), we compare the poorest group to the middle and wealthiest groups combined) (Table 1). 738 women interviewed in the health survey in 2010 and 26,465 women under surveillance between 2009 and 2011 belonged to a household with sufficient data to calculate their standard of living.

Table 1

Poor women tend to marry[viii] and have children earlier than those in higher wealth groups (Table 2). When comparing the worse-off to the better-off, we therefore contrast a group of women who are more often married and have had more children, to women who are more often single with fewer children. Note that unmarried women experience additional obstacles in accessing contraception in many countries in Sub-Saharan Africa (Bankole and Malarcher 2010). To take these differences in life cycle stages into account, we control the aggregate-level analysis for age and parity, and the individual level analyses for age, marital status and parity.

Poor women tend to have lower educational levels. Women's educational level provides an indication of women’s status within households and of their influence in household decision-making. In the Ouaga HDSS, as elsewhere, this variable is related to reproductive outcomes, independently of the living standard of their households. With thus control the individual level analyses for women's educational level.

African cities are growing rapidly, fuelled by internal migration. The impact of these large migratory movements on contraceptive use and fertility behaviors in African cities has remained largely unexplored (White and al. 2008). In the Ouaga HDSS areas 71% of adults ages 15 and over were not born in Ouagadougou (Rossier et al. 2013b). The poor are more likely to be migrants than the wealthy, and since the people who migrate to Ouagadougou often come from the surrounding rural areas populated by the Mossi ethnic group, the poor are more likely to be Mossi. The poor in our study are also more often Muslim. We control for these other background variables in the individual-level analyses.

Table 2

We use a series of stepwise logistic and linear regressions to measure the effect of wealth on three dependent variables: 1) the desire to avoid a pregnancy at the time of the survey; 2) the use of modern contraception when in need; and 3) the desired number of children. Model 1 measures the relationship between household wealth and the dependent variable, Model 2 tests how the relation is modified by adding women's age, parity and marital status, and Model 3 includes the other background variables (women's education, religion, ethnicity and place of birth). Reproductive indicators recorded in the health survey in 2010 are linked to socioeconomic indicators collected in 2009. Fertility rates over the 2009-2011 period are calculated allowing covariates to change with time.

Results

Lower use of contraception, higher fertility

Data from the Ouaga HDSS 2010 reproductive health survey confirm that poorer women who ever had sex, are not pregnant and do not want a birth in the next two years are less likely to use modern contraception than their less-poor counterparts (Table 3, line 3). Poor women in need of family planning also use modern contraception less (22.0%) than better-off women (38.8%), controlling for parity. As expected, low contraceptive coverage is correlated with higher fertility rates among the disadvantaged in Ouagadougou. The total fertility rate (TFR)

varies according to the household wealth index (Table 3, line 4), ranging from 3.6 children among poor women to 3.0 among the non-poor.

Table 3

Given the specific barriers to contraceptive use among the unmarried, it is not surprising that marital status is the factor most strongly related to the use of modern contraception for women (Table 4). But the difference between poor and richer women in terms of modern contraceptive use remains after controlling for women's marital status. Once other variables are controlled for, women with more children or who are older are not more likely to use modern contraception. As expected, women's level of education is positively correlated to contraceptive use. On the other hand, migrant women are less likely to use a modern method when seeking to avoid a pregnancy, all else being constant. Additional analyses show that migrant women are more likely to use traditional methods (prolonged abstinence and breastfeeding) than other groups are. Altogether, the urban poor remain disadvantaged in terms of modern contraceptive use, even after controlling for women's education and migrant status.

Table 4

Conflicted fertility preferences: "The one God sends to save you"

One reason may help explain the low uptake of contraception of poor women: enduring desires for large families. However, only a minority (five) of the 54 poor household heads interviewed in 2011 and whose response we analyzed categorically opposed the idea of limiting and family planning. These respondents (three Muslims and two Christians) often mentioned God when explaining why they did not support family planning. Noaga, for example, a 49 year old man from the Nonghin neighborhood with four children, explains that "God will not let you take on more than you're able…If you had a lot [of children] all you have to do is pray to God, and he will guide you and help you."

All other respondents, regardless of religion or migrant status, cited the increasing costs of raising a family in the city as a major problem. Commonly cited difficulties include not only

the cost of education (as prompted by the question), but also the high costs of providing food and basic health care to children. Reyim, a 31 year old man from the Nioko 2 neighborhood with two children sums up this argument: "I've already explained to you the limits of my financial resources. If I have five or six children, what can prove that hunger will not kill them? What can prove that I will be able to send them to school? Even if no one tells me so, I have to limit the number of children."

Most of these respondents adhere to the idea of limitation and support family planning. For example, Seydou, a man who lives in Nioko 2 (age unknown, 3 children) says that if "at under 40 years old, you have up to nine children, you are looking for your own problems… Fewer children mean fewer problems and I would advise those who don't yet have three or four to stop there."

Women's responses were generally similar to men's, but one theme was particular to women: concerns about maternal and child health. Many of the women who support family planning explicitly raised the health of the mother and child as an additional important justification. Awa, for example, says that "family planning can help you to save money and stay healthy, so if you space three years, it's a good thing" (lives in Tanghin, unspecified age, never went to school, 2 children).

However, the same data show that many urban poor still perceive large families as beneficial, despite fully acknowledging the high costs of children. Some heads of household interviewed in 2011 expressed this feeling without being able to fully articulate why. For example, Jean (lives in Kilwin, 41 years, never went to school, 8 children) grasps the link between poverty and large families, saying, "As soon as the number of children passes five, it's not easy." Just a few minutes later in the interview, however, he reported that he would like to have "100 children…I know the importance of having a lot of kids," though he did not explain exactly what that importance was.

In Burkinabé society, a financially successful child is seen as the savior of the whole family, expected to financially support his/her parents, siblings, and often even the extended family. This vision is apparent in Ophelie's (female, 40 years old from the Kilwin neighborhood, 2 children) account of the difficulty of rearing a family in Ouagadougou today: "Before, they said that each child came with its own luck, but today, children come with absolutely nothing. There are questions of health, and if you have five or six children without a good job, how are you going to feed them? … (But) if parents are able to support their children until they get a

good job, everything becomes easy. That child will not succeed without coming back to help his or her parents."

Some poor couples choose to limit their family size in order to invest heavily in the education and well-being of just a few children as a means of maximizing their chances for such success. But in a context so ripe with uncertainty, where the best laid plans often go awry, many poor couples adopt the converse strategy to maximize the chance that one of their children will succeed: diversify. These couples have more children in the hopes that at least one of them will succeed, often citing the hand of God. For example, Joséphine explained, "Ha! A poor person can, by the grace of God, escape poverty and become rich. Yes, it's God's affair. If God decides that you are not going to remain in your poverty, he can make it so one of the children clambers up to another level, to improve the standard of living for the family" (woman, Kilwin, 47 years, 5 children). Despite the costs of raising children, these respondents want to have enough to maximize the chances that at least one will lift them out of poverty. Omar (Nonghin, 38 years, never went to school, 3 children) refers to this poverty alleviation strategy in his vivid defense of unrestrained childbearing, proclaiming, "When you space your children using a [modern] method, it's possible that you're skipping over the one that God sends to save you, and he's not born, you see!" The fertility preferences of respondents torn between the costs of children and the benefits of large families can be described as mixed or "conflicted."

Discordance between immediate and long-term demand for fertility regulation

This conflicted fertility preferences found in the qualitative data translate, in the quantitative survey, to a discordance between women's current desire for fertility control, and their desire to limit birth in a life-time perspective. The widespread perception that children are costly to raise, noted in the qualitative interviews, is matched by a high current demand for birth control among the poor women of the Ouaga HDSS interviewed in the reproductive health survey in 2010. Altogether, 58.7% of poor women ages 15 to 49 in our sample wanted to avoid a pregnancy at the time of the survey (among women who ever had sexual relations, are not pregnant and do not want a child in the next two years). This number is higher than for richer women, among whom 52.3% wanted to avoid a pregnancy at the time of the survey (controlling for parity), although the difference is not statistically significant (Table 3, line 2).

Older women and women with more children were more likely to express a need for birth control (Table 5). This explains why poorer women were more likely to want to avoid a birth in the next two years in the absolute (without controlling for women's stage in the life cycle). However, the multivariate analysis shows that, after controlling for marital status, age and parity, poorer women have a similar demand for birth control as the better-off. Background variables such as women's education religion, ethnicity and place of birth are not related to women's current wish to avoid a pregnancy, everything else remaining constant.

Table 5

By contrast, the valuing of large families documented in the qualitative interviews find its expression in the quantitative survey in the question on the total number of children desired. Poor women on average still report a higher desired number of children, after controlling for age (Table 3, line 1). The average desired number of children of poor women is 4.6 compared to almost 3.9 for better-off women.

This differential may be explained to some extent by the fact that disadvantaged women are older and more often married, and more often Muslim -- all variables correlated to the desired number of children, all else being constant (Table 6). However, worse-off city dwellers still want more children, even after controlling for other socio-demographic characteristics.

Table 6

Obstacles to family planning service utilization

The conventional explanations of this high level of unmet need for family planning among the urban poor focus on obstacles to family planning services. Data collected in the city's health centers in 2012 confirm that poor women living in the Ouagadougou HDSS encounter many difficulties in their attempt to access and contraceptive methods. The interviews first reveal a low level of detailed knowledge about contraception and a relatively widespread fear of side effects, including permanent infertility. One male participant typified the prevailing views, stating: "Me, I learned that after contraceptive use, you can try to have a child in vain. You

see, sometimes it brings more problems than good. Contraception is a good thing, but it should be used cautiously" (Eric, 32 years old, primary education, 2 children).

Current family planning delivery practices can partly explain fears of side effects. In the health centers serving the Ouaga HDSS areas, our observations revealed that women are not counseled on the full range of contraceptive options. Typically, upon entering the consultation room, the provider asked the client what method she wanted, and proceeded to prescribe it. Women's past contraceptive history is neither explored nor addressed, nor are women's contraceptive knowledge and concerns. The overall consultation time is very short. The scarcity of information provided by health staff is likely to more deeply affect uneducated women who have fewer alternative learning opportunities and are less knowledgeable about the biology of reproduction.

Financial costs are another considerable obstacle to contraceptive use, observed among the poorest respondents. For example, Zalissa (30 years old, primary education, 4 children) reported wanting to space after her most recent child. In the past, she used condoms to space, but found that this method creates conflict with her husband, who does not like it. Zalissa would like to use the implant after seeing an advertisement on television. When the interviewer asked her why she did not get this method, she explained, "I do not have the money in hand, that is why I did not go."

Though contraceptive commodities are subsidized, women consistently have to pay for ancillary items such as gloves, health booklets, disposable speculums, etc. In a variety of situations, the medical protocols in place further condition access to contraception on costly tests. The prices vary from one center to the next, but on average women end up paying between 1500 FCFA (2.30 Euros) and 3500 FCFA (5.30 Euros) for first time method provision, depending on the method and the center. This might not seem like very much, but can be prohibitive for poor families.

A final common obstacle to contraceptive uptake is men's opposition to their partners' desire to practice contraception. Men oppose contraception for a variety of reasons: fear of side effects, wanting more children, believing it is God's job to plan families, fearing their wives' infidelity or several of these reasons at once. Irène (29 years old, primary level, 4 children), explains her husband's reaction after she took the injectable and had stomach aches, "My husband told me that if the products did not work for me, I should drop them and have children like other women. That when women act like that, their husbands leave them. That the reason I do not want to have children is to be able to do silly things [have sexual affairs]."

Other men do not explicitly oppose contraception, but believe the responsibility to avoid pregnancy is the woman's, and therefore do not actively support their wives in that enterprise. Since gender relations are more equal when women are more highly educated, this obstacle to family planning is especially salient for the poorest, who are often less educated.

Discussion

The survey undertaken in the Ouaga HDSS indicates that poor women have a lower prevalence of modern methods, and higher fertility, as expected from the DHS-based analysis of intra-urban differences in reproductive behaviors conducted by Ezeh et al. (2010). In-depth interviews with poor household heads living in the Ouaga HDSS revealed these respondents' concern for the costs of children and their desire to limit, as well as a lingering desire for large families, as did other qualitative enquires in African cities (Smith 2004, Agadjanian 2005, Johnson-Hanks 2007, Romaniuk 2011). We also found, in a qualitative study in the health centers serving the area, that poor women encounter many difficulties in accessing contraceptive services, similar to those documented in a vast literature on the topic (Ezeh et al. 2010, Campbell et al. 2006). Taken together, these data show that, among poor African city dwellers, obstacles to family planning services seem to interact with conflicted fertility desires to generate relatively low recourse to contraception.

These conclusions support the theories advanced both by Pritchett and by Bongaarts. But the key to truly reconciling these disparate viewpoints lies in the quantitative component of our analysis. Given their higher number of children, we would have expected poor women to have larger ideal family sizes (which is the case), and to be more likely to desire a child at the time of the survey (which is not the case). Our survey indicates that, while poorer women are as likely to want to avoid a pregnancy right now compared to wealthier women, they also want more children altogether than more privileged women. Poor respondents' immediate concern with the cost of child-rearing seems to express itself in their *current* fertility intentions (the indicator used to compute unmet need for family planning), while their *life-long* desired family size seems to reflect their longer-term views on the benefits of having enough offspring to favor the success of at least of one child. In other words, current motivations to avoid pregnancies and desired overall family sizes reflect two quite different dimensions of women's conflicted attitudes towards fertility. By taking current desires to avoid a pregnancy

as the sole indicator of preferences for fertility regulation, one overstates the need for family planning, as do current measures of unmet need, and as did Bongaarts in the classic debate. Reversely, ideal family sizes probably understate the need for limitation, as Pritchett may well have done.

By treating women's self-reported desires to avoid a pregnancy at their face value, attention is directed away from women's complex motivations and desires, an onwards to the obstacles to family planning which lie outside of women and which can be improved by programs: costs, provider barriers, and the like. The importance of obstacles to family planning services, while real, is therefore overstated, and women's and couples' responsibility in failing to overcome these obstacles is understated. To give a point of comparison, accessing all maternal and child health services is challenging in Sub Saharan Africa, but poor women and couples do a great job, at least in Ouagadougou, at delivering in hospitals and at vaccinating their children (Soura et al. 2013, Rossier et al. 2013). To go one step further, some of what has been categorized as obstacles to family planning services (for example fear of side effects, husband's opposition) may be in fact better grasped as the expression of weakly held motivations to avoid pregnancies.

In post-transitional, high income countries a number of studies have deconstructed the notion of "fertility intention" and "pregnancy planning" over the last two decades (Barrett and Wellings 2002, Luker 1996, 1999, Santelli et al. 2003, Speizer et al. 2004, Bernardi et al. forthcoming). Qualitative studies have been especially useful in tracking ambivalence in childbearing intentions. In the context of highly industrialized countries, women and couples typically have to juggle between their "competing preferences" for work and a family. Under these conflicting pressures to childbearing, individuals often exhibit contradictory discourses and behaviors when it comes to pregnancy planning, including in survey answers (see Trussell et al. 1999).

Ilene Speizer, in her pioneering 2006 work, has shown that fertility intentions in Sub-Saharan Africa may show similar flexibility, representing similarly conflicting pressures. Using DHS data from 1998-99, she found that, among Burkinabe women who reported wanting to delay childbearing for two years or more or wanting to limit, 26.5% said that a pregnancy in the next few weeks would be a small problem or no problem at all. This high proportion was found in other Sub-Saharan African countries as well, such as Ghana (21.6%) and Kenya (42.9%).

Spiezer (2006) uses the term "ambivalent" to describe this phenomenon, while other authors have described it as "uncertain" (Fisher 2000, Johnson Hanks 2007). We are choosing to dub what is described in this paper “conflicted” fertility preferences. We like the term "conflicted" (Voas 2003) (like the terms "contradictions" in Smith 2004, or "tensions" in Bajos et al. 2013), because it refers more explicitly to the social roots of the phenomenon. Among poor populations at the beginning of the fertility transition, the contradictions observed lie in socially shared constraints and ideas about childbearing, as much as in individual cognitive constructions. Social contexts ripe with contradicting imperatives do not necessarily translate into fuzzy individual desires or an inability to act. Rather, what seems to be most important is the individual and groups capacity to come up with compromises, that is, with practices which satisfy contradictory preferences. In the context of South Africa, a notable lengthening of birth intervals using contraception has been noted (Timaeus and Moultrie 2008). Very long birth intervals could be a compromise between the simultaneously high and low fertility aspirations of African couples. This way to push into the fertility transition could be a way for couples to take the costs of childbearing into account (they do have fewer children at the end), without spending too many years having to think there are done with childbearing altogether.

Conclusion

These results point to the importance of conflicted fertility preferences at the start of the fertility transition in Sub-Saharan Africa, and to the implications for measuring and understanding unmet need. Future research should explore quantitative measures of the firmness of current desires to avoid pregnancies, with existing and new data. Fears of side effects, partner opposition, contraceptive discontinuation or use of less effective methods could all be expressions of conflicted fertility preferences, and new data and analyses are needed to study these phenomena through this lens.

The recognition of the weakness of much of the current demand for birth control measured in Sub-Saharan Africa has important programmatic implications. Speizer (2006) argues that one strategic response for family planning programs is to focus on the subset of women with firm fertility intentions. Other responses are to improve the quality of care and counselling, and to deploy communication strategies to strengthen the demand for fertility regulation in the community at-large (Bongaarts et al. 2012).

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Table 1: Distribution of households to which belong the 758 women surveyed in 2010 by standard of living and goods in possession, Ouagadougou HDSS

Goods in possession	Poor	Non Poor
Refrigerator	0.0%	16.4%
Television	0.0%	62.1%
Mode of transportation		
On foot or by bicycle	100%	9.1%
Motor-Scooter	0.0%	84.9%
Car	0.0%	6.0%
Number of households (n and %)	230 43.5%	298 56.5%

Table 2: Social and demographic characteristics of women according to their household wealth, Ouagadougou HDSS

	All observed women 15 to 49, 2009-2011			Women ages 15 to 49, health survey sample, 2010		
Indicators	**Poor**	**Non Poor**	**All**	**Poor**	**Non Poor**	**All**
Proportion with no education	60.0%	36.4%	45.2%	63.7%	39.6%	48.8%
Proportion born in rural areas	54.8%	40.2%	45.7%	55.8%	40.6%	46.2%
Proportion Muslim	64.2%	59.9%	61.5%	63.5%	43.0%	40.6%
Proportion Mossi	93.1%	87.6%	89.7%	93.0%	86.6%	88.9%
Proportion married	68.7%	59.7%	63.1%	77.4%	66.9%	70.8%
Average age	26.5	25.6	26.0	27.1	27.7	27.5
Average parity	2.2	1.7	1.9	2.6	2.1	2.3
Total women (% and n)	37.4% 9885	62.7% 16580	100.0% 26465	37.0% 273	63.0% 465	100.0% 738

Table 3: Desired number of children, desire to avoid a pregnancy, use of contraception when in need according to household wealth, women 15-49, Ouagadougou HDSS

	Poor	Non Poor	All
Health Survey 2010			
Average desired number of children+	4.6 (4.03-5.07)	3.9 (3.51 - 4.29)	4.2 (4.02 - 4.30)
Proportion wanting to avoid pregnancy at survey*	58.7% (50.81% - 65.85%)	52.3% (46.53% - 57.66%)	55.8% (52.07% - 59.54%)
Proportion using modern contraception among those wanting to avoid a pregnancy*	22.0% (14.24% - 32.48%)	38.8% (30.46% - 47.81%)	32.8% (28.24% -37.7%)
Total (n)	273	465	738
All women under surveillance 2009-2011			
TFR	3.6	3.0	3.1
Total (n)	9885	16580	26465

+ standardized by age * standardized by parity. 95% confidence intervals.

Table 4: Odds ratio of modern contraception use when in need, women 15-49, Ouagadougou HDSS Health Survey 2010

Variables	Model 1	Model 2	Model 3
Household wealth (ref: non-poor)	0.44**	0.45**	0.52**
Age (ref: 15-19)		1.00	1.00
20-24		0.73	0.98
25-29		0.80	0.75
30-34		1.17	1.16
35-39		0.91	0.76
40-44		0.77	0.72
45-49		1.03	0.88
Marital status (ref: non married)		3.47***	4.20***
Parity		0.87*	0.92
Women's education (ref: no education)			1.63*
Women's place of birth (ref:outside of Ouagadougou)			2.10**
Ethnicity (ref: Mossi)			1.27
Religion (ref: Muslim)			1.13
Log likelihood	-244.52	-233.57	-212.87
LR chi2	13.21	29.68	40.39
P.value (chi2)	0.00	0.00	0.00

P-Value: *** <0.001; ** < 0.05; * < 0.10

Table 5: Odds ratio of wishing to avoid a pregnancy, women 15-49, Ouagadougou HDSS Health Survey 2010

Variables	Model 1	Model 2	Model 3
Household wealth (ref: non- poor)	1.37*	1.20	1.20
Age (continuous)		1.04**	1.04**
Marital status (ref: non married)		0.82	0.79
Parity		1.62***	1.61***
Women's education (ref: no education)			0.98
Women's place of birth (ref. not in Ouaga)			0.98
Ethnicity (ref: Mossi)			0.76
Religion (ref: Muslim)			1.05
Log likelihood	-506.88	-414.85	-370.38
LR chi2	3.77	173.00	152.40
P.value (chi2)	0.05	0.00	0.00

P-Value: *** <0.001; ** < 0.05; * < 0.10

Table 6: Linear regression coefficients of the desired number of children, women 15-49, Ouagadougou HDSS Health Survey 2010

Variables	Model 1	Model 2	Model 3
Household wealth (ref: non- poor)	2.76***	0.50***	0.60***
Age (continuous)		0.06***	0.08***
Marital status (ref: non married)		0.98***	1.11***
Women's education (ref: no education)			-0.07
Women's place of birth (ref. not in Ouaga)			0.01
Ethnicity (ref: Mossi)			-0.17
Religion (ref: Muslim)			-0.34**
R^2	0.78	0.87	0.87
Fisher	2405.31	1468.65	633.17
P.value (Fisher)	0.00	0.00	0.00

P-Value: *** <0.001; ** < 0.05; * < 0.10

[i] 91% of the inhabitants of the Ouaga HDSS were Mossi in 2009. Non-Mossi people usually speak either Mooré (the langage of the Mossi) or French (the official national language taught in schools).

[ii] The question was: "How many (more) children do you want altogether?" Answers such as "It depends on God" were classified as "Do Not Know". "DNK" answers (7.05% of all women) were treating as missing values. By adding the number of children women still want to women's number of existing children to obtain a "desired number of children," we assume that all past children are desired (either wanted at the time or wanted later). In the Ouaga HDSS areas between 2008-2010, 98.5% of the births that occurred under surveillance were desired, 86.5% at the time of conception and 12% later. Moreover, among women ages 15 to 49 who responded to the health survey, 76% still want children in the future, so this "desired number of children" largely reflects a target family size. When calculated for all women ages 15 to 49, this "desired number of children" is 4.2. The "ideal number of children" for women 15-49 in Ouagadougou according to the 2010 DHS was 4.1 children. The numbers are close, although the 2010 DHS question was asked differently: "If you could [come back to the time when you did not have children and] choose the exact number of children to have in your life, how many would you have liked to have?"

[iii] Different from the DHS definition, where amenorrheic and pregnant women pregnant are included in the calculations: those with an unintended pregnancy or who had a last unintended birth are counted as having an unmet need.

[iv] The question on current contraceptive use was phrased using 2003 DHS wording: "Right now, are you doing something or are you using a method to avoid becoming pregnant?" The proportion of married women using a modern method in the HDSS 2010 survey (32.0%) is close to the proportion found by the 2010 DHS for Ouagadougou (32.6%).

[v] The most expensive mode of transportation distinguishes households in Ouagadougou better than the mere presence of bikes, motorcycles, cars. A car-owning household may not find it necessary to purchase a bicycle or motorcycle (even if the means are available) if this single mode of transportation covers the household's needs.

[vi] For the purposes of the PCA, the responses from the three variables (possession of refrigerator; possession of television, main mode of transport) were dichotomized as advised by Bry (1995) for the categorical variables, so that we have five dichotomous variables to account for (refrigerator, television, car as the most expensive mode of transport, motor-scooter as the most expensive mode of transport, bicycle or foot).

[vii] When applying the same coefficients to the data from the national Comprehensive Survey on Household Life Conditions in 2007, we found that 24% of households in Ouagadougou as a whole are poor, which compares well with the figure of 25.2% of Ouagalese households being below the poverty line (INSD 2009).

[viii] A woman is recorded as "in union" when cohabiting with her partner or having performed at least one marriage ceremony (customary, religious or civil).