Why Do Young, Unmarried Women Who Do Not Want to Get Pregnant Contracept Inconsistently? Mixed-method Evidence for the Role of Efficacy

Paula England¹, Mónica L. Caudillo¹, Krystale Littlejohn², Brooke Conroy Bass³, and Joanna Reed⁴

Abstract
Many sexually active single women do not want to get pregnant but use contraception inconsistently. To explore why, the authors conducted in-depth interviews with 99 unmarried women in their 20s, asking about contraception with each of their sexual partners. The authors present quantitative and qualitative evidence that contraceptive inconsistency sometimes results from having too little efficacy, a concept that includes the subconcepts of planfulness, self-regulation, assertiveness, and believing that one can affect one’s goals. The authors discuss how sociologists should think about personal characteristics such as low efficacy that may stem from disadvantaged origins and affect desired outcomes.

Keywords
contraception, pregnancy, efficacy, self-regulation, culture, sexuality

Virtually all sexually active, single American women in their 20s have used contraception, but many contracept inconsistently. In this study, we ask why some young, unmarried women in their 20s are inconsistent with contraception even when they do not want to get pregnant. We provide evidence that one important factor is a lack of efficacy, the ability to undertake the behaviors necessary to meet one’s goals. Many women intend to contracept but are not able to be consistent.

Of course, sometimes women do not contracept because they want to have a baby, at least ambivalently. Indeed, a consistent finding in quantitative demographic research is that fertility intentions are strong predictors of contraception and fertility (Hayford and Agadjanian 2012; Moreau et al. 2013; Schoen et al. 1999; Yoo, Guzzo, and Hayford 2014). Qualitative evidence shows this as well (Edin and Kefalas 2005).

Although some pregnancies among young, unmarried women are intended, many are not. In surveys, women have been asked, after a birth, whether at the time they conceived they were trying to get pregnant right then; those who said no were then classified as unintended. This approach leads to the conclusion that, in recent years, 74 percent of pregnancies among unmarried American women were unintended (Finer and Henshaw 2006:93). Even with a generous correction for cases in which this measurement scheme misleadingly calls ambivalently intended pregnancies unintended, the fact that so many pregnancies are unintended suggests the need for an explanation other than wanting a baby to explain inconsistent contraception.

Our goal in this study is to contribute to explaining the behavior—inconsistent contraception—that can lead to unintended pregnancies. We recognize that many factors are operative but focus on one factor: efficacy. It has been offered previously as a speculative explanation for inconsistent contraception (Edin et al. 2007; England, McClintock, and Shafer 2011; Musick et al. 2009), but there has been little systematic assessment of its role in contraceptive consistency.

¹New York University, New York, NY, USA
²Occidental College, Los Angeles, CA, USA
³Independent Scholar, Portland, OR, USA
⁴University of California, Berkeley, CA, USA

Corresponding Author:
Paula England, New York University, 295 Lafayette Street, Floor 4, New York, NY 10012, USA.
Email: pengland@nyu.edu

Creative Commons CC-BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 3.0 License (http://creativecommons.org/licenses/by-nc/3.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (https://us.sagepub.com/en-us/nam/open-access-at-sage).
By efficacy, we mean the ability to organize one’s behavior in the service of one’s goals. We use efficacy as an umbrella concept that includes several related subconcepts: (1) being planful enough to organize action in the service of a goal, (2) having sufficient self-regulation to “make oneself” do things that are onerous now but are necessary to realize a goal, (3) being assertive with others when it is necessary to realize a goal, and (4) believing that one can take action and that it is likely to bring about a desired goal. All these subconcepts of efficacy have in common that they refer to personal characteristics that make individuals better able to achieve their own goals. We provide qualitative and quantitative evidence that some women want to avoid having a child enough that they think it is worthwhile to contracept, yet they lack the efficacy to do what is needed. For example, they may not have the planfulness and self-regulation needed to make medical appointments and get prescriptions, take pills daily, and repeat the cycle of appointment and purchase before their pills run out; if they are not on hormonal contraception, they may not be assertive with male partners about wearing condoms; or they may doubt that they will really be able to succeed at consistent contraception and avoid pregnancy and thus stop trying.

Past Research on Determinants of Consistency of Contraception

More than 99 percent of women of 15 to 44 years of age who have had sex with one or more men have used some contraceptive method (Mosher and Jones 2010:9). However, Frost, Singh, and Finer (2007) found that 8 percent of sexually active women not intending a pregnancy had used no contraception the previous year, and another 15 percent contracepted inconsistently enough to have a gap of nonuse lasting at least a month.

Research on which women contracept less consistently has focused on demographic or socioeconomic correlates. Frost et al. (2007) found that among women not intending a pregnancy and using some method during the previous year, the lower women’s education, the more likely they were to have a gap in their use during the year. When surveys ask women whether their conceptions were intended or unintended, much higher proportions are found to be unintended for blacks than whites (with Hispanics intermediate) and for women with less education or lower income (Finer and Zolna 2011; Musick et al. 2009).

Effects of Efficacy on Contraceptive Consistency

We conceptualize efficacy as including planfulness, self-regulation, assertiveness, and belief in one’s ability to carry out behaviors that will help realize one’s goals. There is little research on how any of these aspects of efficacy affects contraception. The little research there is focuses on the last aspect: believing in one’s own control. Young women who believe more strongly in their own ability to contracept consistently are more likely to do so, as are those who see themselves to have substantial personal control (Levinson 1995; Longmore et al. 2003; Pearson 2006). Young women with less of a sense of personal control are more likely to get pregnant in their teens or early 20s (Lewis, Ross, and Mirowsky 1999). One qualitative study of community college students shows examples of the assertiveness aspect of efficacy aiding contraception; when young women were not using hormonal methods of contraception, assertiveness with partners was sometimes necessary for consistent contraception, as some men resist condom use, because they prefer sexual sensation without condoms, want to avoid the hassle of their use, or, less often, want a child (Reed et al. 2014). We know of no studies of whether other aspects of efficacy—planfulness and self-regulation—affect consistency of contraception.

Other Factors Affecting Contraceptive Consistency

As mentioned above, sometimes young single women do not contracept because they want a baby (Moreau et al. 2013). Unmarried women contracept less consistently in relationships they report to be more serious (Manlove, Ryan, and Franzetta 2003), or in which they are cohabiting (Frost et al. 2007), perhaps because women or couples are more likely to want a pregnancy in such relationships. Yet, after adjusting for age and number of children, cohabiters reported more inconsistent use than married women (Frost et al. 2007), despite the fact that marriages are generally more committed. Moreover, in a qualitative study of working-class cohabiters, those serious enough to see a future together were more rather than less consistent in their contraceptive use (Sassler, Miller, and Favinger 2013). Unmarried women contracept less consistently in relationships they report to be more serious (Manlove, Ryan, and Franzetta 2003), or in which they are cohabiting (Frost et al. 2007), perhaps because women or couples are more likely to want a pregnancy in such relationships. Yet, after adjusting for age and number of children, cohabiters reported more inconsistent use than married women (Frost et al. 2007), despite the fact that marriages are generally more committed. Moreover, in a qualitative study of working-class cohabiters, those serious enough to see a future together were more rather than less consistent in their contraceptive use (Sassler, Miller, and Favinger 2013). Thus, cohabitation may lead to inconsistent contraception simply because it is harder to be consistent for a long than a short time.

The finding that those with low socioeconomic status contracept less consistently suggests that not having enough money to buy contraception might impede use. In fact, however, costs have been found to be a relatively minor barrier (Edin et al. 2007; Silverman, Torres, and Forrest 1987), although cost is a significant barrier to abortion (Boonstra et al. 2006).

Many women quit hormonal contraception because of symptoms, such as moodiness or weight gain, that they believe, correctly or not, to be side effects of contraceptives (Littlejohn 2012, 2013; Mosher and Jones 2010). A further obstacle to consistent use of contraception is misinformation or erroneous reasoning, such as when a woman infers from a few months of unprotected sexual activity during which she did not get pregnant that she is infertile (Chandra et al. 2005; Edin et al. 2007; Kaye, Suellentrop, and Sloup 2009).
Conceptualizing the Role of Efficacy

Sociologists’ and Psychologists’ Concepts of Efficacy

An important line of theory and research by Ross and Mirowsky argues that “learned efficacy” is an important mediator through which education encourages multiple behaviors that enhance health (Mirowsky and Ross 2003; Ross and Mirowsky 2013). The aspect of efficacy they stress is the sense of personal control: believing that one can take actions and that taking them will help achieve one’s goals. Their concept bears some similarity to two constructs from psychologists, Bandura’s (1997) “self-efficacy” and Rotter’s (1966) “locus of control.” Applying this to contraception makes sense, because if one does not believe that one will be able to carry out a contraceptive regime, or believes that fate rather than one’s own contraceptive behavior is the key to whether one gets pregnant, it will seem pointless to undergo the considerable effort of contracepting. We believe that the belief that one can make a difference is important, and we mentioned some research above linking it to contraception, but it is only one part of our concept of efficacy.

Believing you can do something is not sufficient if you cannot actually make yourself do it. Thus, another key ingredient for efficacy is self-regulation, the discipline to make oneself undertake actions that are onerous but necessary for a longer term goal. Mirowsky and Ross (2003) conceptualized efficacy to include perseverance and effort, which are entailed in our notion of self-regulation. Economists generally ignore problems of self-regulation, but an exception is the focus of Heckman and Kautz (2012) on noncognitive “soft skills,” which include the self-discipline to keep working on a task, or to control oneself enough to avoid impulsive behavior that may jeopardize a goal. This is relevant to contraception, as visiting doctors, obtaining contraceptives, and using them are not inherently rewarding to most people but are necessary if one wants to have sex yet avoid pregnancy. Psychologists see such self-regulation as part of “executive function” (Baumeister et al. 2006). Thus, the self-regulation aspect of what we call efficacy has been discussed by sociologists, economists, and psychologists.

We also include assertiveness under our umbrella concept of efficacy because sometimes one needs to assert oneself with another to contracept, as when a woman who does not like hormonal methods needs to persuade her partner to use condoms.

Finally, we include planfulness as part of efficacy because often one needs to think through and plan sequences of behaviors to achieve goals (Clausen 1991). This is important to contraception; for example, a woman needs to make an appointment to get another prescription for birth control long enough before running out of pills that she does not find herself unprotected, and this takes advance planning.

Rational-choice Views of Efficacy

In several senses, the notion that individuals fail to achieve their own desired goals because of lack of efficacy is at odds with economic or other rational-choice theories; yet, in other ways, rational-choice perspectives are compatible with the importance of efficacy.

To most rational-choice theorists, if a woman (or couple) does not contracept, it is because (1) the costs of contraception are too high, (2) the costs (including opportunity costs) of having a child now are low enough, and/or (3) the benefits of having a child now are sufficiently high. Any of these costs or benefits may be pecuniary (about money) or nonpecuniary. For example, the love one anticipates receiving from a child is a nonpecuniary benefit. Costs of contraception are pecuniary, such as the money spent on birth control, as well as nonpecuniary, such as the hassle of carrying out the behavioral regime needed to contracept. Opportunity costs of having a child include the forgone earnings arising from working less for pay after a birth. The earnings reductions may result from periods of nonemployment and from the lower wages one has upon returning to employment because of forgone experience.

How would efficacy enter this formulation? Efficacy could be conceptualized from within economic theory as a type of human capital; Heckman and Kautz (2012), who discussed “noncognitive skills,” and Mirowsky and Ross (2003, chap. 3), who discussed “learned efficacy,” see it this way. In economic theory, people will invest in human capital if it pays to do so.

Rational-choice theorists do not entertain the idea that a person incorrectly believes he or she cannot have an effect on whether a pregnancy occurs, because they assume that individuals can reason well, and if they lack information, they will invest in getting it if the likely payoff makes it worthwhile. The idea that one was not planful enough to organize getting the birth control pill and keep a supply would not arise, because the assumption is that one will make plans if planning is necessary to one’s goals, unless learning to plan or the planning process is so aversive that it drives up the nonpecuniary costs of contraception to the point that it no longer survives a cost/benefit analysis. Similarly, rational-choice theorists assume that one will self-regulate if it is worthwhile; one could cough not contracepting because of a self-regulation problem in economic terms only by saying that learning or engaging in self-regulation is so painful that it makes contraception fail the cost/benefit analysis. A similar argument could be made for assertiveness or planfulness. In all these examples of how economists (or other rational-choice theorists) would countenance the possibility that lack of efficacy impeded contraception, the key point is that people will invest in developing efficacy unless investment in or exercise of efficacy in the service of contraception entails such a large nonpecuniary cost that the goal is no longer worth what it would take to achieve it.
Efficacy and Social Class

Because past research has shown associations among unintended pregnancy, inconsistent contraception, and various measures of class disadvantage, we suspect that an important source of higher or lower levels of efficacy is social class background. Why might class disadvantage affect efficacy? One possibility is that the chaos and uncertainty of life in poverty work against believing one’s own efforts at self-regulation can make a difference. Second, there is evidence that poverty itself erodes self-regulation; experimental evidence from psychology and behavioral economics offered by Mullainathan and Shafir (2013) suggests that scarcity of money leads to an intensive focus on anything that might alleviate that scarcity immediately, using up “bandwidth” that could otherwise be used to bolster one’s self-regulation. Poverty may also have effects through forcing families to live in poor neighborhoods with more crime; a sociologist and psychologist team has shown that exposure to violence, such as witnessing homicides, more common in poor neighborhoods, lowers self-regulation (Sharkey et al. 2012).

Class differences in parenting styles may also create differences in planfulness and self-regulation. Lareau (2002) argued that although parents in all social classes similarly value their children’s happiness and success, they subscribe to different cultural models of parenting. The middle class, she wrote, typically practices “concerted cultivation,” whereas the working and lower classes typically assume a model of “natural growth” that sees less need for intensive parental coaching. To learn the skill of efficacy, young people may need scaffolding, wherein a parent gently but firmly makes them do something they do not want to do, lets them see the result, repeats this many times, and then slowly removes the scaffolding as they learn to do it themselves. One could view class differences in the skill of efficacy as aspects of culture. This implies a notion of culture that is not exclusively about values (Swidler 1986), or as radically separate from the structural constraints emanating from class position (Small, Harding, and Lamont 2010).

Data and Methods

The Sample and Data Collection

Our qualitative and quantitative analyses rely on data from the College and Personal Life Study (CPLS), which entailed 99 in-depth, qualitative interviews of never-married women in their 20s who were attending four postsecondary schools in the northern California Bay Area. Although respondents could be as old as 29 years, 75 percent of our sample was 23 or younger. We chose postsecondary schools as sampling sites because they are a place we could, within the resources we had, recruit women in their early and mid-20s, the ages at which most unintended pregnancies leading to nonmarital births now occur (Hamilton et al. 2014:14).

A goal in our choice of sampling sites was to create substantial variation in socioeconomic privilege and trajectories. One might be concerned that any college sample is disproportionately from privileged backgrounds. This is less true because two of our four sites were community colleges: Laney College in Oakland and Foothill College in Silicon Valley. Community colleges draw disproportionate numbers of students from poor families and from disadvantaged racial-ethnic groups, in part because they are relatively inexpensive and not very selective. They offer preparation leading to General Educational Development exams (providing a substitute for a high school diploma for those who did not finish high school), vocational certificates, and two-year associate of arts degrees, but not bachelor’s degrees. Our sample from these two schools included some women who had not completed high school and some very poor mothers on CALWORKS, California’s version of Temporary Assistance for Needy Families (welfare), because California allows women to receive benefits while going to school rather than requiring that all recipients seek work immediately. The future trajectories of community college students are quite modest because those who enroll in them seldom progress to four-year schools and degrees; one national study showed that more than 80 percent aspired to get a bachelor’s degree, but only 6 percent had done so within five years (U.S. Department of Education 2011, Tables 1-A and 2-A).

We also deliberately sought sampling sites to ensure the inclusion of women with very privileged socioeconomic backgrounds and trajectories. In their early 20s, such women are typically in colleges and universities. Thus, the other half of the sample comprises undergraduate women from two very selective universities, one public and one private: the University of California, Berkeley, and Stanford University. All these women were seeking bachelor’s degrees, and some intended to go further.

To recruit women for interviews, we posted flyers on each campus, promising $50 for an interview. To be eligible, women needed to have had sex with at least one man, be full- or part-time students at the institution, never have been married, and be between the ages of 20 and 29 years. To make sure that we got some women who had had pregnancies, during part of the recruitment period, the flyer also stated that women needed to have been pregnant, specifying “whether or not you had the baby.” Interviews were conducted in 2009, 2010, and 2011. Four of the authors were among the interviewers. Open-ended questions with probes were used to make interviews resemble conversations as much as possible.

Our resources did not allow us to combine a probability sample with the approximately two-hour interview format needed to collect rich, qualitative data, so we certainly cannot claim that our sample is representative of all young, unmarried women in their 20s. However, to allow the reader to gauge how large a problem this is, we present Appendix Table A1, which compares descriptive statistics on several relevant variables between our sample and a sample from the National Survey of Family Growth (NSFG) 2006–2010. We restricted the NSFG sample to unmarried, nonvirgin women...
between 20 and 29 years of age, because these were require-
ments to be in our CPLS sample. We are encouraged by the
similarities, such as the median age at first intercourse (17 in
CPLS and 16 in NSFG) and the total retrospective number of
sexual partners at the time of interview (four in CPLS and
five in NSFG). Among those who had been pregnant, the
percentage of first pregnancies that were unintended is close
as well (87 percent in CPLS and 83 percent in NSFG). Our
data are fairly comparable with the general population of
unmarried, sexually active women along these key variables.
Nonetheless, we caution that the data are not a representa-
tive sample.

The compelling advantage of our data is that they are, as
far as we know, unique in their coverage of a complete sex-
ual history, from the first sexual partner to the most recent,
for each woman, with rich qualitative detail on numerous
aspects of each partnership, including length, whether they
ever cohabited, whether she ever wanted to get pregnant
while she was seeing him, what contraception was used, and
reasons for quitting contraception. More important, our data
set records rich narratives about respondents’ behaviors in
many arenas of everyday life, as well as the meanings they
attach to their behavior. This allowed us to generate a mea-
sure of personal efficacy for each person. Not even the best
data sets from national probability samples on sexual and
reproductive behavior, such as the NSFG, include compre-
hensive data on efficacy.

Qualitative Data and Analysis

Beginning with her first, for each of the woman’s male sex-
ual partners, we asked about the nature (e.g., whether casual
or serious) and length of the partnership; what contraception
they used and when, and whether contraception was ever dis-
continued and why; problems obtaining contraception; any
discussions or disagreements about contraceptive use or
pregnancy; whether she ever wanted to have a baby with him
during the partnership; circumstances surrounding the preg-
nancy if one occurred, including decisions about having an
abortion or keeping the baby; and how the partnership ended
(if it did). Other topics included her daily routine, living situa-
tion, future plans (for education, family, and career), and
feelings about abortion. Preceding the interview, women
filled out a short demographic information sheet. Interview
transcripts were qualitatively coded into fields of text for
each of many topics using NVivo software.

We attempted to assess women’s overall efficacy in a
number of ways, all of which target how well she was able to
carry out the needed behaviors to reach her own goals. We
combed narratives on many topics for evidence of any of the
components of efficacy and created a template for each
woman with relevant quotations. For example, we looked to
see if women’s stories featured their own assertiveness or
lack thereof in any arena, whether they had problems with
self-regulation such as engaging in risky violence because
they lost their tempers, whether procrastination of tasks (e.g.,
schoolwork) kept them from achieving their goals, whether
they evinced fatalism or a “can-do” attitude about being able
to carry out their intentions and get results, and whether they
reported that alcohol or drug use led them to be unable to
control their own behavior. We also assessed each respon-
dent’s contraceptive efficacy, asking about problems they
had following through with various methods. When they
reported not using contraception with partners with whom
they said they had not wanted to get pregnant, being careful
to not sound critical, we asked why they had not contracepted
and what they were thinking about the possibility of getting
pregnant.

Our qualitative analysis focuses on our claims about effi-
cacy. We compare the contraceptive consistency of women
with higher or lower efficacy, using quotations to illustrate
what led us to conclusions about the woman’s level of effi-
cacy. We also rely on their stories to illustrate how efficacy
appears to affect contraceptive consistency. All names used
are pseudonyms.

Quantitative Data and Analyses

Data Set. From the qualitative data, we created a quantitative
data set that allowed us to estimate models predicting contra-
ceptive consistency. Working from the textual fields in
NVivo, we created numeric codes for variables for each part-
ner-respondent partnership. The data set has as many obser-
ations for each woman as the number of her male sexual
partners. (A few women had had sex with both men and
women, but their partnerships with women are excluded
from the quantitative data set because they do not entail a
need for contraception to avoid pregnancy.) The result was
a data set with 551 observations, one for every partnership,
clustered around 99 respondents. The data also allowed us to
create numeric codes at the person level from either the
demographic information sheet respondents filled out or the
NVivo textual fields.

Descriptive statistics on the sample of 99 women are pre-
sented in Table 1; we present means for variables of interest
for the whole sample, as well as for the subsample of those
who were always consistent with all partners and for those
who were not. In Table 2, we present descriptive statistics
for the partnership-level data, which are used for all our regres-
sion analyses except one sensitivity test. Many of our vari-
bles at both the individual and partnership levels are
dichotomies; for these, means are equivalent to the propor-
tion of cases in the 1 (rather than 0) category. Of the 551
partnerships, the respondents wanted to get pregnant, even
ambivalently, at the time of only 22 of the partnerships (4
percent). Because of our interest in whether efficacy affects
consistency in cases in which women do not want a preg-
nancy, we excluded these 22 partnerships from our regres-
sion analyses. Of the remaining 529 partnerships, information
on whether they contracepted consistently is missing for 3
percent, so Table 2 reports descriptive statistics only for the 512 partnerships during which women did not want to get pregnant and for which the dependent variable, contraceptive consistency, is available.

**Measures: Dependent Variable.** Our dependent variable is contraceptive consistency with each given partner. This was coded by reading the answers to the very detailed questions women were asked about their contraception with each male partner and assessing whether they contracepted every time they had sex with these partners. Strategies counted as contraception included anything listed on the Planned Parenthood Web site as contraception: condoms, hormonal methods (the “shot,” “patch,” or birth control pill), intrauterine devices (IUDs), diaphragms, rhythm (fertility awareness), Plan B (the morning-after pill), or pullout (respondents’ term for withdrawal). We called a respondent consistent with a given partner if every act of intercourse was protected by one of the means of contraception above actually being used. For example, having forgotten to take pills sometime with a given partner would lead to a woman’s being coded as inconsistent with that partner in our measure, unless she was also using condoms or pullout at the time or used Plan B following intercourse. After creating the indicator variable for consistency with each partner, we also created a respondent-level measure, an indicator variable revealing if the woman contracepted every time with every partner. As Table 1 shows, 45 percent of the women in our sample did this. No one in the sample had never contracepted.

**Measures: Independent Variable.** Our independent variable of major interest is efficacy, measured at the respondent level. For each woman, we produced a quantitative coding of efficacy that was put into a three-category scale of “high,”

---

**Table 1. Descriptive Statistics for Respondent-level Data.**

| Variable                                      | All (Mean) | Consistent with All Partners (Mean) | Ever Inconsistent with Any Partner (Mean) |
|-----------------------------------------------|------------|-------------------------------------|------------------------------------------|
| Consistent with all partners                  | 0.45       | 0.40                                | 0.44                                     |
| Medium efficacy (conservative measure)        | 0.42       | 0.40                                | 0.42                                     |
| High efficacy (conservative measure)          | 0.22       | 0.40                                | 0.07**                                   |
| Medium efficacy (liberal measure)             | 0.41       | 0.42                                | 0.41                                     |
| High efficacy (liberal measure)               | 0.27       | 0.47                                | 0.11**                                   |
| Black                                          | 0.21       | 0.09                                | 0.31**                                   |
| White                                          | 0.43       | 0.47                                | 0.41                                     |
| Other race                                     | 0.35       | 0.44                                | 0.28**                                   |
| Upper middle class (reference: lower/working) | 0.68       | 0.78                                | 0.59**                                   |
| R’s age at first intercourse                  | 16.89      | 17.43                               | 16.43*                                   |
| R wanted a baby during the                     | 0.15       | 0.04                                | 0.24**                                   |
| partnership with at least one partner         | 0.36       | 0.21                                | 0.43*                                    |
| R wanted a baby with partner in the future    | 0.52       | 0.47                                | 0.56                                     |
| with at least one partner                     | 0.5        | 0.5                                 | 0.5                                       |
| At least one partner opposed condom use       | 0.41       | 0.29                                | 0.52**                                   |
| R cohabited with at least one partner         | 0.36       | 0.22                                | 0.48**                                   |
| Total time in partnerships (months)            | 48.77      | 34.13                               | 60.97**                                  |
| Observations                                  | 99         | 45                                  | 54                                       |

Note. R = respondent. Standard deviations are presented in brackets. Significance levels are for t tests for mean differences between women who were consistent in contraception with all sexual partners and women who were not.

*p < .10, *p < .05, and **p < .01 (two-tailed tests).
“medium,” and “low,” with 22 percent coded high, 42 percent coded medium, and 36 percent coded low (Table 1). We ignored anything about contraceptive efficacy in our conservative version of the variable, which is used in this main analyses. Here the scores were based on any evidence in the transcripts of planfulness, self-regulation, assertiveness, and belief in the ability to take action that affects outcomes, so long as the story illustrating high or low efficacy was not about contraceptive efficacy. For example, it contributed to being coded “high” on efficacy if a woman said that she seldom procrastinated studying and did work well in advance, planned ahead, was assertive with boyfriends or friends about anything other than contraception, or had a “can-do” sense that her actions really could help her achieve her goals. The opposite contributed to a low score. Our data were not rich enough to construct a separate score for each subdimension of efficacy (planfulness, assertiveness, self-regulation, and believing one can affect outcomes) for each respondent. Thus, rather than requiring that a respondent must show evidence of being high on each subdimension to be scored high, we used the preponderance of the available evidence across all subdimensions of efficacy to decide her score. We explicitly ignored contraceptive efficacy in creating this measure to make sure we avoided building the dependent variable (contraceptive consistency) into the measure of efficacy; the measure is thus conservative to our hypothesis of a positive association between efficacy and contraceptive consistency. This contrasts with past research (reviewed above) on how efficacy affects contraception, which measured only the belief aspect of efficacy and which focused on beliefs in the domain of contraception: whether believing one is able to contracept consistently is correlated with doing so. Our interest here is in whether efficacy of several types and in other domains predicts contraceptive consistency. Our procedures are also conservative to our hypothesis in that the first author coded each respondent’s efficacy, but other researchers coded whether women contracepted consistently with each partner.

### Table 2. Descriptive Statistics for Partnership-level Data.

| Variable                                      | Unweighted Mean | Weighted Mean |   |
|-----------------------------------------------|-----------------|---------------|---|
|                                                | Always Consistent in Contraception with This Partner | Ever Inconsistent in Contraception with This Partner | All | Always Consistent in Contraception with This Partner | Ever Inconsistent in Contraception with This Partner |
| Always consistent with this partner           | 0.85            | 0.64          |   |
| [0.36]                                        | [0.48]          |               |   |
| Medium efficacy (conservative measure)        | 0.32            | 0.43          | 0.13 |
| [0.47]                                        | [0.49]          | 0.05*         | [0.33] |
| High efficacy (conservative measure)          | 0.13            | 0.18          | 0.28 |
| [0.35]                                        | [0.39]          | 0.27          | [0.45] |
| Black                                         | 0.28            | 0.27          | 0.42 |
| [0.33]                                        | [0.44]          | 0.42          | [0.49] |
| White                                         | 0.42            | 0.48          | 0.26 |
| [0.49]                                        | [0.44]          | 0.25          | [0.46] |
| Other race                                    | 0.30            | 0.26          | 0.46 |
| [0.46]                                        | [0.44]          | 0.29          | [0.46] |
| Upper middle class (reference: lower/working) | 0.71            | 0.57          | 0.15 |
| [0.45]                                        | [0.5]           | 0.12          | [0.36] |
| R’s age at first intercourse with this partner | 19.14           | 18.11         | 0.15 |
| [2.81]                                        | [2.59]          | 0.12          | [0.36] |
| R wanted a baby with partner in the future only | 0.11            | 0.40          | 0.01 |
| [0.08]                                        | [0.49]          | 0.30***       | [0.32] |
| Partner opposed condom use                    | 0.10            | 0.18          | 0.06 |
| [0.08]                                        | [0.38]          | 0.23          | [0.25] |
| R ever cohabited with partner                 | 0.06            | 0.23          | 9.39 |
| [0.03]                                        | [0.42]          | 21.22**       | [15.07] |
| Partnership length in months                  | 7.15            | 33.53         | 79  |
| [12.38]                                       | [21.35]         | 28.53         | [512] |
| Observations                                  | 512             | 512           | 79  |
|                                                | 433             | 433           |   |

Note. R = respondent. Standard deviations are presented in brackets. Significance levels are for t tests for mean differences between partnerships in which they were always consistent in contraception and other partnerships. Weighted means are weighted proportionate to the length of the partnership in months (such that the average weight is 1).

*p < .10, *p < .05, and **p < .01 (two-tailed tests).
In our alternative, more liberal, measure of efficacy, we let contraceptive efficacy as well as all the noncontraceptive types of efficacy discussed above affect the score. Even in this measure, we attempted not to conflate the independent variable of low efficacy with the dependent variable of whether a woman contracepted consistently. Contraceptive inconsistency is not definitionally built into this measure of efficacy, because it is possible to report a lack of some type of contraceptive efficacy and yet be a consistent contracepter. For example, one might forget to make doctor appointments to get prescriptions for the pill, or to take the pill every day, which would move the woman out of the highest score on this liberal measure, but still use condoms whenever not protected by the pill, thus remaining a perfect contracepter. Our tables show results using only the conservative measure, but a sensitivity test uses the liberal measure.

Measures: Control (Independent) Variables. Controls were selected because they may affect whether one contracepts consistently but may also be exogenous to and associated with efficacy. These are included to move our analysis toward (but certainly not all the way to) an assessment of a causal effect of efficacy. Respondent’s race was taken from the demographic information sheet respondents filled out, categorized into black, white, and other. Most in the last category were Latinas, but it also included a few Asians and two Native Americans. We coded respondents’ social class backgrounds from their answers to questions about how they paid for college, which often revealed much about their parents’ resources, and from stories they told about their upbringing, which often included information about their parents’ occupations and education, whether they were on welfare, and whether they were poor or affluent. We created a dichotomy with lower and working class as the lower category, and middle, upper middle, and upper class as a higher category. Another control is how old the woman was when she first had intercourse with the given partner, which interviewers ascertained for each partner.

We also recorded, for each partner, whether the respondent spontaneously mentioned that, during the partnership, she had wanted a baby with this partner, not then but in the future. Recall, as explained above, that we asked women whether, with each partner, they had ever wanted to get pregnant during the partnership, and such partnerships were excluded from the sample. However, it is possible that even an interest in a future pregnancy with a given partner makes one care less about contraception. If such interest is correlated with efficacy, it could, if not controlled, contribute spuriousness to our estimate of the effect of efficacy; thus one model adds this to the controls described above. We constructed an analogous respondent-level indicator for whether the woman had ever wanted to have a baby in the future (but not during the partnership) with any of her partners; it is used only in a sensitivity test.

Some models also include controls for whether the partner opposed condom use, whether the couple ever cohabited, and the length (in months) of the partnership; all these variables are coded from transcript fields in which questions were asked about these matters.

Quantitative Models Using Partnership-level Data. Because our dependent variable is dichotomous, it is appropriate to use logistic regression to predict consistency in contraceptive use with a given partner. The outcome is a dichotomous indicator variable coded 1 if the respondent always used contraception consistently with this partner. Because partnership observations are not independent within respondents, we use clustered standard errors. The analysis of variance inflation factors for each of the models presented suggests that multicollinearity is not affecting the estimated effect or significance of efficacy.

One model contains the exogenous individual characteristics of social class background and race, as well as the respondent’s age when she started having sex with this partner. The second and third models add other partnership-level controls. These include indicator variables for whether the respondent ever cohabited with this partner and whether she envisioned having a baby in a hypothetical future with this partner (recall that partnerships in which she wanted a baby right then at any time during the partnership were removed from the sample), and the length of the partnership in months (entered in linear, squared, and cubed form to assess a possible nonlinear relationship). All models include the respondent-level measure of efficacy in noncontraceptive matters as the independent variable of major interest. Our hypothesis is that women with higher efficacy contracepted more consistently in their partnerships.

We show results from the three models for both weighted and unweighted regressions, where weights are the length in months of each partnership. Partnerships that lasted only a day or night were coded as .033 of a month. Weighted analysis gives less importance to short partnerships, while unweighted analysis gives every partnership the same importance. Quantitative results from our sensitivity tests (summarized below) are not shown but are available on request.

Results

Quantitative Results

Our quantitative analyses assess how efficacy is associated with the consistency of women’s contraception, under varying controls. Table 3 presents the odds ratios (ORs) from logistic regression models predicting whether the woman contracepted consistently (always) with the partner, using partnerships as units of analysis. It shows ORs for effects of high efficacy (compared with low efficacy, the reference category) that are positive, large, and significant (one of the six at only the .10 level), ranging between 3.19 and 7.68. The models with full controls suggest that women with high efficacy are five to eight times more likely to contracept consistently with any given partner than those with low efficacy. The effect of medium efficacy, although positive in most models, is not significant, which suggests it is the highest level of efficacy that makes a difference in
terms of contraception use. The significance of and magnitude of the effects of high efficacy are striking given the conservative aspect of our test; efficacy was assessed on the basis of a woman’s efficacy in areas other than contraception. The findings thus suggest that individuals with high efficacy in other areas of their life tend to also have high contraceptive efficacy, and this allows them to be consistent with contraception.

We performed several sensitivity tests. Opportunity costs are a potential confounding variable in this analysis, which may be related both to a respondent’s efficacy and her contraception behavior. We excluded a control for this concept in our main models, because opportunity costs could be endogenous to efficacy and because we presumed that our measure of class background would absorb a substantial portion of the opportunity costs effect. As a first sensitivity test, we introduce an explicit control in models 3 and 6 for whether the respondent had a plan to finish her bachelor’s degree that we assessed to be plausibly realistic. If one has a high probability of getting a college degree, dropping out (or even slowing down), which might result from having a baby, will lead to more earnings foregone than if one is not going to graduate anyway. With this control added to the most saturated models in Table 3, ORs for high efficacy actually increase slightly (efficacy has ORs of 8.20 [p < .01] in the unweighted model and 5.88 [p < .05] in the weighted model; results not shown).

Second, we reestimated models 3 and 6 of Table 3, adding controls for whether side effects of contraception were ever experienced and for whether the cost of contraception was ever a problem, both measured specific to each partner. This sensitivity test also added a control at the person level: whether the woman expressed erroneous beliefs about contraception, the most common of which was believing that if one has sex for a few months without a pregnancy, it probably means one is sterile. High efficacy was still significant in both unweighted (p < .01) and weighted (p < .05) models, respectively, and had a large effect (ORs = 7.09 and 5.88; results not shown).

A third sensitivity test entailed reestimating models 3 and 6 in Table 3, retaining the partnerships in which women wanted a pregnancy during the partnerships (they are excluded from the analysis in Table 3) and controlling for an indicator variable coded 1 if they wanted a pregnancy. These models also show significant effects of high efficacy of a similar magnitude to those in Table 3 (ORs are 7.39 for the unweighted model [p < .01] and 5.21 for the weighted model [p < .05]).

As another variation of Table 3, we reestimated the models with the liberal measure of efficacy that includes contraceptive efficacy. Using the conservative measure, models 3 and 6 in Table 3 showed significant ORs of 7.68 (unweighted) and 5.45 (weighted) for high efficacy, and medium efficacy did not reach conventional significance levels. The analogous ORs using the liberal measure are 5.7 and 10.45 for high efficacy (p < .01) and 2.32 and 2.94 for medium efficacy (p < 0.05) (results not shown).

Alcohol sometimes reduces the self-regulation aspect of efficacy. We have a measure of whether the woman mentioned having sex with this partner while under the influence of drugs or alcohol. As a sensitivity test to see if this subpart of efficacy affects consistency, we deleted efficacy from models 3 and 6 in Table 3 and put in this measure instead. It was significant, with ORs of 0.22 (unweighted) and 0.11 (weighted); women are much less consistent with partners with whom they were ever inebriated during sex (results not shown).

In the partnership-level data, 20 percent of observations have at least one missing value, although only 11 percent of
them have more than one missing value among the variables in our models in Table 3. We examined the sensitivity of our conclusions to missing data, using multiple imputation of missing values. Appendix Table A2 shows that ORs for effects of high efficacy are still large, at 5.59 ($p < .01$, unweighted) and 4.32 ($p < .10$, weighted).

We also reestimated models 3 and 6 using a more detailed indicator for race that breaks down “other race” into Asian and a combined category for Latinas and Native Americans (there are only two Native American women in our sample, so they cannot be grouped in a separate category). Magnitude and significance of efficacy coefficients remain extremely similar to those in the original models.

Our last sensitivity test uses respondents (rather than partnerships) as units of analysis ($n = 97$), using logistic regression to predict whether the woman contracepted consistently (i.e., every time with every partner) from her efficacy (conservative version) and the person-level controls detailed above. We find a large positive effect of high efficacy; the OR is 9.77 ($p < .01$) (results not shown). Similarly to partnership-level models, medium efficacy is not significantly different from low efficacy.

Overall, we conclude that results showing a positive effect of high efficacy on contraceptive consistency are quite robust.

**Qualitative Results Regarding Efficacy**

We now turn to our qualitative data to shed light on how the linkages between efficacy and consistent contraception work.

**Low Planfulness, Low Self-regulation, and Inconsistency.** One way we tapped the presence of planfulness and self-regulation in arenas other than contraception was to ask women if they did assignments and studied in advance or procrastinated. Many of those whose contraception was inconsistent saw themselves as procrastinators. For example, Ashley, a 20-year-old white community college student who grew up poor, said that she dropped classes that required a lot of work and was a “last minute.” Across her 5 partners, she was inconsistent with condoms, although she never wanted a baby. Sonya, a white 24-year-old from a middle-class background, talked of having attended seven community colleges in the area but never finishing a semester, saying, “I just made a lot of excuses.” She was consistent with only 2 of her 5 partners, although she never wanted a pregnancy. Jada, a black 22-year-old who grew up very poor, said of her earlier time in community college, “I wasn’t…really serious yet….I messed up and I dropped out.” Later she had a felony conviction. She wanted a baby with only 1 of her 12 partners but, because of inconsistent contraception, has had six pregnancies, leading to five abortions and one child.

To provide more detail on how efficacy affects inconsistency, we have chosen three cases of women with low efficacy and low consistency and provide more detail on them.

**Case Study 1 of Low Efficacy and Inconsistency: Carolina.** Carolina, 26, a Latina from a working-class background, was attending community college and lived with her family of origin and her daughter. She contracepted consistently with just two of her four sexual partners. As a high schooler, she had sex for the first time in a relationship with a 23-year-old boyfriend with whom she used condoms consistently. After they broke up, Carolina started seeing Tom, 22. She was not on hormonal contraception. When asked if they used condoms, she said, “I think the first couple of times we were and after that it all kind of left.” She got pregnant and they decided on an abortion. She moved in with Tom after she graduated. To avoid another pregnancy, she got on the pill, but took it inconsistently, leading to a second pregnancy, which she took to term. She then got on Depo-Provera, the “shot.” Tom died of an illness, so Carolina went off Depo because she was not seeing anyone. But she ran into old high school friend and “things happened,” but they didn’t use a condom. She explains, “I think he said ‘Should I?’ and I said, ‘Yeah,’ and then it just never happened, like he never actually physically got up and did.” She made an appointment to get an IUD, but she was already pregnant; she decided to abort.

With the two of her partners she called boyfriends, Carolina thought she could imagine having a child sometime in the future, but she was clear that while these relationships were going on, she never wanted to get pregnant. So why was she inconsistent? Lack of efficacy is relevant; regarding the pill, she said, “I wasn’t really good at taking it.” Carolina’s low efficacy could also be seen in her study habits, which she called “really bad.” She also doubted how much she could affect her fate and thus did not plan, telling us, “I don’t think there’s a right time for anything; it’s just—it happens…because…it’s gonna happen….I’m not a person that really like tries to plan that far ahead because you never know what happens.”

**Case Study 2 of Low Efficacy and Inconsistency: Michele.** Michele was a white 24-year-old community college student with one daughter. In high school, she had a boyfriend who did jail time for “selling weed.” They used condoms the first time, but after that “not a lot.” Soon she was pregnant. “My whole world turned upside down… I cried…I didn’t have my family to tell because I was so scared to tell them.” Her parents “scheduled an abortion” but she decided to have the baby “out of spite for my parents.” After the birth she got on the injectable contraceptive.

Michele saw her next partner for a few months casually while he had another girlfriend. During this time, they used condoms. Then she had some casual partners. She told us, “I used protection with everyone that I slept with; I was just drinking a lot and using a lot of drugs.” When asked who provided the condoms, she clarified that “all the boys I slept with had their own condoms.” It didn’t take much of her efficacy to be consistent with them. By the time of her fifth
partner, at age 18, she had gotten on the pill to regulate her period. About her consistency, she said, “I was taking it when I remembered.” They also used condoms “sometimes.”

Michele used no contraception with her next partner, at age 19. It quickly got serious: “In two weeks we were saying we loved each other. It was like crazy… he helped me take care of my daughter. . . . I was on drugs, he wasn’t.” Asked why she wasn’t using any birth control, she said, “I was just on drugs. I don’t know. I wasn’t thinking straight.” Asked if she wanted a baby with him then, she said she “might have.” She got pregnant. She said, “I still partyed. . . . and then . . . three months into my pregnancy, like he had enough of my shit and he left.” She got an abortion at five months.

After a few one-night stands in which she was on drugs and used no contraception, she met a new man and fell in love, but they were each violent with the other: “We would beat the crap out of each other. I knocked one of his teeth out; he’s given me a couple fat lips.” She didn’t contracept because she wanted a baby. They broke up after a physical fight that started when he found incriminating pictures in her camera and she threw a large object at him, leading to her arrest.

Michele had some desire to have a baby with 3 of her 12 partners, so we do not attribute her inconsistent contraception with them to lack of efficacy. But with others, she thought a pregnancy would be a disaster, yet still contracepted inconsistently, and we believe low efficacy was a factor. When asked why she did not use protection, Michele’s typical explanation was her drug use. We agree that it was a huge factor lowering her efficacy. Another example of her low efficacy is that she did not have enough self-regulation to keep from throwing something at one partner when he threw her camera in his own jealous anger; it led to her arrest, and could have led to her losing custody of her daughter.

Case Study 3 of Low Efficacy and Inconsistency: Jacinda. Jacinda, a 23-year-old African American woman, grew up poor, sometimes in foster care. She and her toddler daughter lived with extended family members. Her first sexual encounter was a one-night event at age 14 with “a friend of a friend of a friend” whom she was often using pills and condoms simultaneously. Like I got off the shot and I thought a pregnancy would be a disaster, yet still contracepted inconsistently, we believe low efficacy was a factor. Asking why she did not use protection, Michele’s typical explanation was her drug use. We agree that it was a huge factor lowering her efficacy. Another example of her low efficacy is that she did not have enough self-regulation to keep from throwing something at one partner when he threw her camera in his own jealous anger; it led to her arrest, and could have led to her losing custody of her daughter.

She was with her third partner on and off for years, overlapping the second. At first, she was on the injectable contraceptive, but she went off for almost a year and ended up pregnant. She said, “It was so unplanned. . . . Like I got off the shot and I knew it could happen but I figured I had a lot of time later, before my body got back to normal.” Around the time of the pregnancy, she and her partner had become homeless, and they decided they just could not take care of a baby, so she had an abortion. Soon they broke up. He then got into “selling drugs and doing all kinds of stupid stuff” and got “arrested for fraud” while she was going to school and “moving up.” Later, he persuaded her to get back together with him. After a couple of months of unprotected sex, she went to get the shot, but learned that she was already pregnant. She said that at that point, “I did not wanna have kids with him.” But, given some regret she had about her prior abortion, she decided she “might as well stay” and they had the child. She later concluded that he “still hadn’t changed,” so when their daughter was two months old, she left him and went to live with relatives. Although she was back with her second partner as a “boyfriend,” her third partner, the father of her baby, came over to see his daughter, and they sometimes had sex. She had just had sex with him on the day of the interview, although she was late getting her shot.

We believe that Jacinda’s inconsistent contraception comes partly from her limited efficacy. Her consistency with the shot with her second partner seems due more to his efficacy than hers. She described how he would say, “Okay, it’s been three months, you need to go get it,” adding “I completely forget about it sometimes.” With the father of her child, who did not remind her, she had long lapses. The first one, which led to her first pregnancy, which she aborted, was based in part on an inaccurate belief: thinking she could safely have sex for a time after she went off contraception. But not having enough self-regulation to go get the shot was also an issue; she had been off almost a year when she got pregnant; surely she did not think she could safely go that long. Then, after her abortion, she was slow to get back on; she said, “I just never got around to doing it.” On the day we interviewed her, when asked if she had ever taken Plan B, the “morning-after” pill, she said she might need it right now, because she was a few days late getting her shot, and she just had sex with her daughter’s father that morning. But she made it clear that she did not really intend to get it.

We see signs of limited efficacy in other parts of Jacinda’s life as well. She told us that she never put much effort into high school. She was not very assertive in resisting overtures from ex-boyfriends to get back into relationships, even when she did not really want to. In explaining why she once again became “official” with her second partner, she said that “he said he wanted to be my boyfriend again, so we are.” She got back with her third partner after their breakup because he “persuaded me that he was . . . gonna be different and trying hard.” But she also made it clear that she never really believed him. Nonetheless, she stayed and ended up getting pregnant.

High Self-regulation and Consistency. Having discussed cases of women with low efficacy and inconsistent contraception, we turn now to the other cases consistent with the association we found: women who had high efficacy and contracepted consistently with every partner. As an example of a consistent contraceptor with substantial self-regulation, Isabella was a 21-year-old Asian woman from an upper-middle-class family who attended Berkeley. She had had one partner with whom she was often using pills and condoms simultaneously. One indicator of her self-regulation is that once on a semester abroad, when she had gone off the pill because she was not in a relationship, she started “fooling around” with a man she was very attracted to, and wanted to go further sexually, but did not because she was not on the pill.
**High Planfulness, High Self-regulation, and Consistency.** As mentioned above, we noticed that those who had the planfulness and self-regulation to do schoolwork further in advance were more likely to be consistent contracepters. Lindsey, a white, 20-year-old athlete at Stanford, was from a middle-class family. Asked about her style with schoolwork, she said, “I usually start a paper the week before… I like to brainstorm and then outline and then write.” She had contracepted every time with each of her four partners, of whom two were casual. Nancy, a 22-year-old at Stanford, who went to a private boarding school, got up at 5 a.m. to study. She had been consistent with her three partners. Jane was a 21-year-old Asian from a middle-class background attending Stanford who spread her studying for any exam over three days. She was “queer-identified” and had just one male partner; she always used pills, condoms, or both with him. The one time that she was not on pills and used a condom that broke, she got Plan B. Pamela was a 20-year-old white Stanford student with a professional father. She said, “I’m like a person that likes to get their work done beforehand.” Indeed, we interviewed her on a Monday when she had two papers due on Thursday, and both were already done. She had contracepted consistently with her one partner.

**High Assertiveness and Consistency.** The stories of the perfect contracepters often include tales of assertiveness with men. Julie, a white 21-year-old attending community college, who had had three partners, one casual and two boyfriends, was a good example. She said, “I would not have sex with a guy who didn’t want to use a condom.” Asked if a boyfriend ever pressured her not to use condoms, she retorted, “I would have broken up with him if he did.” Gretchen was a 20-year-old Native American at Stanford, who grew up among considerable disadvantage. Seven of her 10 partners were casual, but sometimes the liaisons lasted a while, so it is quite an achievement to have used condoms with all partners, and sometimes the pill or patch as well. She said, “I’ve never had sex without some form of birth control.” She was assertive with men on a range of issues. One of her partners wanted to move something casual to a relationship, but around that time he hit her, and she said, “I was like ‘That’s the end of that.’” She told us that if they would not use a condom, “they’re not gonna get in my pants.” Lisa, 21, was a white Stanford student whose father had a graduate degree and high earnings. She had had one partner, a boyfriend. She said, “And he knew ‘no glove, no love.’” Gina, a white woman at Stanford, was 23 and from a middle-class background. She had had six partners, three of them casual, and had been on the pill for 7 years. She required each partner to be tested for sexually transmitted infections before having sex with him. She was also assertive about engaging in or encouraging men to engage in sexual behaviors that bring her to orgasm. Asked if she usually had orgasms, she said, “I make sure I do. Yeah.”

**Negative Cases.** Not all women with high efficacy were consistent contracepters, and a few with very low efficacy were. Of the 99 women, 69 percent were consistent with our generalization that high efficacy is associated with consistent contraception and low or medium efficacy with inconsistent contraception. Here we briefly examine some of the 31 percent who were “negative cases”—contrary to our thesis.

Four of the 99 women scored high on their noncontraceptive efficacy but contracepted inconsistently with at least one partner, with only 2 so discordant to our thesis that they contracepted consistently with fewer than two-thirds of their partners. Both of these two were 22-year-old black Berkeley students who grew up poor or working class and showed good efficacy in academic matters. Madison described her approach to school assignments this way: “I get it done pretty early and they’re pretty good quality. I spend a good amount of time… editing it.” Trisha also had high efficacy; she studied for exams well in advance, was diligent about finding sources of financial aid for school, and believed she could affect her fate, telling us, “Once I set my sights on something and that’s what I want, I go get it.” Both of these women did not use condoms consistently because they, rather than their partners, did not like the physical feel of them. What seems odd, given that they both had high efficacy and clearly never wanted to get pregnant, is that neither used another method. On the other hand, they had not exposed themselves to a long duration of risk; Madison had had only one partner and Trisha only two.

Our other negative cases are more numerous: the 27 cases in which respondents did not have high efficacy in noncontraceptive matters but had perfect records of contraception. In two of these cases the women had sex only once or twice, so a “perfect” record did not really require that much efficacy. In other cases, women had male partners who simply took care of condom use or withdrawal with no need for the women to be assertive or to organize hormonal contraception. In other cases, women were on the pill through numerous partners and did not have the problem forgetting to take pills that some women do, despite evidence of low efficacy in noncontraceptive areas of their lives; they are a reminder that efficacy can be compartmentalized, although our quantitative results suggest that efficacy often operates more globally.

**Discussion and Conclusions**

We have explored the role of efficacy in affecting how consistently young, single women contracept when they do not want to get pregnant. Women may truly not want to have a child yet but not have sufficient efficacy to contracept consistently. Our quantitative analysis showed that in partnerships in which women never wanted to get pregnant, under numerous controls, efficacy had a strong, significant positive association with consistency of contraception. This was even true for a measure of efficacy that was constructed to be conservative to our hypothesis by not including contraceptive efficacy in the measure.

Our qualitative analyses of women’s narratives further illuminated the association between efficacy and contraceptive
consistency. Women who contracepted inconsistently sometimes talked candidly about intending to contracept but not following through. They were more likely than consistent contracepters to tell us life stories that illustrated lack of efficacy in arenas unrelated to contraception: procrastinating, engaging in violence that threatened some of their own goals, being talked into things inconsistent with their goals, having their judgment impaired by drug or alcohol use, or sensing they had little control over life.

We have conceptualized efficacy as a skill that is also part of culture. We pointed to past research suggesting that class background affects the opportunities individuals have to develop efficacy. But, as Small et al. (2010:10) pointed out, any consideration of culture together with disadvantage has been a sort of third rail in American sociology for the past few decades. Indeed, our conclusions might be seen by some sociologists to “blame the victim” for their inconsistent contraception and resulting pregnancies. Our intent was to contribute to the scientific understanding of why inconsistent contraception occurs, not to make moral claims about who is to blame. Moral claims are largely beyond our scope here, except to say that we do not see explaining behavior in terms of a personal characteristic such as efficacy to imply blame and that a sensible normative theory should not hold individuals entirely responsible for characteristics arising from how they were socialized, which neighborhoods and schools influenced them, or what other opportunities they had, all factors that are probably important determinants of efficacy. We hope our research helps advance a theoretical perspective that sees structural constraints, such as social class, to affect outcomes both directly and through personal characteristics, like efficacy, that the constraints encourage (England 2016).

Our finding that women who do not want a baby often find themselves unable to contracept consistently suggests that many will get pregnant who truly do not wish to. This is consistent with past surveys finding that women in their 20s refer to a high proportion of nonmarital pregnancies as unintended. Our research suggests that one important determinant of such pregnancies is lack of efficacy.

### Appendix A

**Table A1.** Comparison of Descriptive Statistics between CPLS and NSFG 2006–2010.

| Variable                                      | CPLS  | NSFG 2006–2010 |
|-----------------------------------------------|-------|-----------------|
| Total sexual partners (median)                | 4     | 5               |
| Age at first intercourse (years) (median)     | 17    | 16              |
| Percentage of first pregnancies that are unintended | 87    | 83              |

*Note. CPLS = College and Personal Life Study; NSFG = National Survey of Family Growth. We constrained the NSFG sample to women between 20 and 29 years who are not virgins and are never married. The CPLS sample included only women who fit these criteria.*

**Table A2.** Odds Ratios from Logistic Regressions Predicting Whether Respondent Consistently (Always) Contracepted in the Sexual Partnership, Using Imputed Partnership-level Data Set.

| Variable                                      | Unweighted Regressions | Weighted Regressions |
|-----------------------------------------------|------------------------|----------------------|
|                                              | 1  2  3                 | 4  5  6              |
| Medium efficacy (reference: low)             | 0.937 1.129 1.507      | 1.271 1.483 1.671    |
| High efficacy (reference: low)              | 2.847* 3.424* 5.593**  | 3.222 3.809* 4.324*  |
| Upper middle class (reference: lower/working)| 1.930* 1.944* 1.267    | 1.185 1.234 0.801    |
| Race (reference: black)                      |                        |                      |
| White                                         | 0.908 0.963 1.069      | 2.008 2.022 1.658    |
| Other race                                    | 1.105 1.215 1.233      | 2.291 2.418 1.842    |
| R’s age at first intercourse with this partner | 1.035 1.038 0.975      | 0.99 0.996 0.958     |
| R wanted a baby with partner in the future only| 0.280*** 0.791 0.541 | 0.541 0.541 0.541    |
| Partner opposed condom use                    | 0.457*                 | 0.380*               |
| R ever cohabited with partner                 | 0.337*                 | 0.378                |
| Partnership length in months                 | 0.840***               | 0.900*               |
| Squared partnership length in months          | 1.005*                 | 1.002                |
| Cubic partnership length in months            | 1                      | 1.000*               |
| Constant                                     | 1.748 1.849 17.86*     | 0.918 0.928 17.29    |
| Observations                                  | 512 512 512            | 512 512 512          |

*Note. R = respondent. Imputation was used to impute scores for cases with missing values on independent variables. Imputed outcome scores (consistency) are not used in the analysis model, only used in the imputation model.

* p < .10, **p < .05, and ***p < .01 (two-tailed tests).
Funding

The author(s) received the following financial support for the research, authorship, and/or publication of this article: This research was funded in part by a grant from the Elfenworks Foundation and the Stanford Center on Poverty and Inequality.

Notes

1. Most researchers count pregnancies that are taken to term unintended if women, asked after the birth, say that at the time of conception, they did not want to get pregnant. Some studies, such as that of Finer and Zolna (2011), add a portion of the number of abortions to the unintended pregnancies, using abortion provider data, because it is known that women seriously underreport abortions in surveys. They did not assume that all pregnancies that were aborted were unintended at conception but used another survey to estimate the proportion that were unintended and applied that proportion to the abortion data.

2. We could not combine probability sampling within the selected schools with long, qualitative interviews, because sampling frames (a list of all students with contact information) were not available to us from all the schools. For one school at which such a frame was available to us, repeated efforts to secure interviews for another study yielded an extremely low response rate, even after multiple contacts, which would have reduced the gain from a probability sample.

3. We implemented multiple imputation by chained equations (MICE) using the command “mi impute chained” in Stata 13. The dependent variable was included in the imputation model, but partnerships for which it was missing were dropped from the analysis models presented here. MICE assumes that missing values are randomly distributed and regresses variables with missing values against all other variables in the model to impute values. We imputed missing values using ten iterations. We used the predictive mean matching imputation method to fill in missing values for continuous variables, and augmented logistic regression to impute binary variables.

References

Bandura, Albert. 1997. Self-efficacy: The Exercise of Control. New York: W. H. Freeman.

Baumeister, Roy F., Matthew Gailliot, C. Nathan DeWall, and Megan Oaten. 2006. “Self-regulation and Personality: How Interventions Increase Regulatory Success, and How Depletion Moderates the Effects of Traits on Behavior.” Journal of Personality 74(6):1773–1801.

Boonstra, Heather D., Rachel Benson Gold, Cory L. Richards, and Lawrence B. Finer. 2006. Abortion in Women’s Lives. New York: Guttmacher Institute.

Chandra, Anjani, Gladys M. Martinez, William D. Mosher, Joyce C. Abma, and Jo Jones. 2005. “Fertility, Family Planning, and Reproductive Health of U.S. Women: Data from the 2002 National Survey of Family Growth.” Vital Health Statistics 23(25). Retrieved January 18, 2016 (http://www.cdc.gov/nchs/data/series/sr_23/sr23_025.pdf).

Clausen, John S. 1991. “Adolescent Competence and the Shaping of the Life Course.” American Journal of Sociology 96(4):805–42.

Edin, Kathryn, and Maria Kefalas. 2005. Promises I Can Keep: Why Poor Women Put Motherhood before Marriage. Berkeley: University of California Press.

Edin, Kathryn, Paula England, Emily Fitzgibbons Shafer, and Joanna Reed. 2007. “Forming Fragile Families: Was the Baby Planned, Unplanned, or in Between?” Pp. 25–54 in Unmarried Couples with Children, edited by Kathryn Edin, and Paula England. New York: Russell Sage.

England, Paula. 2016. “Sometimes the Social Becomes Personal: Gender, Class, and Sexualities.” American Sociological Review 81(1):4–28.

England, Paula, Elizabeth McClintock, and Emily Shafer. 2011. “Birth Control Use and Early, Unintended Births: Evidence for a Class Gradient.” Pp. 21–49 in Social Class and Changing Families in an Unequal America, edited by Marcia Carlson, and Paula England. Stanford, CA: Stanford University Press.

Finer, Lawrence B., and Stanley K. Henshaw. 2006. “Disparities in Rates of Unintended Pregnancy in the United States, 1994–2001.” Perspectives on Sexual and Reproductive Health 39(1):48–55.

Finer, Lawrence B., and Mia R. Zolna. 2011. “Unintended Pregnancy in the United States: Incidence and Disparities, 2006.” Contraception 84(5):478–85.

Frost, Jennifer J., Susheela Singh, and Lawrence B. Finer. 2007. “Factors Associated with Contraceptive Use and Nonuse, United States, 2004.” Perspectives on Sexual and Reproductive Health 39(2):90–99.

Hamilton, Brady E., Joyce A. Martin, Michelle J. K. Osterman, and Sally C. Curtin. 2014. “Births: Preliminary Data for 2013.” National Vital Statistics Reports 63(2):1–19.

Hayford, Sarah R., and Victor Agadjanian. 2012. “From Desires to Behavior: Moderating Factors in a Fertility Transition.” Demographic Research 26(20):511–42.

Heckman, James J., and Tim D. Kautz. 2012. “Hard Evidence on Soft Skills.” Working Paper 18121. Cambridge, MA: National Bureau of Economic Research.

Kaye, Kelleen, Katherine Suellentrop, and Corinna Sloup. 2009. “The Fog Zone: How Misperceptions, Magical Thinking, and Ambivalence Put Young Adults at Risk for Unplanned Pregnancy.” Washington, DC: National Campaign to Prevent Teen and Unplanned Pregnancy.

Lareau, Annette. 2002. “Invisible Inequality: Social Class and Childrearing in Black Families and White Families.” American Sociological Review 67(5):747–76.

Levinson, Ruth A. 1995. “Reproductive and Contraceptive Knowledge, Contraceptive Self-efficacy, and Contraceptive Behavior among Teenage Women.” Adolescence 30(1):67–85.

Lewis, Susan K., Catherine E. Ross, and John Mirowsky. 1999. “Establishing a Sense of Personal Control in the Transition to Adulthood.” Social Forces 77(4):1573–99.

Littlejohn, Krystale. 2012. “Hormonal Contraceptive Use and Discontinuation Because of Dissatisfaction: Differences by Race and Education.” Demography 49(4):1433–52.

Littlejohn, Krystale. 2013. “‘It’s Those Pills That Are Ruining Me’: Gender and the Social Meanings of Hormonal Contraceptive Side Effects.” Gender & Society 27(6):843–63.

Longmore, Monica A., Wendy D. Manning, Peggy C. Giordano, and Jennifer L. Rudolph. 2003. “Contraceptive Self-efficacy:
Does It Influence Adolescents’ Contraceptive Use?” *Journal of Marriage and the Family* 3(2):322–35.

Manlove, Jennifer, Suzanne Ryan, and Kerry Franzetta. 2003. “Patterns of Contraceptive Use within Teenagers’ First Sexual Relationships.” *Perspectives on Sexual and Reproductive Health* 35(6):246–55.

Mirowsky, John, and Catherine E. Ross. 2003. *Education, Social Status, and Health*. New York: Aldine de Gruyter.

Moreau, C., K. Hall, J. Trussell, and J. Barber. 2013. “Effect of Prospectively Measured Pregnancy Intentions on the Consistency of Contraceptive Use among Young Women in Michigan.” *Human Reproduction* 28(3):642–50.

Mosher, William D., and Jo Jones. 2010. “Use of Contraception in the United States: 1982–2008.” National Center for Health Statistics. *Vital Health Statistics* 23(29).

Musick, Kelly, Paula England, Sarah Edgington, and Nicole Kangas. 2009. “Education Differences in Intended and Unintended Fertility.” *Social Forces* 88(2):543–72.

Mullainathan, Sendhil, and Eldar Shafir. 2013. *Scarcity: Why Having Too Little Means So Much*. New York: Times Books.

Pearson, Jennifer. 2006. “Personal Control, Self-efficacy in Sexual Negotiation, and Contraceptive Risk among Adolescents: The Role of Gender.” *Sex Roles* 54(2/10):615–25.

Reed, Joanna, Paula England, Krystale Littlejohn, Brooke Conroy Bass, and Mónica L. Caudillo. 2014. “Consistent and Inconsistent Contraception among Young Women: Insights from Qualitative Interviews.” *Family Relations* 63(2):244–58.

Ross, Catherine E., and John Mirowsky. 2013. “The Sense of Personal Control: Social Structural Causes and Emotional Consequences.” Pp. 379–402 in *Handbook on the Sociology of Mental Health*, 2nd ed., edited by Carol Aneshensel, Jo Phelan, and Alex Bierman. New York: Springer.

Rotter, Julian B. 1966. “Generalized Expectancies of Internal versus External Control of Reinforcements.” *Psychological Monographs* 80(609).

Sassler, Sharon, Amanda Miller, and Sarah M. Favinger. 2009. “Planned Parenthood: Fertility Intentions and Experiences among Cohabiting Couples.” *Journal of Family Issues* 30(2):206–32.

Schoen, Robert, Nan Marie Astone, Young J. Kim, Constance A. Nathanson, and Jason M. Fields. 1999. “Do Fertility Intentions Affect Fertility Behavior?” *Journal of Marriage and the Family* 61(3):790–99.

Sharkey, Patrick, N. Tirado-Strayer, A. Papachristos, and Cybele C. Raver. 2012. “The Effect of Local Violence on Children’s Attention and Impulse Control.” *American Journal of Public Health* 102(12):2287–93.

Silverman, Jane, Aida Torres, and Jacqueline Darroch Forrest. 1987. “Barriers to Contraceptive Services.” *Family Planning Perspectives* 19(3):94–97.

Small, Mario, David J. Harding, and Michele Lamont. 2010. “Reconsidering Culture and Poverty.” *Annals of the American Academy* 629(1):6–26.

Swidler, Ann. 1986. “Culture in Action: Symbols and Strategies.” *American Sociological Review* 51(2):273–86.

U.S. Department of Education. 2011. “Community College Student Outcomes: 1994–2009.” Retrieved January 18, 2016 (https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012253).

Yoo, Sam Hyun, Karen Benjamin Guzzo, and Sarah R. Hayford. 2014. “Understanding the Complexity of Ambivalence toward Pregnancy.” *Biodemography and Social Biology* 60(1):49–66.

**Author Biographies**

**Paula England** is professor of sociology at New York University. Her current research concerns contraception, nonmarital births, and sexualities, with an emphasis on cohort trends and class differences.

**Mónica L. Caudillo** is a doctoral candidate in sociology at New York University. Her research interests include quantitative methods, family demography, gender, and sexuality. Her dissertation assesses the impact of community violence and school social context on fertility and union formation in Mexico, and the social effects of access to contraception in the United States.

**Krystale Littlejohn** is an assistant professor in the Department of Sociology at Occidental College. She studies gender, race, and reproduction. She is currently working on a book about how gender shapes contraception, and how hormonal contraception shapes women’s experiences of their bodies.

**Brooke Conroy Bass** is an independent scholar in Portland, Oregon. Her research concerns gender dynamics in heterosexual couples before they marry.

**Joanna Reed** is a lecturer in the Sociology Department at University of California-Berkeley. Her research concerns relationships among unmarried couples who have had a child together.