

13

WHAT IS "BABY FEVER"?

Contrasting Evolutionary Explanations of Proceptive Behavior

Anna Rotkirch

The truth is, I've had a strong desire to make a baby ever since I turned 18. I still remember how I walked around with my five baby dolls as a child!

Actress Nicole Kidman, mother of two adopted children, who longed to give birth in 2005. (Ala-Risku 2005)

It's hard to become a father because everything turns around the mother for a long time. But men also have a biological clock and baby fever.

Nicke Lignell, Finnish actor and father of five children in 2003. (Hallsten 2005)

Some may be motivated by romantic love, or a desire to carry on the family line, or a primeval urge to perpetuate the species.

The London Financial Times, June 24-25, 2006, W1-2.

INTRODUCTION

There exists a strong lay perception that desiring children is something "natural," "normal," and universal. In its more urgent forms, this desire is often referred to through metaphors of *baby fever* or the *biological clock*. The biological

clock refers to the right time to have children, usually the first child.¹ It may concern the right age to begin childbearing, a kind of physical and psychological maturation – “I’m 25 and my biological clock is ticking” – or more directly a necessity to get pregnant before it is too late, i.e., before the woman reaches menopause. Baby fever denotes a wish to have children of one’s own and especially to touch, smell, and carry infants. It may be induced or aggravated by seeing other people’s children. Women who do not wish to have more children may laughingly say, “I shouldn’t take her into my arms, it’s too dangerous.” Women talk more about baby fever, although men also experience it, as the second quotation above indicates. Potential grandparents may also say they have baby fever. Thus baby fever denotes a strong feeling, which may be against the speaker’s rational considerations, while the biological clock relates more to the proper beginning of childbearing in the lifespan. I will here use these expressions as synonyms.

What does evolutionary theory say about wanting children? Contrary to lay perceptions, evolutionary theorists show that fertility decisions are not simply age-related but a complex mixture of environmental, contextual, and genetic factors (Kaplan and Lancaster 2003). Today’s state of affairs appears quite fragmented (for a review, see Borgerhoff Mulder 1998). The opposite arguments partly follow the differences between evolutionary psychology and sociobiology, or what Sanderson (2001a, 128-30) calls Darwinian psychology and Darwinian social science. Darwinian psychologists readily question any evolved and direct wish for children, whereas sociobiologists sometimes appear ready to claim that desiring children is adaptive before empirical research has been undertaken.

In the 1980s, Warren B. Miller (1986, 1992) presented his concept of “proception,” behavior that favors childbearing and is the opposite of contraception. Proceptive behavior includes everything from rational long-term planning to getting pregnant “by mistake.” I suggest that baby fever has a special place in this continuum of proceptive behavior. By “baby fever” I mean a conscious wish for children that is connected with persistent, bodily emotion and recurring, spontaneous thoughts.

Many authors suggest that the main biological basis for childbearing is related to the pleasures of having sex and of parenting (Miller 1986, 268; Morgan and King 2001). While agreeing with them, I here look for a more specific cognitive trait, which may also arise outside a sexual relationship and without a person’s already being a parent. Neither is baby fever necessarily connected to a general attachment to all babies.

My guess is that baby fever is an emotion, the function of which is to guide the behavior of the person experiencing it and her or his environment, especially in the form of testing or persuading sexual partners. Anecdotal evidence from contemporary low-fertility societies suggests that children in the near environment trigger baby fever. It also appears to “rise” when there is a conscious wish to have a child of one’s own but there is some obstacle in the way – when the financial or social situation, one’s partner or the lack of a partner, the adoption

agencies, fertility treatments, wish. It may serve as the “complicated decision. Although pathological conditions such

Whether the emotional have a genetic basis lies out will first briefly discuss the fertility, i.e., adaptations for four major schools of thought concerning a conscious desire for evolutionary sociology through behavioral genetics.

ADAPTATIONS

As a rule, existing research is related to the long-standing fertility. Anthropological data number of children is regulated by scarcities and infants. This has been seen in Japan (Skinner 2004), the use with the aid of modern contraceptives

There is a bewildering number of traits affecting fertility decisions. Some are evolved adaptations regulating fertility, others are evolved predispositions. Further analysis on explanatory levels – cultural, social, neighborhoods, housing

Population Level Explanations

Sanderson’s *The Evolution of Fertility* discusses the evolution of reproductive behavior and on fertility on the population level. It links male empowerment, and industrialization to regression analyses of cross-national data. The most empirical support comes from the fact that the model is clearly best in predicting a woman’s labor or a “simple index of fertility.” It is, by contrast, weak predictors of fertility. This suggests an evolved strategy of reproductive behavior. In high mortality, people have more children; in low mortality they have fewer.

agencies, fertility treatments, or one's body refuse to cooperate in granting that wish. It may serve as the "irrational" part that pushes the woman to make a complicated decision. Although baby fever is not an illness, it may develop into pathological conditions such as depression or false pregnancies.

Whether the emotional and behavioral patterns I here call baby fever do have a genetic basis lies outside the scope of this theoretical paper. Instead, I will first briefly discuss the most usual kinds of evolutionary theorizing about fertility, i.e., adaptations for reducing and postponing fertility. I will then present four major schools of thought during the last century that propose theories concerning a conscious desire for children, from Edward Westermarck's early evolutionary sociology through women's studies to evolutionary psychology and behavioral genetics.

ADAPTATIONS DECREASING FERTILITY LEVELS

As a rule, existing research has focused on adaptations that *reduce* fertility. This is related to the long-standing demographic challenge of explaining declining fertility. Anthropological demography has shown that in all known societies, the number of children is regulated, usually so as to decrease the number of pregnancies and infants. This happens by systematic infanticide as in early modern Japan (Skinner 2004), the use of foundling homes and wet-nurses in Europe, or with the aid of modern contraceptives and induced abortions (Hrdy 1999).

There is a bewildering multitude of explanations of cognitive and emotional traits affecting fertility decisions. While most of them appear to presume evolved adaptations regulating fertility decisions, only a few try to define such evolved predispositions. Furthermore, different disciplines vary in their emphasis on explanatory levels – do we look at evolved behavior varying among populations, neighborhoods, households, or individuals?²

Population Level Explanations

Sanderson's *The Evolution of Human Sociality* features a chapter on human reproductive behavior and one subchapter devoted to fertility decline. It discusses fertility on the population level as it may be related to economic conditions, female empowerment, and infant mortality. Sanderson finds on the basis of regression analyses of cross-national data that infant mortality is the variable with the most empirical support: "Infant mortality was the best predictor . . . and clearly best in predicting actual fertility *change*." The economic value of children's labor or a "simple increase in material wealth or the standard of living" are, by contrast, weak predictors (Sanderson 2001a, 173-74). Sanderson's view suggests an evolved strategy of choice between the so-called *r* (quantity) and *K* modes of reproductive behavior in humans: In poor conditions with high infant mortality, people have more births, whereas in better conditions with low infant mortality they have fewer. The strategy requires adaptations facilitating cogni-

tive assessment of infant mortality in ways that can rapidly (during a few generations) spread through whole populations.

It is unclear to me whether this explanation applies to other levels, such as different social classes within a society. The tendency for the poorest to have the most children fits with their greater risk of infant mortality, but in the Scandinavian countries for both the wealthiest and the poorest to have 3+ children does not (e.g., Duvander and Andersson 2003). Neither does Sanderson's explanation explain change in low-fertility societies. For instance, Russian fertility levels sharply declined in the 1990s, while infant mortality increased somewhat.

Household Level Explanations

Other explanations focus on household composition and wealth. For instance, evolutionary psychology posits an adaptation for scheduling female reproduction within the family: As long as the mother has small children in need of care, her older daughters will not have children themselves (Flinn 1989; Barrett, Dunbar, and Lycett 2002, 137-70). This posits the existence of an "anti-baby fever medicament" distributed by the mother of the household. However, in Northern Europe today such constellations are rare, due to the low number of both children and their age differences in most households.

Group Level Explanations

Some scholars look for between-group differentials in fertility. For instance, Kevin MacDonald (1999) shows how marginalized ethnic communities, in his case the Ashkenazi Jews, adjust their reproductive strategies from high to low fertility depending on the economic situation of the household. The supposed adaptation would "respond to cues of scarcity by delaying or lowering reproduction" (MacDonald 1999, 227). He supports the so-called fertility opportunity hypothesis developed by Virginia Abernethy. According to it, "a perception that economic opportunity is expanding, so that relatively many children could probably be successfully raised to maturity, is associated with early marriage and larger family size" (Abernethy 1999, 119).

The fertility opportunity explanation is more contextual than the "simple material well-being" Sanderson (2001a) discarded as an explanation of fertility decline. It could work for some families or groups only, not necessarily whole populations. However, the fertility opportunity hypothesis appears to contradict most other explanations, which suggest that expectations of increased wealth limits fertility instead of increasing it.

Social Status and Personality Level Explanations

Finally, a growing body of research explains variations in individual fertility by linking them to *social status* in general, and more specifically to status and IQ: "The proposal is that the evolved desire to increase or maintain one's social

status may conflict with the desire to have more children. This conflict may therefore influence fertility decisions. This is a frequent finding in general economic behavior, which finds intercorrelations between income, fertility, and IQ (Belsky, Steiner, and Plomin 1990). The logic is that the cognitive adaptation to a high status might be to have fewer children. "Why might my children surpass me? Why not have children?" In a similar vein, the outcome of snowballing resource competition for resources. In a world of high competition for resources, fertility should become negatively correlated with wealth both in the past (Mace 1998.)

Thus most explanations of fertility decline are "logical guillotines" rather than "baby fever" triggers involved appear to suggest that, if they do not fit into your current life, you should not have children, or if you are in a household type with high fertility, low parental investment, etc. – that is, they do not

POSSIBLE ADAPTATIONS

It is undoubtedly true that high fertility has disastrous consequences. However, high fertility has even more disastrous consequences than limiting the number of children. Why do people in contemporary societies have zero, or even close to 0.5?

Explanations for the emergence of high fertility varied widely during the last century. Why "baby fever" and other reproductive behaviors to whom. These versions take the form of the constructionist rejection of the product explanation, and the context-dependent, procreative

Version 1: A Childbearing Adaptation

In his *The History of Human Fertility*, Mace (1998) argues that deserves to be rediscovered.

status may conflict with the desire to have large numbers of children and therefore influence fertility decisions" (MacDonald 1999, 227). This argument is frequent in general economic reasoning. It also appears in behavioral ecology, which finds intercorrelations between spousal and parental relations, sexual behavior, and IQ (Belsky, Steinberg, and Draper 1991). Haaga (2001, 58) states that the cognitive adaptation involved may be a relatively simple "if . . . then" logic. People may follow a simple cue related to status competition: "Whom might my children surpass? What do I see my potential rivals providing for their children?" In a similar vein, Hill and Reeve (2005) explain low fertility as the outcome of snowballing resource games. Their mathematical model indicates that fertility should become lower if wealth is inherited and there is increased competition for resources. In their view, this explains "why fertility correlates negatively with wealth both within and between populations" (2004, 401; cf. Mace 1998.)

Thus most explanations of fertility decisions indicate the existence of "biological guillotines" rather than biological clocks. The cognitive and emotional triggers involved appear to say: Do not have children if you cannot take care of them, if they do not fit into your household's division of work, if your friends do not have children, or if you are bright and ambitious. Additionally, societies and household types with high fertility levels are usually associated with high infant mortality, low parental investment, lower number of desired than actual children, etc. – that is, they do not bear any indications of strong baby fevers.

POSSIBLE ADAPTATIONS FOR WANTING CHILDREN

It is undoubtedly true that having a child at the wrong moment often has disastrous consequences. However, from the gene's point of view having no child at all has even more disastrous consequences. Although so many triggers aim at limiting the number of children, one may turn the question upside down and ask: Why do people in contemporary wealthy, competitive societies have any children at all (Morgan and King 2001)? Why have fertility levels nowhere fallen to zero, or even close to 0.5?

Explanations for the emotional incentives in childbearing decisions have varied widely during the last century. I present here four different versions of why "baby fever" and other related types of wishing for a child have arisen, and to whom. These versions take us from the hypothesis of a primitive instinct to the constructionist rejection of any instinct, the evolutionary psychological by-product explanation, and then back to a hypothesis of some, albeit feeble and context-dependent, procreative instinct.

Version 1: A Childbearing Instinct

In his *The History of Human Marriage*, a classic nineteenth-century bestseller that deserves to be rediscovered (Roos, Chapter 12 this volume; Sanderson

2007a), Edward Westermarck (1894, 379) briefly discusses people's wish to have children. He approaches it as part of Darwinian sexual selection. Fertility assessment is an important component of men's and women's mate choice, he writes, even if not the most appealing one: "We have hitherto dealt only with the poetry of sexual selection – love; now something is to be said of its prose – dry calculation. And we may conveniently begin with man's appreciation of woman's fertility, as this has some of the characteristics of an instinct." Westermarck (1894, 376) immediately continues with a clear statement: "Desire for offspring is universal in mankind. Abortion, indeed, is practiced now and then, and infanticide frequently takes place among many savage peoples; but these facts do not disprove the general rule."

After reviewing anthropological evidence from cultures all over the world, Westermarck (1894, 379) concludes that the desire for children has various causes. First, he repeats, "there is in man an instinct for reproduction . . . [and] with this instinct a feeling of parental pride is associated." Men value female fertility in their wives and in the women of their community, sometimes to the extent that slaves or younger men were allowed to inseminate the wives of infertile or deceased husbands. Some societies value children even if the woman has no husband, Westermarck also notes. However, the socioeconomic support provided by children is most important: "No doubt children are most eagerly longed for by savage men because they are of use to him in his lifetime" (1894, 380).

Finally, Westermarck (1894, 381) sees the desire for offspring as "less intense" in modern societies. This is because children's rearing and education are more expensive, religious motives are weaker, women are not viewed only as mothers, and "marriage is something more than an institution for procreation of legitimate offspring." However, we should not think that fertility has no bearing on contemporary marriages. Westermarck notices the "remarkable" fact that in Switzerland marriages without children end in divorce twice as often as other marriages.³

Westermarck thus finds evidence of a universal desire for children, even in the Europe of his day, which was passing through the first phase of fertility decline. This universal desire is motivated first and foremost by the economic support provided by children. There are also "some characteristics of an instinct" in the way males value fertile women, that is, the universal desire is at least partly rooted in evolved psychological adaptations. They appear related to male sexual choice (fertile women as more attractive) but also to the feeling of parental pride.

Interestingly, Westermarck and the sources he uses emphasized a male or gender-neutral desire for children. There are no examples of women longing for babies and no talk of "maternal instincts," only of how stigmatizing barrenness or accusations of infertility are to women. This may of course be influenced by a male-centered bias in data collection that ignored female folklore. The whole issue is also discussed as "sexual selection influenced by calculation," not direct emotional ties to potential children. Either Westermarck's material lacked depictions of "baby fever," or he ignored them.

Seeing childbearing as a social phenomenon, Westermarck quotes T. H. Marshall's frequent and strong phenomenon of personal ambition, and separate support in old age, as to the extent of philoprogenitiveness, acting more of a plain instinct than a social one (1894, 379). Marshall thus appears more eager to draw a line between the instinctive and the social than Westermarck.

Many lay comments today refer to the "desire" to have children. The concept of "desire" for children is central to theories of species survival – "a primeval urge" (see the *Financial Times* article put it (Torrill 1997) that Westermarck, a forerunner of modern evolutionary explanations on a species level, with material, social, and (ma-

Version 2: The Socially Constructed

While lay people today continue to talk about the "desire" to have children, it appeared from the vocabulary of the second wave of the women's movement that the field of Women's Studies created a new concept of motherhood and especially presumed an "instinctive" desire.

As social constructionism became dominant in the 1980s, a view emerged of motherhood as a social phenomenon. The lay concept of "desire" to have children was rejected. As one Women's Studies scholar wrote, "The concept of 'desire' is characterized by two desires: a desire to have children, and a desire to have children, ever, it has become increasingly problematic" (Nicolson 1997, 383). In many people never desire children, and in some instances, a recent survey of 1000 women in member countries showed that 60% of women would like to have more children than she would ideally like to have, and 40% would like to have more children than they would have wanted. The concept of "desire" to have children is a course totally compatible with the concept of "desire" to have children that I presented in the previous version.

Nevertheless, surveys on the "desire" to have children show a high percentage of voluntarily childless women who say they would like to have a child.

Seeing childbearing as an instinct was common for the early social sciences. Westermarck quotes T. H. Marshall, who viewed the "desire for progeny" as a frequent and strong phenomenon, "to all appearances apart from the sense of personal ambition, and separate from any demands of religion or requirements of support in old age, as to give the impression that it was the primitive faculty of philoprogenitiveness, acting so insensibly, naturally, as to have the character more of a plain instinct than of a human feeling" (quoted in Westermarck 1894, 379). Marshall thus appears more perplexed by this "primitive faculty" and is more eager to draw a line between "plain instinct" and "human feeling" than Westermarck.

Many lay comments today continue to talk about an "instinct" or "innate desire" to have children. They are often connected with the explanation of species survival – "a primeval urge to perpetuate the species" as a *London Financial Times* article put it (Tomkin 2006).⁴ It is therefore important to remember that Westermarck, a forerunner of today's evolutionary psychology, did not advance explanations on a species level. He explained the desire for childbearing with material, social, and (male individual) emotional mechanisms.

Version 2: The Socially Constructed Clock

While lay people today continue to talk about instincts, the term gradually disappeared from the vocabulary of the social sciences after World War II. The second wave of the women's movement and, a bit later, the emerging academic field of Women's Studies criticized abstract mythologies connected to motherhood and especially presumptions about any universal and automatic maternal instinct.

As social constructionism became dominant in Western social sciences in the 1980s, a view emerged whereby the "biological clock" was seen as a purely social phenomenon. The lay perception of an innate desire for children was rejected. As one Women's Studies textbook puts it: "This [maternal] 'instinct' is characterized by two desires: to have children, and to care for them. . . . However, it has become increasingly clear that this 'instinct' is a socially constructed myth" (Nicolson 1997, 383). Feminist scholars have also stressed the fact that many people never desire children and many pregnancies are unwanted. For instance, a recent survey of fertility intentions in 28 EU-member and acceding member countries showed that, while every third woman had fewer children than she would ideally like to have, as many as 10-15 percent had more children than they would have wanted (European Foundation for the Improvement of Living and Working Conditions 2004, 55-56). This is an important point, but of course totally compatible with the evolutionary explanations for avoiding reproduction that I presented in the beginning of this article.

Nevertheless, surveys on childbearing intentions usually find only a small percentage of voluntarily childless people. Most men and women everywhere say they would like to have at least one child. This desire is ignored or explained

by social pressure and "discourse" in constructionism and postmodernism. A bit surprisingly, quite a similar view is found among evolutionary psychologists.

Version 3: A By-product of Evolved Psychology

Evolutionary psychologists and other theorists often provide two complementary explanations for why humans have children: "sex suffices" and "caring takes care of it." All adaptations promoting heterosexual intercourse (sexual desire, romantic love, the conjugal bond, etc.) can be considered sufficient for procreation. Then, once the child is born, adaptations for caring and attaching suffice. There is no direct wish to have children. According to the leading evolutionary psychologist Steven Pinker (2006, 139),

sociobiology is [often] refuted by the many things people do that don't help to spread their genes, such as adopting children or using contraception. In this case the confusion is between the motive of genes to replicate themselves (which does exist) and the motive of people to spread their genes (which doesn't). Genes affect their goal of replication via the sub-goal of wiring people with certain goals of their own, but replication per se need not be among those sub-sub-goals: it's sufficient for people to seek sex and nurture their children.

In this view, the question is why we want so much more sex than reproduction demands – as Jared Diamond (1997) asks, why is sex fun? – not whether sexual desire and romantic attachment are enough from the point of view of reproduction.

The most influential monograph on evolutionary theory and mothering (Hrdy 1999) does not discuss an evolved desire to have offspring. Hrdy's main aim is to emphasize the complicated chain of successive elements that trigger attachment and care after the woman has already become pregnant or the child is born. She also discusses how some species rehearse parenting skills in previous life stages: Babies universally attract primates, and female primates in particular are often used as "allomothers" (Hrdy 1999, 161-64; cf. Nicole Kidman's baby dolls in the introductory quotes). Additionally, Hrdy suggests that contemporary child spacing patterns, where the ideal is three or more children with large birth intervals, may be close to female reproductive behavior in prehistoric times. Otherwise the book does not mention a desire for children. Likewise, the topic is practically absent from Anne Campbell's (2003) excellent book on women's evolutionary psychology.

Thus the constructionist critique of maternal instincts would be partly true: There is no instinct to have children. While mating and caring is part of human nature, the urge to have children would be mostly a social construction. If childless people suffer, it is because they have witnessed how enjoyable parenthood may be; if parents long for more children, it is because they want to repeat previously rewarding experiences.

One frequent explanation for fertility transitions sees the biological clock as a typical meme. When to start and stop childbearing would be based on imita-

tion as fertility patterns spread (Boyd and Richerson 1995; Pinker 2006). For several years, I used to be troubled by the fact that the biological clock is actually social, unreliably, and that the children of relatives and friends are in a status connected to this, making me feel a "baby fever."

However, on an emotional level, the desire to have children does not appear to equal desire to have sex. It is in an e-mail discussion on the topic that I have had a similar experience. One person has hated cars all his life and another person has a car. Neither does the long-term goal to care for children: One may have a car and tiresome pregnancies may be a result. Other mothers appear to enjoy having a baby also appears emotional. The desire to have a child is connected with actual pregnancy and do evolved traits play any role?

Version 4: A Weak but Evolved Desire

In contrast to the standard view, I suggest that stress that reproduction is too costly, and that the desire to have children, which triggers the "baby fever" adaptation, serves a different sort.⁵ In the last decade, such a view has been especially among sociobiological theorists. For instance, Paul Turke (1989) suggests that the desire to conceive children is a result of the desire for intercourse and for economic stability (MacDonald (1999, 228) sketches a model of such a system):

I suppose that the default mating strategy (Turke 1989). However, if the mating strategy will result in poverty, then the desire to have children would result in relatively low status. If one's social status, there is a...

Economists and biologists have argued that wealth inheritance and accumulation appear to enhance fitness (Rogers 1993). Economic theory on fertility, therefore, suggests that – thus Rogers defines "repro-

tion as fertility patterns spread from elite groups throughout the population (Boyd and Richerson 1995; Hill and Reeve 2004, 398).

For several years, I used this argument in my teaching, precisely because it contradicted lay perceptions of what is and is not "biological." The biological clock is actually social, unrelated to any direct adaptations, I claimed. Caring for the children of relatives and friends, seeing other people's children and the status connected to this, may indeed constitute the main way of transmitting "baby fever."

However, on an emotional and motivational level, the desire to have a baby does not appear to equal desiring other things. As one Finnish woman expressed it in an e-mail discussion on baby fever, "It is seldom the case that somebody has hated cars all his life and then suddenly feels he can't live without getting one." Neither does the longing for a child equal the desire to have sex or an urge to care for children: One may well experience one without the others. Unwanted and tiresome pregnancies may be followed by strong maternal affection, while other mothers appear to enjoy pregnancy but not actual child care. The desire to have a baby also appears emotionally distinct from the reserve and anxiety often connected with actual pregnancies (Hrdy 1999, 166). How can this be explained, and do evolved traits play any role in this?

Version 4: A Weak but Expanding Instinct?

In contrast to the standard evolutionary psychology argument, some authors stress that reproduction is too all-important to rely on one route only (sex leads to children, which triggers caring behavior from their parents and other kin). While I have not found any text dealing directly with the question of a possible baby fever adaptation, several authors presume there exists something of the sort.⁵ In the last decade, such "proceptive" behavior has been discussed especially among sociobiologically oriented demographers and population researchers. For instance, Paul Turke (1989, 66) speculates that there exists "a conscious desire to conceive children" but that it is relatively weak compared to the desire for intercourse and for economic success. Developing Turke's idea, Kevin MacDonald (1999, 228) sketches a conflict between two universal human motivational systems:

I suppose that the default mechanism is to adopt a high-fertility, early-marriage strategy (Turke 1989). However, in the event that people perceive that such a strategy will result in poverty while delaying marriage and having fewer children would result in relative economic ease and an increase or maintenance of one's social status, there is a shift to a later-marriage, low-fertility strategy.⁶

Economists and biologists have used modeling to show that, especially when wealth inheritance and accumulation is accounted for, very low birth numbers appear to enhance fitness (Rogers 1994; Hill and Reeve 2005). As in much economic theory on fertility, they presume the existence of desires to have children – thus Rogers defines "reproductive motivations" as the desire for sex *and* chil-

gender and age cohort, and is especially related to female reproductive control: "Genetic influences on fertility are most relevant when the number of children results from a deliberate and conscious decision, and when social norms and economic conditions allow a relatively broad range of life-course alternatives" (Kohler, Rodgers, and Christensen 1999, 254).

CONCLUSIONS

I have reviewed existing theoretical support for the existence of an evolved desire to have children, a hypothetical "baby fever adaptation." Evolutionary theory has produced many explanations for the phenomenon commonly called the "biological clock" or "baby fever," which presumably ticks or rises semi-mechanically, at a certain age, and especially among women. The fields of demography and population studies, behavioral ecology, economic and modeling theories, and behavioral genetics have contributed their own explanatory frameworks.

There appears to be no consensus yet on how baby fever is transmitted. Some explanations complement each other while others are incompatible. Several cognitive predispositions are aimed at limiting childbearing. Human fertility decisions are highly sensitive to environmental cues, among them levels of infant mortality (in high fertility regimes) and resources needed to invest in offspring (in low fertility regimes). Behavior aimed at avoiding childbirth, from spontaneous abortions and infanticide to contraception, are legion, making the "biological guillotine" stronger than any baby feverish biological clock.

Explanations for proceptive adaptations usually assume unconscious causes that are then reinforced by social customs. Few consider any direct, reflective wish for children. However, there is fresh evidence from behavioral genetics in support of genetically mediated behavior that is growing in importance for contemporary women. The heritability of childbearing decisions has been shown to increase as the number of children falls (Kohler et al. 1999). This fits the prediction by Udry (1996), who noted that in a society of wide female reproductive choice any genetic disposition to desire children would be selected for.

Thus the environment and social norms played a larger role for fertility decisions in the nineteenth century than in contemporary developed countries. This may be the reason why Westermarck (1894) related desire for children primarily to male sexual selection and not to maternal emotions, and why he removed his views on a childbearing instinct from the revised *The History of Human Marriage*. Otherwise, Westermarck's arguments hold well today, especially his point that the frequency of abortion and infanticide does not disprove the general desire for children, as social constructionism has claimed. Indeed, theorizing about childbearing has come full circle in a century: We can again be open to the possibility of evolved desires for children. It is not a question of any hard-wired "instincts," but of evolved cognitive predispositions that are context-sensitive and may be of growing importance for some generations of women.

More and different types of empirical data are needed to proceed from here. As Haaga (2001, 58) puts it, "We need much more direct evidence on the 'psychological proximate determinants' of fertility preferences, including aspirations for one's children, perceptions of status, and the avenues of social change. What are the cues that convince large numbers of people that the rules of their society are changing?" Future research has a fascinating task in clarifying the contextual and emotional ingredients of fertility behavior, including what "baby fever" is really all about.

ACKNOWLEDGMENTS

I thank Marko Hamilo, Rosemary Hopcroft, Markku Javanainen, Markus Jokela, Janne Kivivuori, Hanna Kokko, J. P. Roos, J. P. Takala, Stephen Sanderson, and Heikki Sarmaja for comments and suggestions on earlier drafts of this paper. It is part of the research study "Fertility Patterns and Family Forms," Academy of Finland, project number 208186.

NOTES

1. I here ignore other uses of the "biological clock," e.g., as a metaphor for our sense of day and night.

2. An integrative framework is provided by evolutionary demography's life course perspective (e.g., Low 1991; Kaplan and Lancaster 2003), but it does not completely solve the question of how to assess the impact of cognitive triggers on various levels.

3. Interestingly, in the fifth edition of *The History of Human Marriage*, published in 1922, Westermarck omitted the words "universal" and "instinct" with regard to childbearing, and the discussion of a desire for children is reduced to one page (Westermarck 1922b, 31-32).

4. From a neo-Darwinian point of view, species-level explanations are faulty. Behavior that favors genetic interest may well lead to community or species destruction.

5. Obviously, much demographic research concerns "fertility demand" and measures explicitly stated desires and reasons affecting childbearing decisions. Researchers assume and find a general desire for children, but do not explain its existence theoretically. Miller (1992) found evidence of personality traits and developmental experiences in childhood that affected fertility intentions.

6. Note that Turke is credited for having had the same assumption, not for having provided any empirical evidence.

CLAS
ENV
AI

A Darwi

The conventional view in so
transmission down the gener
cultural. According to this vi
different quantities of resou
petuation of class difference
environmental hypothesis, f
professional class, because
point to a role for individual
manner insensitive to class e

An alternative hypothes
the specialized knowledge a
are developed from biologic
the population. This hypoth
instead focuses on individua
advantage over strict environ
ability and of according with

After reviewing the evi
this chapter offers a synthes
viduals could in principle a
grandchildren. The basic ide
acted by culturally transmit
mates with one or more elev
average chance of bearing