

ROUNDTABLE COMMENTARIES

Wanting Women Isn't New; Getting Them Is—Very

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Poor and powerless men have always wanted women. The question is, What made them rich and powerful enough to get them?

I don't believe that Stoic philosophy, St. Jerome and friends in Rome, or even Hildebrand and the rest of the medieval church pulled it off. I believe that the first great transition from despotism to democracy in human history was like a transition from despotism to democracy in North American paper wasps, Australian superb fairy-wrens, or East African naked mole-rats might be. It came about as dominants (with the division of labor that grew with industry) had more to gain from subordinates, and as subordinates (with the mobility that followed a cash economy) had more freedom to flee (Betzig, 1994, 1995b).

The evidence suggests that men in the Middle Ages—counts or bishops, priests or castellans—had as many women as they could afford. That evidence includes

- ninth-century census records from Santa Maria di Farfa and St. Germain des Prés (where there was a dearth of young women on dependent farms, and an excess of young women housed in the monasteries);
- parish records from early modern England (where more than half the population 15-24 years old was "in service," and estate staff sizes ran in the hundreds among upper gentry and peers);

- the fifteenth-century Florentine *catasto* (which showed the richest quartile of households held 30% of the married women and 37% of the youngest children);
- chronicles (like Lambert of Ardes's account of early thirteenth-century Count Baudoin, whose bedroom had direct access to the servant girls' quarters, to the rooms of the adolescent girls upstairs, and to the castle nursery; who fathered at least 23 bastards and another 10 legitimate daughters and sons; and whose "loins were stirred by the intemperance of an impatient libido...; very young girls, and especially virgins aroused his desire");
- records from thirteenth- and fourteenth-century French inquisitions (in which, according to one witness, local priests "formed a sort of equestrian class, who finally bestrode anyone they fancied");
- papal dispensations (hundreds of which let priests' sons be ordained);
- secular laws (like the Bavarian and Alamannic Codes, which fined men who had lain with other men's maids—the fines being paid to their lords);
- epics, poems, short stories, lais, and *pastourelle* (which are—from Boccaccio's *Decameron* to Andreas Capellanus's *Art of Courtly Love* to Chaucer's *Canterbury Tales* and beyond—filled with seductions by rich men of lower-class girls).

This evidence does not add up to a DNA fingerprint, but it's all the evidence we've got. And every thread in the tapestry points the same way. Rich men in the Middle Ages, as in other ages, married monogamously but mated polygynously (reviewed in Betzig, 1995c).

What, then, was the point of medieval "social controls"? I think churchmen (in particular, non-inheriting latter-born sons) prohibited divorce and remarriage, aristocratic incest and concubinage in order to keep laymen (in particular, their inheriting elder brothers) from finding legitimate wives and siring legitimate sons. As a result, I think churchmen received bigger shares of their fathers' estates (Betzig, 1995c). I do not think this strategy was "maladaptive" at all. The

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bulk of canon law was not about the production of *bastards*; it was about the production of *heirs*. Both elder brothers in castles and younger brothers in monasteries made bastards whenever they could—and turned a blind eye or, like Lambert of Ardes, even approved. But they also had this choice: let dad's estate (1) pass to a son of one's own, or (2) pass to a brother's son. Both churchmen and laymen preferred choice number one.

MacDonald notes that Charles II's spectacular seventeenth-century sexual career "was considered scandalous" and "lowered public confidence in his regime." But it was always thus. As Sir Ronald Syme, for instance, put it in *The Roman Revolution*: "The best of arguments was personal abuse. In the allegation of disgusting immorality, degrading pursuits or ignoble origin the Roman politician knew no compunction" (1939:149 also Betzig, 1992). Lesser men—aristocratic or plebeian—have *always* wanted more women. The question is, What made it possible to get them? I don't think the answer lies in "social controls."

I think the answer lies in ecology. The transition from despotism to democracy in state societies is, as MacDonald points out, a novel event. It seems to coincide with a completely novel "ecology": the shift to an industrial economy in Europe over the last few centuries. What in the rise of industry might have produced the rise of democracy (that is, political equality) and monogamy (that is, reproductive equality)? Part of the answer lies in the division of labor (Betzig, 1982, 1986). Skills proliferated; so more subordinates gained bargaining power. Another part of the answer has to do with mobility (Betzig, 1994, 1995b). Most paper wasps, blue fairy-wrens, and naked mole-rats live in despotisms. Strong wasps, wrens, and mole-rats oppress the weak; winners' genes proliferate, losers' do not (e.g., Reeve and Ratneiks, 1993; Pruett-Jones and Lewis, 1990; Sherman, Jarvis, and Alexander, 1991). What might turn a paper wasp, fairy-wren, or mole-rat society into a democracy? In a word: mobility. Societies are "skewed" when subordinates get trapped (Vehrencamp, 1983; Brown, 1987; Emlen, 1991). In fair groups everybody has an equal chance to get out. In the same way, over the farmers of history—from Mesopotamian planters to Roman peasants and chained gangs to medieval small farmers and serfs—strong arms extended

themselves by force (consider, e.g., Bloch, 1940). What do traders have that farmers lack? Again, in a word: mobility. When strong arms reach out in their direction, they are at liberty to walk.

I suspect that reproductive equality—like political equality—has increased dramatically over the last few centuries (Betzig, 1995a; Betzig and Weber, 1993, 1995). And I am certain that we are not yet—in either respect—all the way there.

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Behavioral Ecology, Levels of Analysis, and the Generation of History: A Critique of MacDonald

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By the time social and political scientists have finished reading Kevin MacDonald's article, they will be utterly convinced that evolutionary theory is largely inappropriate to the study of the complex social organization so typical of humans. This might be a valid conclusion to draw from MacDonald's discussion of monogamy, but I believe it is wrong.

There is a fundamental problem with MacDonald's understanding of evolutionary ecological theory. Contrasting it to his own "explicitly multivariate and nondeterministic framework," he implies the former is deterministic, causally simple, and reductionist. Each of these propositions can be easily dismissed (for a clear recent statement, see Smith and Winterhalder, 1992). Here I will focus only on the claim that the theoretical legitimacy of evolutionary ecological theory stands or falls on whether it can accurately predict all outcomes. As an example, MacDonald argues that insofar as evolutionary ecological theory cannot explain why the czar could not suppress the Bolshevik Revolution, it provides only a very poor and incomplete explanation for the marital forms that characterized post-revolutionary Russia.

More correctly formulated, evolutionary theory generates a set of models that identify the critical ecological and (in the case of social organisms) socio-economic and political factors that may be important in generating decisions, behavioral strategies, and hence (at a more macro level) institutional arrangements. The set of decisions currently at issue pertains to the number of women to whom a man can concurrently be married. Numerous factors, ranging from

abiotic to legal, will conceivably place constraints on the strategies available to individuals and groups, insofar as such factors affect the fitness payoffs associated with any particular strategy. Many of these constraints will themselves have been shaped by geopolitical processes that, if they are explicable in terms of evolutionary forces at all, may draw on quite distinct evolutionary ecological processes from those relevant to the study of marriage.

Hence, the claim that evolutionary ecological theory provides an inadequate explanation of post-czarist Russian marital practices because the theory fails to account for the success of the revolutionaries in 1917 is a non sequitur. Indeed, very different evolutionary ecological models would be used to make predictions about the course of such internal conflicts. Such models specifying the outcome of internal conflicts between dominants and subordinates have existed within evolutionary ecology for over ten years (see recent review in Boone, 1992), but MacDonald appears to be unaware of them. In short, it is hardly surprising that historical outcomes are underdetermined by evolutionary ecological models, if inappropriate models are drawn on.

My critique of this alarmingly odd chain of logic (the Bolshevik example) may appear to be somewhat picky and peripheral, but it actually gets to the heart of the problem with MacDonald's message. In many parts of the article, the author seeks to discredit evolutionary accounts with just such argumentation, proposing in their stead that explanations for institutions like monogamy should be sought within the variety of complex "internal political processes whose outcome is underdetermined by evolutionary/ecological theory." But where does this black-boxing of explanatory processes get us? Indeed, the author's treatment of socially imposed monogamy, attributing it loosely to the political maneuverings of powerful institutions and disgruntled minorities, goes well beyond such sterile theoretical posturing, and could well (with a little more thought) be developed within an evolutionary ecological framework, just as were the models of Richard Alexander and Laura Betzig.

However, instead of pursuing this line of investigation, MacDonald simply postulates that ideologies are not only unpredictable but also insensitive to self-interest. This approach is not only premature, it directs us, a priori, away from further exploration of this intriguing topic. In short, MacDonald's work in this area may well represent valuable descriptive ethnography and social history—and he is

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certainly right to explore additional complexities within (and perhaps beyond) the models produced by Alexander and Betzig—but the theoretical message of this article is both weak and poorly supported.

For political scientists interested in the potential applicability of models derived from the principle of evolution by natural selection, it might be fair to point out that the relationship between historical and evolutionary processes is one of great concern to evolutionary biologists. The debate has, of course, been made popular by the writings of Stephen J. Gould and Elizabeth Vrba. More analytically, theoreticians and empiricists have been concerned with identifying the relative importance of unique contingencies as opposed to general laws in shaping the course of historical change. Historians and evolutionary biologists differ radically in the emphasis they place on historical happenstance versus general principles, on chance versus predictability, and ultimately on historical versus scientific processes. The critical question of *how adaptive processes give rise to history* has recently been addressed by Boyd and Richerson (1992). The integrative approach offered by these authors would appear, at this stage, to be more fruitful than the somewhat premature claim for the inadequacy of evolutionary ecological theory made by MacDonald.

Finally, I find questionable MacDonald's conclusion that non-monogamous sexuality in the West has not typically

been a major source of increased reproductive success. First, anthropologists have long known that marriage and mating are not the same thing, and Westerners should not be exempt from this dictum. Second, much of family law has to do with inheritance and property, not the production of children. Third, without DNA evidence we will always be gossiping about the antics of our ancestors; my own suspicion, however, is that extramarital relationships did (and do) vary with socioeconomic class—indeed, there is some evidence for this (Perusse, 1994)—and that through most of human history reproductive success would have been affected accordingly.

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Law and Monogamy: A Troubled Relationship

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I should at the outset state the obvious, namely that MacDonald's theoretical model must stand or fall on its ability to account intelligibly and consistently for the evidence that survives concerning the development of marriage doctrines and their practical acceptance in earlier European societies. As a historian of European law, I find MacDonald's conclusion in the closing sentence of his article consistent with much of the evidence about the de-

velopment of Western marriage practices that I have examined (Brundage, 1987). There are, however, relevant situations that he fails to address—some of which will bolster his argument, although others may raise doubts or uncertainties.

One relevant situation that MacDonald does not address in his article seems to support his argument rather forcefully. This has to do with the marital status of slaves in Roman antiquity. Immemorial practice in the Roman world denied slaves (and at times other subordinate groups as well) *conubium*, that is, the capacity to enter into lawful marriage (*iustae nuptiae*), from which alone legitimate children could be born. Roman jurists described the relationship of slave couples as mere *contubernium*, a de facto union that enjoyed no protection at law (Treggiari, 1991). This remained true throughout the classical period of Roman law (which can be dated roughly between 117 and 284 C.E.; Schulz, 1946).

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Christian authorities from very early in the church's history enunciated a policy concerning slave couples that differed radically from the conventional rules of Roman civil law. St. Paul, for example, insisted at the outset of Christian history that social status had no meaning among Christians (Galatians 3:28; 1 Corinthians 7:21-22). This egalitarian position, however, long remained a theological ideal, rather than a practical reality. Even after the time of Constantine I (r. 312-337), when Rome's rulers became at least nominally Christian, the old rule that slaves could not marry remained a staple of Roman civil law. Constantine himself, indeed, bolstered the traditional prohibition (Cod. Theod., 1905:12.1.6; Cod., 1963:5.5.3; Falcão, 1973), which still remained the law of the Roman world two centuries later under Justinian I (r. 527-565; Cod., 1963:9.11.1; Nov., 1963:22.10-11).

The significance of all this for MacDonald's argument lies in the fact that from the time of Pope Calixtus (r. 217-222), the Roman church fashioned its own rules about slave couples, rules that flatly contradicted the civil law norms. The unions of slave couples, according to the papal rules, counted as full-fledged marriages within Christian communities, despite the civil law's prohibition of slave marriage (Gaudemet, 1955). Ecclesiastical authorities thus implicitly claimed autonomy from the rules of civil law. They asserted the right to create their own marriage law, different from, and even contrary to, the civil law of the Roman state. They continued to maintain that position, moreover, even after the highest authorities of the Roman government converted to Christianity and thus became in principle subject to the church's rules on marriage, as on other matters.

Adding further confusion, Constantine and his successors granted Christian bishops the power to adjudicate disputes among Christians and instructed provincial civil authorities to enforce the decisions of the *audientia episcopalis*, as the bishops' courts were styled (Gaudemet, 1989). Thus, a Christian slave couple might count as married persons for ecclesiastical purposes, while under civil law they were not, and never could be, married either to each other or to anyone else.

At the same time, moreover, the boundaries between civil law and church law became increasingly blurred, once the decisions of the episcopal *audientia* became enforceable by civil authorities. It might seem that the practical solution to this unsatisfactory situation would be to allocate to each court system, the civil and the ecclesiastical, jurisdiction over different types of matters. In theory, such a separation of jurisdictions did come to be the rule. But reality continued to be considerably messier than legal theory supposed that it ought to be. What if, for example, our slave who was married in the eyes of the church, but incapable of being married in the view of civil authorities, should now be emancipated, while his spouse was not? For the *audientia*, this changed nothing: the slave and his wife were still married, as they had been before. But in civil law they would

still not count as married, since she was still a slave. In civil law, consequently, the former slave was free to remarry, while in canon law he was not. A similar, but even more intricate problem arose when one party to a non-Christian marriage converted to Christianity. Was the convert still married to the unbaptized spouse? This is another set of issues that St. Paul dealt with (1 Corinthians 7:12-16), but it has nevertheless continued to resurface in various guises ever since his time. These problems become still more critical when one of the parties dies and the joint property must be partitioned.

The situations described above carry obvious implications for the way in which monogamy emerged as a social norm. They might perhaps be dismissed as marginal situations—at least until one remembers that the Roman economy depended upon huge numbers of slaves, who arguably made up thirty-five to forty percent of the population at some points in Roman history (Watson, 1987). Still more central, and absolutely critical for MacDonald's argument, in my view, was the prevalence in the Christian world of the principle that a valid marriage is indissoluble and the slow infiltration of that doctrine into Western social norms. MacDonald's article, however, deals only cursorily with that important theme. The history of the related problems of marital separation, divorce, and remarriage likewise need to be examined more thoroughly in any appraisal of MacDonald's theory of socially imposed monogamy, although space will not permit detailed discussion of these matters here.

Finally, let me mention very briefly two further points that struck me in reading MacDonald's article. MacDonald apparently accepts Jack Goody's belief that the medieval church rejected adoption and that consequently adoption disappeared in the Western world in late antiquity and reappeared only quite recently in Western societies (Goody, 1983). Goody's belief, however, is simply wrong. The medieval church never did ban adoption, and adoption continued to be practiced in the West throughout the Middle Ages, as I and others have shown (McKnight, 1985; Bonfield, 1991; Sheehan, 1991; Brundage, 1994). Lastly, I have reservations about MacDonald's characterization of medieval Christianity as a unified institutional entity. This sweeping generalization is bound to raise warning signals in any historian's mind. Certainly at a high level of abstraction Christian norms were supposed to be uniform throughout Western Europe. When one examines the Church's structure more closely, at higher degrees of magnification, so to speak, this monolithic impression breaks down rather dramatically. The effectiveness of canonical enforcement mechanisms, for example, varied widely between regions and over time. Likewise, the wealth and political power of monasteries, prelates, and parishes spanned an exceedingly wide spectrum (Brundage, 1995). Variances of this magnitude necessarily inject a high degree of uncertainty into grand generalizations about the extent and the exercise of ecclesiastical power in medieval Europe.

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Christianity and Socially Imposed Monogamy: An Incomplete Explanation

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MacDonald's historical sketch of the emergence of socially imposed monogamy in Western Europe is a very scholarly piece of work, which undoubtedly will serve as an important reference in the future. MacDonald fails, however, in this sketch to put the phenomenon he investigates in the appropriately broad historical and ecological perspective. Thus, (1) he does not give us the reason that makes socially imposed monogamy in Christian Europe such an interesting historical phenomenon; (2) he analyzes the ideology and some of the effects, but not the economic—and therefore, ecological—conditions for the

rise of monogamy; (3) he shows unnecessary restraint in answering the question for the determinants of the phenomenon altogether, and, therefore, he does not discuss the consequences of his findings for the theory of group selection. I will discuss each of these shortcomings in turn.

Early in his article, MacDonald says that "advanced levels of economic production and political organization are thus consistent with both egalitarian and anti-egalitarian sexual customs....[W]hether intensive polygyny or socially imposed monogamy result...is undetermined." This would have been an appropriate statement by an observer living in the early fifteenth century at the latest. But now we are wiser, and history has demonstrated that what we nowadays can correctly call "advanced levels of economic production and political organization" are as little consistent with intensive polygyny as they are with slavery or castration of future cabinet members in order to ensure their loyalty. Where do the owners of big harems live today, and what say do they have in world affairs? What is the status of societies with legalized polygyny on world markets today?

The answers to these questions lead immediately to the core of the problem: the societies of Europe that practiced monogamy in all social strata, by virtue of their technological, economic, and political achievements, came to dominate the world from 1500 onward, populating the Americas and Australia and colonizing much of the rest. In their striving to keep up with the West, societies that practiced polygyny—whatever their cultural background—adopted

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monogamy. In those societies that still allow polygyny, the modern segments of the political elite have abandoned it, as they have abandoned clitorrectomy. In other words, there was an evolutionary competition between polygyny, a ubiquitous phenomenon in states and tribal societies all over the world, and socially imposed monogamy, and the latter won. This victory is what makes the phenomenon—the rise of this institution in Europe—so interesting, and any evolutionary explanation of it would be incomplete that did not try to explain why this mutant strategy first emerged in Europe and why it won on a global scale.

Ideology and religious beliefs, however, cannot serve as ultimate explanations for either event. No ideology or religious belief system, once it prescribes behavior in this world, serves the needs and desires of all members of society equally well. It need only serve those of the dominant groups; the rest of the population may be forced into acquiescence. The nobility in the society of the Roman Empire, as well as in its successor states in the western Mediterranean and in the rest of Europe, was forced into monogamy before the rise of the political dominance of Christianity. Also, monogamy has survived so far the secularization of Western societies. In addition, there are non-Christian traditions of castes of religious professionals living in temporary or permanent celibacy, traditions that are not connected with a religious dogma favoring monogamy. Thus, the Church and Christian dogma may have been instrumental, but they were not sufficient causes for the establishment of monogamy in the West. Ideology alone cannot accomplish such feats.

Nor was the sole cause the diffuse, highly fragmented structure of the ancient Mediterranean city-states. Rather, it was the persistence of small, independent artisans and merchants in that fragmented political structure, which characterized European history from antiquity, that served as the economic and technological foundation of the spiritual power that forced the class of big landowners—the nobility—into monogamy. Investing the whole family property into just one son is a viable strategy only in the case of land ownership. For all other kinds of family property, including cultural capital, it is safer to invest in more than one child, and into sons and daughters alike (Boone, 1986). The permanent competition among territorial governments of all kinds, also characteristic of European history, placed a high premium on economic efficiency.

Marriage systems with socially imposed monogamy, which permitted a much more flexible transfer of capital between generations, contributed substantially to the greater economic efficiency of the West. In addition, individuals brought up in a nuclear family (with one father and one mother) may receive more personal attention and a better education, and may therefore act more independently and show more entrepreneurship in adult life than individuals brought up in a harem. Even for the egalitarian societies of the developed world of today, a more equal income distribution brings higher growth rates (*The Economist*, November 5, 1994).

Now, how can we analyze the economic basis of a society in terms of behavioral ecology? There are many studies that try to relate internal social order, especially the mating system of primates, with the basic ecological structure of the environment, that is, the distribution of food, predators, and shelter (for an overview, see Smuts et al., 1987). If MacDonald is right in thinking that evolutionary theory cannot determine whether "intensive polygyny or socially imposed monogamy" will result from the conflict of interest over the distribution of mating chances, then there is no hope for ever arriving at a behavioral ecology of humans that deserves its name. Why this pessimism? Environments that favor socially imposed monogamy do not have to exist, but, once they have evolved, they will give rise to this marriage regime, not by a probabilistic, but by a deterministic process, provided there is enough time for adaptation. In acephalous societies, we have monogamy or a mild form of polygyny, which at various places later in history were replaced by the intensively polygynous regimes that MacDonald describes. Therefore, under certain circumstances, a system of monogamy is not invasion-proof. Conversely, the rise of socially imposed monogamy in the West must have been advantageous to social groups that also had the power to enforce it.

The environmental conditions that made the rise of socially imposed monogamy possible must still exist today; otherwise, polygyny would have reemerged. There are many silverbacks (not the least in academia) in present societies who would think about marrying a second, younger wife if this were a legal option. But the coalition against this still holds, as it has for centuries. Despotism with intensive polygyny may be the individually optimal male reproductive strategy, but it certainly is not the globally enforceable optimal male reproductive strategy (just as male chimpanzees may wish to monopolize females, but in their usual habitats find themselves unable to). MacDonald correctly points out that here natural selection might work between groups, too. The fact that the Europeans and not the Arabs nor the Chinese colonized Australia and the Americas is evidence of this selection between groups, but we do not have to assume a selection within groups against socially imposed monogamy in all possible environments.

It is a pity that MacDonald did not further analyze economic differences between societies with the two marriage regimes in question in terms of behavioral ecology. Therein lies the key to an understanding of socially imposed monogamy, together with its most important demographic consequences—below-replacement reproduction.

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Redeeming Medieval Man

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The institute where I work overlooks the town of Erling with its traditional Catholic church topped by an onion-shaped steeple. With minor differences, the scene is typical of this old civilization. When one travels through Germany or any country of Europe, it is difficult to avoid the many churches, at least one per town. The interiors are often gorgeously decorated. Even the most out-of-the-way village can boast a magnificent display of brass and stucco icons. Often the local church is the only building of any impressiveness. Clearly a significant investment has been made by the local people in erecting and maintaining these edifices.

What has motivated this prodigious effort? An oft-heard view is that the common people have for millennia been exploited by the clergy. It is an immensely popular view among secular academics that the relationship between Church and people has been essentially an exploitative one, in which the clergy played on the ignorance, superstition, and credulity of the uneducated peasantry. What one might call the economic or, more to the point, the Marxian theory of the development of the Catholic Church has been augmented by evolutionary hypotheses. For example, Balch (1986) and even more popular authors (e.g., Bridge, 1980) maintain that celibacy is an organizational technique for simulating the widespread use of eunuchs in Eastern societies. Childless subordinates are less tempted, being less able, to practice nepotism, and thus can be coopted (exploited) more thoroughly by their masters.

Betzig (1992:376) puts the finishing touch on this damning portrait of the medieval Church. She argues that, beginning in the late Roman era, young priests of aristocratic origin agitated for society-wide restrictions on reproduction as a strategy against elder brothers who had inherited the father's estate. This strategy increased the chance of the priests inheriting property as back-up heirs or when the Church inherited. They could then use this wealth as "a means to reproduction." She concludes that "the whole

point of *monogamy* must have been *polygyny*... [And] the point of *celibacy* must have been *polygyny*, too" (p. 377). In this view, clerical celibacy and the morality of restraint have been motivated by aggression rather than altruism.

These critical analyses of the Church have political and ideological significance when put in historical perspective. The continuing humanist criticism of religious institutions belongs to the Western academic tradition whose outlook was influenced by a long struggle against clerical control of education (Caton, 1988; Collins, 1994; for a paradigm example, see Desmond and Moore, 1994, on the Church of England's hostile reception of Darwin's theory of natural selection and anti-clerical exploitation of the theory). Perhaps that is why some assertions of Church corruption and deception are indistinguishable from denunciation or ridicule. The academic current against religion has been so pronounced in psychology and psychiatry that Donald T. Campbell (1976) could devote a major paper to arguing that these disciplines "in all their major forms are more hostile to the inhibitory message of traditional religious moralizing than is scientifically justified" (p. 167)—and this from a purely physicalist evolutionary position.

Existing evolutionary accounts of the Church's power and practice have undoubtedly advanced our understanding. But they have unsatisfactory aspects, even before one investigates further. To believe them, one must accept the invidious and improbable view of peasants, and of sincere celibate monks, as dupes. Furthermore, this credulity had to persist for many generations, the Church's institutional machinery being constructed from the top down in a manner insensitive to the interests of the masses.

MacDonald's account goes some way toward redressing the Enlightenment slander of the common people of the Middle Ages, and of the Church organization, by presenting an exposition of the functional role of the Church in a struggle of institutional politics. Significantly, his account is, like the Enlightenment version it challenges, a physicalist one. But it requires no implausible stereotypes. It does not require us to view the mass of people as fools, or as passive clay molded by elites. Instead, MacDonald's analysis relies on a realistic image of humans as strategizing individuals.

MacDonald's argument accords with data and analyses coming from evolutionary biology, linguistics, political science, and other disciplines that indicate the far-ranging consequences of short- and long-term strategies in social affairs. Animals with higher processing capacity, including humans, are conceived as strategists who owe part of their adaptiveness to deliberately deployed combinations of

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species-typical behaviors calculated to achieve goals (e.g., Eibl-Eibesfeldt, 1950; Hold-Cavell and Borsutzky, 1986; Grammer, 1989; Datta, 1992). Strategies thus have innate components, also called phylogenetic adaptations. An example is humans' evolved repertoire of emotions, which prepare the individual for specific types of action adaptive for the social context (Frijda, 1986; Frank, 1988; Eibl-Eibesfeldt, 1989). Individual social strategies shape daily interactions at the verbal and nonverbal levels (Ervin-Tripp, 1976; Bandura, 1977; Ekman, 1985; Brown and Levinson, 1987), as well as at the level of relationships and, consequently, social structures (Mauss, 1968; Lederman, 1986; Hinde, 1987). Means-end rationality, bound by limited information and processing capacity, has long been recognized as a necessary factor in understanding organizational and economic dynamics (Blau and Scott, 1963; Cyert and March, 1963; Sargent, 1993).

MacDonald's article is a significant contribution to biopolitics. The most obvious relevance is to the question of cultural differences, especially regarding sexual egalitarianism. The latter subject is of great interest to biopoliticians because it belongs to the broader subject of the connection between reproductive behavior and institutions. This interface is rightly of major theoretical importance, because no behaviors can be expected to be more "biological," more innate, than those incident to reproduction, and understanding the nature and effects of institutions is the *raison d'être* of political science. It would have been interesting to see MacDonald compare his analysis with more of the existing evolutionary theories of the politics of reproduction. For example, the exchange between Roele (1993) and Masters (1993) brings out many issues of relevance, including the point that monogamy tends to equalize male fitness. MacDonald is not alone in missing pertinent literature in this multidisciplinary field. Both he and Roele (1993) manage to discuss the social control function of traditional religion—the latter with regard to control of conflict and free-riding—without reference to Campbell's co-evolutionary analysis of archaic religious orders (1976, 1983).

The argument could also be strengthened (but not weakened, I think) by consideration of the literature on cultural evolution. In MacDonald's account, the Church's institutional machinery accumulated through a series of inventions, each with some unforeseen impacts. The data presented is relevant to the issue of the genesis of social technologies (in sociological language, "structures of social control," or in this author's parlance, "control infrastructures"—Salter, 1995). Hence, the analysis would have benefited from a fuller exposition of existing social technology theory, which in some places touches directly on the reproduction-institution connection (e.g., Tiger and Fox, 1989; Reynolds, 1973; Gellner, 1983; Caton, 1988). The light treatment of this literature produces an element of reinvention in MacDonald's argument that institutional behavior is "underdetermined" by organic evolution. This position, explicated with powerful simplicity, could be overstated.

While macro features of institutional life such as polygamy/monogamy or despotism/egalitarianism are in significant measure the outcome of deliberate design, the element of competition should make combinations of features more biologically determined due to the constraint of human nature. For example, despotism and polygamy should co-occur more frequently than egalitarianism and polygamy (Betzig, 1986).

MacDonald's argument converges on that of W. H. Durham (1992), who suggests that celibate orders maximize horizontal (cultural) at the expense of vertical (genetic) reproduction. However, MacDonald goes beyond economic analogy by describing behavioral mechanisms by which celibacy has increased monks' popularity and hence political influence: they proved their altruism and spiritual priorities by stepping aside from the competition for wives.

Further investigation of this issue might identify finer-grained processes by which social techniques have been diffused, selected, and accumulated in the developing Church apparatus. MacDonald goes a good deal of the way in this direction, but in a manner analogous to an economist, identifying motives but not fully describing the behavior of the market participants. A consideration of Campbell's model of religion as a means of social control might have been instructive (1976, 1983). Description of social control mechanisms could have benefited from a consideration of other societies in which monogamy is the rule, namely, band societies. These have intense mutual monitoring.

Since MacDonald's critique of Betzig (1986) can be taken as a critique of naive sociobiological analyses of religion, a wider review of that literature would have been useful. Some tension is evident between analyses that dwell on proximate mechanisms and those that attempt to construct elegant theory from axioms of economic or fitness maximization. Theoreticians such as Masters (1993) and Campbell (1983) keep throwing wrenches into the gears of relatively pure genetic calculus by insisting on the causal agency of institutions, as does MacDonald. In general, unconvincing results are achieved by sociobiological theory unmediated by proximate mechanisms of individual and group strategies. This thought is well stated by Reynolds and Tanner in their review of the evidence on the functions of religious celibacy: "[W]hatever 'functions' celibacy may have, they are not universally applicable" (1983:147).

None of the criticisms raised here undermine MacDonald's argument. Rather, they are back-handed compliments, indicating just how pregnant MacDonald's theory and assemblage of facts are for the broader subjects of institutional life histories and social control in general.

To recapitulate, MacDonald presents the medieval Church as a champion of the lower strata's opposition to elite polygamy. It is a view entailing a relatively non-invidious model of Medieval Man. Instead of passive, exploited fools, we begin to see peasants and other supporters of the Church as self-interested strategists, and hence as specimens of humanity with whom we are familiar from daily contact.

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Political Processes and the Anomaly of Socially Imposed Monogamy

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Kevin MacDonald's article attempts to solve the puzzle of socially imposed monogamy in Western Europe. The puzzle is that political elites in most early and traditional states were able to translate their power into substantial perquisites, among them intensive polygyny. For some reason, however, political elites in Western Europe lost the perquisite of intensive polygyny, apparently during the late Middle Ages. Why the difference? What happened in Western Europe (but not elsewhere) that led there to the establishment and maintenance of socially imposed monogamy?

According to evolutionary theory, individuals generally behave in ways that enhance their inclusive fitness. Presumably, political elites in highly stratified societies should prefer a mating system, such as intensive polygyny, from which they and not others benefit. To the extent that such elites have the power and accompanying resources to establish and maintain such a system, they should do so. In the evolutionary calculus, intensive polygyny means more wives, more children, more grandchildren, and ultimately, a higher inclusive fitness.

Seemingly contrary to the straightforward predictions of evolutionary theory, however, the political elites of Western Europe became monogamous, as a result of social controls. MacDonald argues that socially imposed monogamy was a political outcome, and that evolutionary theory by itself is insufficient to account for it. Although the theory would predict that there will be conflicts of interest over mating systems, based upon presumed behavioral motivations and differing reproductive interests, it does not predict the outcomes of such conflicts. In stratified societies, a range of outcomes from inequalitarian to egalitarian can result, de-

pending upon those groups which win, lose, or compromise.

MacDonald looks at other scholars and their views. Alexander (1979) argued that socially imposed monogamy arose in nation-states because of a need for internal cooperation and solidarity in the context of balance-of-power races. The imposition of monogamy, since it results in a leveling of reproductive opportunities, encourages such internal cooperation and solidarity. MacDonald sees merit in Alexander's argument. For example, socially imposed monogamy in the Western world first appeared in the small, competitive city-states of Greece. Clearly, however, there are many historical examples of early and traditional states in which intensive polygyny, not socially imposed monogamy, was the rule. Thus, socially imposed monogamy, although it may be an effective response in some contexts to external threat, is not a necessary one.

Betzig (1986) argued that socially imposed monogamy arose with the appearance of industrialization as a response by political elites who were compelled to recognize their dependency upon and to share power with economic elites. The historical evidence, however, is that socially imposed monogamy emerged in Western Europe much earlier, in the late Middle Ages. Although Betzig's argument fails to account for the origin of socially imposed monogamy in Western Europe, it may help account for its maintenance, since industrialization creates a new set of elites, apart from the landed aristocracy, with different interests. Diminished cohesiveness among elites may lead to more egalitarian social controls.

After an extensive review of the work of historians, MacDonald identifies the proximate reason underlying the imposition of socially imposed monogamy in Western Europe in the late Middle Ages: the political activities of the Christian Church. Over time, a variety of social controls and ideologies fostered by the Christian Church and supported by women, along with lower- and middle-status men, sustained socially imposed monogamy. Among the social controls were prohibitions on divorce, prohibitions on endogamy, penalties for illegitimacy, controls on concubinage among elites, and the policing of sexual behavior both within and outside marriage. MacDonald shows clearly the extraordinary interest taken by the Christian Church in these domains and the considerable success it had in imposing its standards, even upon the elite classes.

What made Western Europe different, then, was a struggle among secular and ecclesiastical elites for political

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power, or more precisely, domains of authority. In areas identified by MacDonald, notably family, marriage, and sexual behavior, secular elites ceded authority to ecclesiastical elites. Although MacDonald labels this struggle internal politics, conflict between the ecclesiastical and secular elites in twelfth-century Europe was not entirely a matter of internal politics, carried out in entirely different ways within separate states. Rome was battling for papal supremacy against the Holy Roman Emperor and other rulers in Europe. It was a continental-wide struggle. The power of ecclesiastical elites was waxing, that of secular elites waning.

As MacDonald argues, there are probably multiple routes to socially imposed monogamy in stratified societies. Betzig's work (1986) shows that intensive polygyny is strongly associated with despotism. Accordingly, it seems likely that it is the reduction or elimination of despotism that leads to the disappearance of intensive polygyny. Further power sharing among political elites—perhaps due to an expansion in their number and variety—may encourage trends toward socially imposed monogamy. Thus, in Western Europe, ecclesiastical elites mounted a successful challenge against secular elites, and benefited both economically and politically from the imposition of a variety of egalitarian social controls upon secular elites. In a number of the city-states of Greece, egalitarian ideology was favored by the need for political elites to secure the cooperation of citizens in military efforts.

MacDonald's argument might be strengthened in three ways. First, greater consideration should be given to the tendency for cultural traits to become linked with other cultural traits. Intensive polygyny is compatible with despotism; socially imposed monogamy is compatible with democracy. Although socially imposed monogamy may be compatible with despotism, the combination of intensive polygyny and democracy should be rare or nonexistent. Second, his argument also would be strengthened by consideration of how the spread of socially imposed monogamy, even among the states of Western Europe, was due to

the economic and military successes of those states that were carriers of this cultural trait. Many cultural traits spread by the process of cultural selection, occasionally because of military conquest. They also spread by cultural diffusion, as often happens because of emigration, trade, and warfare. For example, the history of Western Europe and of socially imposed monogamy on that continent would have been quite different had the Muslims not been stopped at the gates of Vienna. Third, political communities do not exist in isolation from one another. The nature of internal polity depends upon problems of external polity. There should be tension between autonomous states that are adjacent to each other but possess vastly different political regimes. For example, it may be difficult for a democratic state where political elites practice monogamy to coexist with a neighboring despotic state where elites practice intensive polygyny or concubinage. As international norms become more egalitarian, the latter elites become anachronistic, and political competitors, both internal and external, find reason to challenge their power.

MacDonald has made a significant contribution to the explanation of the anomaly of socially imposed monogamy in Western Europe. The fact that a variety of different mating systems, both inequalitarian and egalitarian, are found in stratified societies does not violate evolutionary theory. Such systems result from largely unpredictable political processes involving the imposition of social controls through coercion and other sources of power. The work is a good illustration of how the careful investigation of anomalies is an essential step in theory building.

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Indeterminacy and Multiple ESSs in Evolutionary Theory

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Whenever conflicts of interest exist among individuals, the outcome cannot be predicted with certainty. This statement remains true when individual interests revolve around reproductive success. I admire MacDonald's article for stressing the indeterministic nature of human social institutions and for delving into the historical detail that will be required for a satisfactory account of socially imposed monogamy. It is important to stress that MacDonald's account is not an alternative to Alexander's (1979) and Betzig's (1986, 1993), but rather embeds their accounts in a larger and more complex framework.

I would like to show how indeterminacy can be incorporated into evolutionary theory and call attention to two important papers by Boyd and Richerson (1990, 1992) entitled "Group Selection among Alternative Evolutionarily Stable Strategies" and "Punishment Allows the Evolution of Cooperation (or Anything Else) in Sizable Groups."

The seeds of indeterminacy can be found in evolutionary game theory. Maynard Smith (1982) imagined two types of individuals that interact in pairs over resource items. "Doves" are prepared to share the items and do so with other doves. "Hawks" are prepared to fight for the items and therefore take them away from doves, but this means that they engage in damaging fights with other hawks. If these are the only two types in the population, then hawks either take over the population or evolve to a stable equilibrium frequency in which the benefits of stealing from doves are balanced by the costs of fighting with other hawks.

The introduction of a third strategy called "Bourgeois" radically changes the situation. The Bourgeois strategy follows the rule, "Act like a hawk if you are the first to arrive at the resource, but act like a dove if you are the second to arrive." If the cost of fighting exceeds the value of the resource item, the Bourgeois strategy can replace both hawks and doves, eliminating fighting from the population. Even though the Bourgeois who arrives first is prepared to fight, it never has to because the second comer is also a Bourgeois and will act like a dove.

The Bourgeois strategy introduced two important concepts to evolutionary game theory. The first is the concept of punishment. For the Bourgeois strategy to succeed, the Bourgeois individual must be prepared to fight harder for the resource than the resource is actually worth. The second is the concept of arbitrary social conventions. There is nothing special about the rule "hawk if first, dove if second." Rules such as "hawk if second, dove if first" or "hawk if bigger, dove if smaller" would do as well, as long as the difference is obvious to the members of the pair. Once a particular social convention evolves, however, it is an evolutionarily stable strategy (ESS) against any other convention. In a Bourgeois population, a mutant that followed the rule "hawk if second, dove if first" would fight all the time and go extinct.

Boyd and Richerson (1992) generalized this idea to large social groups. They showed that any social convention can be an evolutionarily stable strategy (ESS) if it takes the form (a) be nice if member of group performs x , (b) punish if member of group performs not- x , and (c) punish members who themselves do not punish those who perform not- x . Although x could be cooperative behaviors that are good for the group (such as monogamy), it could also be anything else, such as "stand on your head." The costs and benefits of the actual behavior become irrelevant if the rewards and punishments of the social convention are sufficiently great. Thus, Boyd and Richerson have opened a Pandora's box, releasing a potentially infinite number of social conventions that are internally stable and promote behaviors that may or may not be adaptive, when judged independently of the rewards and punishment that make them adaptive in the narrow context of the social convention.

Which particular social convention is likely to become established in a population? At one level, this question may not have a deterministic answer. We might use evolutionary principles to predict which social conventions individuals might want to establish, but the vagaries of history will determine the one that actually becomes established. At another level, however, the evolution of social conventions might be more predictable. Imagine that there are many social groups and that they do not all have the same social convention. Even though all conventions are internally stable, they may differ in their consequences at the societal level. If so, the most robust social groups—and the social convention that make them robust—might gradually encroach upon and replace the other groups. Alternatively (and equivalently), the other groups may convert to the best social convention after recognizing its superiority. Thus, the

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process that determines which of several social conventions spreads through the global population is very different and perhaps more predictable than the process that determines which social convention becomes established within a given population.

This is a theory of group selection among multiple ESSs (Boyd and Richerson, 1990), and it differs from standard group selection models in one important respect (see Wilson and Sober, 1994 for a general review of group selection as it relates to human evolution). Usually, group selection is invoked to explain the evolution of altruism, which is internally *unstable* and goes extinct in the absence of group selection. In contrast, the alternative social conventions are internally *stable* and will persist indefinitely in the absence of group selection. Even modest fitness differences at the group level may therefore be sufficient to cause the best social convention to gradually replace the others. In many ways the group selection of alternative ESSs is similar to Wright's shifting-balance theory of evolution (e.g., Wright, 1980), in which local gene pools replace each other based on differences in their epistatic genetic interactions.

These general concepts can be related to MacDonald's paper in the following way. If we consider monogamy vs. polygyny in the absence of social controls, we find a conflict of interest among various segments of society. We therefore expect a struggle in the imposition of social controls whose outcome is indeterministic. Since polygyny is favored by wealthy males, who usually hold the most power, we might expect them to usually prevail, as they have in the majority of societies. Occasionally, however, the various segments of society that favor monogamy prevail, after which monogamy becomes internally stable within those societies. Once this happens in at least some societies, the evolution of socially imposed monogamy becomes a between-group process rather than a within-group process. The fact that this cultural institution has been spreading from its few sources of origin may indicate that it is superior at the societal level, perhaps for the reasons that Alexander and Betzig have identified. However, it is not necessary to explain why monogamy per se is adaptive within any given society, because the costs and benefits of the actual behavior have apparently been overridden by the rewards and punishments imposed by the social convention.

It is important to emphasize that, when group selection occurs among alternative ESSs, the prevailing social convention may include many arbitrary and nonadaptive traits along with the adaptive traits that are responsible for its success. For example, it is possible that other features of Western European society are responsible for its success and that socially imposed monogamy is simply a "spandrel," rather than a part of the necessary architecture (Gould and Lewontin, 1979). On the other hand, the passion and the effort expended by the Church and other interest groups to curtail the reproduction of the elite suggests that monogamy was a central concern to European society and somehow fundamental to its operation. Perhaps it would be possible to actually correlate the productivity of specific societies and their ability to wage war with the degree to which monogamy and other egalitarian social conventions have been successfully imposed.

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ROUNDTABLE RESPONSE

Focusing on the Group: Further Issues Related to Western Monogamy

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I thank the commentators for raising a number of issues that require clarification or expansion. There is agreement that the development of monogamy in Western Europe is an important topic and that much more work needs to be done in the area.

Criticisms of the Theory

My argument is that we need to focus on internal political processes of social control to understand the historical development of monogamy. There is nothing in Borgerhoff Mulder's comments to indicate that I was wrong in pursuing this perspective. Her point is at best a terminological quibble about the meaning of "behavioral ecology."

Borgerhoff Mulder refers approvingly to an article by Boyd and Richerson (1992a), but she apparently fails to realize that my work is entirely within the spirit of their perspective. Surprisingly, Borgerhoff Mulder characterizes my account as an attempt to "discredit evolutionary accounts," when my emphasis is on exactly the types of internal political processes studied by game theorists and theorists of group processes (see Wilson's commentary and Boyd and Richerson, 1992a, b). My argument is that on empirical grounds we must go beyond an exclusive focus on deterministic optimization models, such as those of Alexander (1979) and Betzig (1986), which posit particular external ecological variables (external threat, the possibility of defection consequent to industrialization) as resulting in monogamy as an optimal, individually adaptive response for elite males. As a terminological issue, I can agree that my theory of monogamy as a group-level phenomenon resulting from indeterminate internal political processes is properly considered to be within the field of behavioral ecology, but to assert that I have somehow attempted to "discredit evolutionary accounts" is, to use one of Borgerhoff Mulder's own phrases, an "alarmingly odd chain of logic."

Borgerhoff Mulder states that my type of analysis "could well be developed within an evolutionary ecological framework," but she fails to indicate what should be added to my account to make it qualify as behavioral ecological. I want to make clear that my account is squarely within the evolutionary tradition. Wilson's comments highlight the central importance of game theory, and particularly the work of Boyd and Richerson, to conceptualizing how indeterminate internal political processes apply to historical phenomena (see also Salter's discussion of social technology theory as implying the same result). Boyd and Richerson (1992a) emphasize, as do I, the importance of happenstance, indeterminacy, and slight variations in initiating conditions in producing qualitatively different historical outcomes. In the target article, I emphasize the importance of happenstance in the face of highly similar initiating conditions in understanding variations in marital property law in England and France (see also MacDonald, 1990 for further examples).

For the same reasons I also emphasize the theoretical indeterminacy of military engagements. In his commentary, Strate makes the important point that the reproductive institutions of Europe would have been entirely different if the Muslims had not been stopped at the gates of Vienna. One might make the same point with regard to the much earlier Battle of Tours, the halting of the Mongol invasions in the thirteenth century, and the Christian Reconquest of Spain. The eventual superiority of Western political and social organization emphasized by several commentators (see below) was not at all apparent for a very long period of European history. Indeed, Western Christian societies were replaced by societies characterized by intensive polygyny in a wide area of North Africa, the Near East, and Southeastern and Eastern Europe as a result of Muslim expansionism, which ended only in the seventeenth century. It is thus reasonable to suppose that the continuity of Western reproductive institutions was dependent on only very slight differences in military capability, as well as events—such as

the conversion of Constantine—which can only be described as happenstance (see MacDonald, 1990).

Moreover, by adding social interactions to formal models, Boyd and Richerson show that there may be multiple stable equilibria. Particularly important here is that, as Boyd and Richerson (1992b) have shown, and as Wilson emphasizes in his comments, monogamy (or any other social condition) can be evolutionarily stable if group members punish non-monogamists and punish those who fail to punish non-monogamists. The actual social institutions regulating marriage may thus be an indeterminate outcome of internal political processes that punish non-monogamous behavior.

These theoretical results fit well with my emphasis on social controls as being of critical importance in understanding monogamy in Western Europe. The social controls described in the target article essentially act by punishing non-monogamous behavior, with the punishments ranging from hanging (for adultery) to social ostracism and paying fines. While this type of perspective is compatible with the importance of external ecological variables, it certainly does not require them. As Boyd and Richerson (1992a) note, differences between societies do not make it necessary to search for external environmental differences as an explanation.

Betzig subscribes to a theory of social controls and internal political processes in her proposal that the power struggle between the Church and aristocracy over marriage resulted from within-family conflicts of interest in which younger brothers attempted to wrest control of family resources from their older siblings. As Salter notes, Betzig's theory may be viewed as the crowning touch in a long line of theories that highlight the exploitative nature of the medieval Church. There are overwhelming difficulties with such a theory.

First, Betzig fails to provide even one case in which a younger brother benefited from these social controls in the manner proposed, much less evidence to suppose that ecclesiastical policy was systematically formulated and carried out by disgruntled younger brothers. This was certainly not the case for the main architect of ecclesiastical ascendancy, Pope Gregory VII. At least prior to the eleventh-century reforms, accounts indicate far more nepotistic cooperation among family members than competition between them (e.g., bishops giving Church properties to relatives who had provided them with their office [Tellenbach, 1993:85]). This type of nepotism existed through the nineteenth century.

Second, Betzig does not answer the objection that the same ecclesiastical influences that inhibited older brothers from having heirs would also apply to the younger brothers should they inherit. In order for the behavior of the younger brothers to be adaptive, the Church cannot be seen as opposing the interests of the aristocracy as a whole. However, accounts of the reform movements around the period of peak ecclesiastical power (see target article) uniformly stress the conflict between an aggressive papacy backed by other

sectors of the ecclesiastical establishment versus an oftentimes corrupt and nepotistic secular clergy with close ties to the aristocracy. In stressing the independence of ecclesiastical and aristocratic interests, my account is squarely within the mainstream of historical research.

Thus, in addition to the regulation of mating, the increasing demarcation between Church and laity, and the lessening of secular control over Church offices, the Church actively and successfully encouraged bequests in land and other wealth from the aristocracy. The result was that secular authorities and non-inheriting relatives initiated attempts to prevent this drain on their wealth (Goody, 1983). How would younger brothers benefit from this increasing ecclesiastical power and wealth even if, contrary to anything we know, they eventually inherited the estates of their brothers? While my theoretical perspective is certainly compatible with maladaptive strategizing, in the absence of strong empirical data supporting the importance of this process, it seems wildly premature to suppose that this was an important mechanism.

Third, Betzig supposes that even though marriage was monogamous, polygyny occurred in the medieval period not only among the nobility but also among the clergy. Apart from overwhelming empirical difficulties with such a proposal (considered below), this claim is typical of Betzig's failure to appreciate the theoretical importance of social controls regulating the legitimacy of children conceived outside of monogamous marriage, a failure also apparent in her work on Roman mating (see Betzig 1992a, b). As Brundage notes in his commentary (see also MacDonald, 1990), the legal status of slaves and their children was an important aspect of the fundamentally monogamous mating institutions of Roman civilization. It is simply not enough to state in reference to public criticisms of Charles II's sexual behavior that "it was always thus," and to cite Ronald Syme's comment on social pressures on the sexual behavior of elite Romans, as if her awareness of social pressures penalizing non-monogamous fertility constitutes an adequate theory of these controls or somehow renders these controls illusory. It was indeed always thus (in prototypical Western societies), and this fact is of critical importance in understanding Western sexual behavior.

Contrary to Betzig's claim, canon law was about *both* the production of heirs *and* the production of bastards (the latter being a highly immoral act in the eyes of the Church and an act whose resulting social illegitimacy eventually had a strong influence on the social status and mortality of these children). Indeed, one wonders how these two issues could fail to be linked. The most important difference between Western societies favoring monogamy and a society such as classical China with a truly polygynous marriage system is that males were not free to determine their own heirs or the social status of their offspring conceived outside monogamous marriage. Betzig completely fails to realize the theoretical importance of a situation in which such children often could not inherit property, were likely to be held up to public

contempt, suffered very high levels of mortality, and had markedly lowered chances in life.

Adequacy of the Data

Borgerhoff Mulder characterizes my theory as a "black-boxing of explanatory processes," choosing to focus only on my claim that personal ideologies may be insensitive to self-interest. Similarly, Mueller misreads the article as proposing that the ultimate explanation for Western monogamy is the ideology of Christian religious belief.

However, ideology was only one type of process that I discussed. The amount of space devoted to ideology is two paragraphs—less than 5% of the space devoted to the incredible array of social controls on the reproductive behavior of the elite and the interests and psychological mechanisms that maintained these controls. Moreover, my account is far from a "black-boxing of explanatory processes," as suggested by Borgerhoff Mulder, since it attempts to describe the great many different processes that actually took place, ranging from the role of evolved psychological mechanisms (see also Salter's comments) to a particular emphasis on actual social controls, including the workings of ecclesiastical courts, the vigilance of neighbors, and the machinations of divorce lawyers. One of these processes was the very widespread and apparently deeply held ideology that sex outside monogamous marriage was morally reprehensible and would result in eternal damnation in the next life. On the face of it, such an ideology is maladaptive for individuals who could benefit from a truly polygynous mating system, and its existence certainly bears mentioning.

Nevertheless, it is obvious from the article that I place far more importance on processes of social control and the role of certain evolved psychological mechanisms than on ideology. Given the central tendencies of human behavior, and in the absence of the types of ecological circumstances proposed by Alexander and Betzig, I would suppose that an ideology of monogamy would quickly fail without powerful mechanisms of social control; indeed, in my treatments of ideology I have always emphasized that there is a powerful tendency for ideologies to become intertwined with social controls (MacDonald, 1983, 1988, 1990, 1994a). In the present case, the social controls enforcing monogamy and inhibiting non-monogamous fertility were deeply embedded in a rationalizing ideology that was radically incompatible with the reproductive interests of elite males. And at a theoretical level, dominant social ideologies, such as medieval Christian views of sex and the theory of ecclesiastical superiority over secular authorities, have exactly the same status as social controls: they are the outcome of indeterminate political processes best understood within a game-theoretic context.

Betzig raises the most wide-ranging objections to the empirical adequacy of the data used to support my claim that monogamy was effectively established by the end of the

twelfth century, preferring instead to date the rise of Western monogamy to "the last few centuries" as a result of industrialization. It is important to note that my account of the social regulation of marriage practices represents a mainstream account that is widely accepted among historians (see especially Brundage's commentary, and note that, with the possible exception of Borgerhoff Mulder, the other commentaries do not dispute the central result that the triumph of monogamy dates from the end of the twelfth century). Betzig therefore has a very large burden of proof to establish her position. There are six points I would like to make regarding Betzig's position.

Chronology

Betzig displays an astonishing lack of concern for the chronology of her examples of polygyny. She discusses data from widely separated times and places, much of it long prior to the period when, in the mainstream view, monogamy was established. Thus, she cites a study of ninth-century census records that indicates an excess of women in monasteries. Even if one were to suppose that this finding suggests that ninth-century women living in monasteries were really harem ladies and that the monastic movement was really a clandestine ruse camouflaging systematic polygyny—a bizarre claim for which there is absolutely no evidence—such a claim is irrelevant to my position that monogamy was established by the end of the twelfth century. In previous work (MacDonald, 1990), I have shown that resource polygyny was widespread among the emerging European aristocracy, certainly including during the ninth century, and this conclusion is reiterated in the target article.

Betzig also refers to the Bavarian and Alamannic Codes, which established fines for lying with other men's maids. These codes date from the mid-eighth century at the latest (Wood, 1994). The existence of these codes is highly consistent with my reading of the evidence that indeed there was a massive shift in marriage practices culminating during the period of the High Middle Ages and that a major aspect of the triumph of Church policy was to successfully destroy the traditional tribal social structure of the Germanic peoples, including resource polygyny by high-ranking males.

Female Servants

Betzig notes that large numbers of young females were in service in early modern England. But such a finding no more shows that women in service were systematically conceiving large numbers of bastards by their employers than does the fact that in contemporary times the employment of large numbers of women in male-owned companies implies that these women are normatively conceiving bastards by their employers. Accounts of master-servant sexual relationships (e.g., Faircluids, 1984; Maza, 1983; Stone, 1977; Turner, 1962) indicate that such relationships typically encountered the disapproval of the master's wife (who often had consid-

crable power), that they were secretive (although sometimes they led to marriage), often (at least in England) involved non-reproductive sexual activity, and were often strongly resisted by the servants and regarded very negatively by the families of the servants and by society in general. The goal of the vast majority of these women and their families was marriage within their social class—a goal that would be severely compromised by an illegitimate pregnancy.

While close to 50% of lower-class women aged 20-24 were in service in early modern England, the illegitimacy rate was usually far less than 3% until after 1750 (Laslett, 1977). In all studies, lower-class males, especially male servants, were more likely than masters to be the fathers of the illegitimate children of female servants, both in France and England (Depauw, 1976; Fairchilds, 1984; Maza, 1983; Turker, 1962). Moreover, Fairchilds (1984) notes that master-servant relationships resulting in illegitimate births were far more common in small households than among the high nobility in France, and that wives were especially likely to discharge servants made pregnant by the master, with the result that the servants would often later commit infanticide and/or descend to the lowest levels of society.

Furthermore, similarly high percentages of young males were in service during this period, so that sexual exploitation of females cannot be the whole story. Indeed, rather than assume that the servant system, in general, is a sign of normative polygyny by the wealthy, there are suggestions that the system as a whole functioned to benefit the lower classes. Stone (1977:107) writes of wealthy estates serving a sort of holding function for the children of the lower classes, supporting them and receiving services from them for a ten year period until they could get married. Since the wealthy could not normally utilize these females as mates, this pattern actually involved the redistribution of resources to the less wealthy.

Conceptually, this practice may qualify as another example of socially imposed or customary altruism occurring in traditional English society (see target article). The practice of taking in unrelated servants is unique to the simple household system characteristic of northwestern Europe. The practice pervaded all groups, so that individuals would have their children go to work as servants elsewhere while at the same time taking in unrelated servants (Hajnal, 1983; Stone, 1977). This suggests a deeply ingrained cultural practice, probably predating Christianity, which resulted in a high level of non-kinship-based reciprocity and even altruism by the wealthy that is highly consistent with the general perspective developed in the target article. In any case, it is completely inadequate to simply assume that any situation where mobile females are under the control of wealthy males implies that sexual exploitation must be involved.

Wealth and Reproductive Success

The data from the fifteenth-century Florentine *Catasto* do not imply polygyny but instead support the point—which I

make in the target article (citing the same study)—that until quite recently, wealth has been associated with reproductive success throughout European history. Indeed, the fertility of the wealthiest quartile is nowhere near a level that could only be explained by polygyny, and Herlihy (1985) attributes the lower fertility of the other quartiles to birth control or higher infant mortality.

Patterns

Some examples of aristocratic polygyny cited by Betzig are real, but they fail to indicate a general pattern. Betzig emphasizes the case of the prolific Count Baldwin (a case that I also mentioned in the target article; see Note 11). As is typical of her methods, however, Betzig ignores the general trends and concentrates on examples that support her preconceptions. One can also find examples of noblemen who were apparently entirely monogamous or even saintly (such as Louis the Pious [814-840] and Saint Louis [1226-1270]). In developing the target article, I attempted to go beyond citing particular cases by concentrating on a systematic study of the English kings, a group of wealthy males whose reproductive behavior is well known.

Reproduction among Clergy

The fact that some clergy had children and that the Church tacitly or openly approved of the practice hardly constitutes evidence for normative polygyny among the clergy, any more than the contemporary practice of marriage in the Anglican Church is evidence for polygyny. As many commentators have noted, the clergy who were most likely to be married or engaged in concubinage (i.e., monogamous informal marriage) were at the lowest rung of the ecclesiastical ladder, working in rural parishes where they were under less scrutiny by the higher clergy and where the extra help of a mate was often indispensable.

Moreover, the reforms beginning in the eleventh century severely restricted the extent to which a clerical career could be a viable family strategy, and marriage and concubinage were unknown among the higher clergy in England during the thirteenth century. One wonders how the Church could have commanded such intense popular support during the medieval period if the higher clergy were systematically engaged in intensive polygyny with lower-status women. And one also wonders why wealthy parents of the mendicant friars opposed the intentions of their children to enter these orders if being a friar was a good strategy for attaining high levels of reproductive success. As in the case of aristocratic polygyny, Betzig ignores the clear secular trends (in this case, the trend toward real clerical reform immediately prior to and during the period of peak ecclesiastical power) in favor of a static picture in which the behavior of an earlier age or the behavior of a few nonconformists is uncritically generalized into a normative pattern characteristic of all periods.

Literary Evidence

Literary evidence is extremely weak evidence for normative polygyny, especially when we have actual data on illegitimate fertility for an important set of aristocrats—the English kings. As in the contemporary world, literary tales involving sex and seduction are excellent devices for sustaining interest, but no one would suppose that the fact that tales of sexual intrigue are able to yield high profits for the modern media is a sign that the tales are either true or that they constitute an adequate portrayal of contemporary society.

Betzig concludes her presentation of countervailing “evidence” with the claim that “it’s all the evidence we’ve got.” Such a claim is possible only by completely ignoring all of the empirical data summarized in the target article and the interpretations of mainstream historians. Nowhere are we given any indication that the English kings actually had many more illegitimate offspring than were represented in my sources. No data are presented showing that it was a normative practice of bishops and mendicant friars during the High Middle Ages to have multiple concubines. When the mendicant friars, many of whom were scions of wealthy families, are depicted by historians as engaging in acts of extreme asceticism, we are implicitly invited to suppose that they also sired dozens of illegitimate children with their many secret concubines. And we are implicitly invited to suppose that while appearing before his subjects in sackcloth and wearing a hair shirt, while flagellating himself as penance for his sins, and while conducting Crusades to liberate the religious sites of the Holy Land, St. Louis was also siring dozens of bastards in his secret harem.

I believe that Betzig creates her empirical fantasyland because of her commitment to an extremely narrow conception of evolutionary thinking. Following the pioneering work of Mildred Dickemann (1979), Betzig (1986) documented an extraordinary convergence in reproductive patterns among the stratified societies of the world. Indeed, the convergence goes far beyond reproductive patterns. To expand on an example discussed by Boyd and Richerson (1992a), when Cortez arrived among the Aztecs in 1519, he found a great many similarities with his own society, including a hereditary nobility, priests, warriors, craftsmen, and peasants. There was thus an overwhelming convergence between the societies, despite the fact that Aztec society had developed independent of Old World influences. But Cortez did not find a society in which the religious establishment claimed to be superior to the secular establishment and was successfully regulating the reproductive behavior of the secular elite.

When confronted by an overwhelming convergence among all stratified societies combined with a possible point of divergence, the temptation is to argue, as Betzig does, that the divergence is illusory, and to date the divergence to a much later period when there was a clear ecological difference between Western and non-Western societies (i.e., industrialization). In developing such a position, Betzig is

forced to maintain a completely heterodox interpretation of available data, propose a very fuzzy dating of Western monogamy to “the last few centuries,” and develop an extremely speculative theory for the eventual origins of Western monogamy. Note that although Betzig reiterates her theory in her commentary, she fails to mount a defense of the theory against the theoretical and empirical objections raised in the target article.

However, by accepting the theoretical framework developed in the target article—a theoretical framework that is squarely within the mainstream of current evolutionary thinking about humans—there is no reason to suppose that high levels of convergence among all of the traditional stratified societies of the world could not be accompanied by an important point of divergence in the case of Western societies.

Monogamy and Modernization

Mueller, Strate, and Wilson note that Western societies and their social institutions have been extraordinarily successful and that monogamy may well have been a critical component of this success. As I pointed out in the target article, the development of socially imposed monogamy constitutes a group-level phenomenon that may well have resulted in between-group selective processes that benefited Western societies. I agree with the commentators that this point certainly deserves to be expanded in future work, and in particular, as Wilson suggests, we must clarify the status of monogamy as part of the “necessary architecture” of modernization.

Particular attention needs to be paid to possible mechanisms linking monogamy with all of the factors associated with European modernization, including democracy (as suggested by Strate), egalitarianism (as suggested by Saltz), individualism, science, technology, and industrialization. Particular attention should also be paid to issues linking monogamy and the family (see MacDonald, 1988), including the rise of high-investment parenting (as also suggested by Mueller), the rise of the affectively based nuclear family as the fundamental unit of social organization, and the decline of extended kinship relationships—the last two of which were clearly the focus of ecclesiastical policy beginning in the Middle Ages.

Nevertheless, as indicated by the cultural parity or even superiority of Muslim societies over a very long period of European history, establishing that monogamy is centrally related to other Western cultural practices or to the eventual success and diffusion of Western institutions is likely to be quite difficult. As an example of the type of analysis needed, there are sound reasons for supposing that monogamy was a necessary condition for the peculiarly European “low-pressure” demographic profile described by Wrigley and Schofield (1981). This demographic profile results from late marriage and celibacy of large percentages of females during

times of economic scarcity. The theoretical connection with monogamy is that monogamous marriage results in a situation in which the poor of both sexes are unable to mate, whereas in polygynous systems an excess of poor females merely lowers the price of concubines for wealthy males.

Thus, for example, Wrigley and Schofield (1981) find that at the end of the seventeenth century approximately 23% of individuals of both sexes remained unmarried between ages 40 and 44, but that, as a result of altered economic opportunities, this percentage dropped at the beginning of the eighteenth century to 9%, and there was a corresponding decline in age of marriage. Like monogamy, this pattern was unique among the stratified societies of Eurasia (Hajnal, 1965, 1983; Laslett, 1983; MacFarlane, 1986; Wall, 1983; Wrigley and Schofield, 1981).

In turn, the low-pressure demographic profile appears to have had economic consequences. Not only was marriage rate the main damper on population growth, but, especially in England, this response had a tendency to lag well behind favorable economic changes. The result was a tendency for capital accumulation during good times rather than a constant pressure of population on the food supply:

The fact that the rolling adjustment between economic and demographic fluctuations took place in such a leisurely fashion, tending to produce large if gradual swings in real wages, represented an opportunity to break clear from the low-level income trap which is sometimes supposed to have inhibited all pre-industrial nations. A long period of rising real wages, by changing the structure of demand, will tend to give a disproportionately strong boost to demand for commodities other than the basic necessities of life, and so to sectors of the economy whose growth is especially important if an industrial revolution is to occur. (Wrigley and Schofield, 1981:439; see also Hajnal, 1965; MacFarlane, 1986)

There is thus some reason to suppose that monogamy—through its production of a low-pressure demographic profile—was a necessary condition for industrialization rather than its consequence, as proposed by Betzig. It is this type of argument that suggests that monogamy may indeed be a central aspect of the necessary architecture of Western modernization.

Artisans, Merchants, and the Church

Mueller makes several interesting points that require discussion. In the target article, I point out (and Mueller would apparently agree) that the ultimate source of Western monogamy is not Christianity, but rather the institutions of the Roman Republic and Roman Empire—a subject that I have previously addressed (MacDonald, 1983, 1990) but which was beyond the scope of the target article. The mechanism

of the origin of socially imposed monogamy during the Roman period was undoubtedly quite different from that of later Western monogamy (see target article), but there are remarkable similarities in the mechanisms for the maintenance of monogamy, including laws on the legal status of offspring born outside monogamous marriage, customs opposing divorce, negative social attitudes toward nonconforming sexual behavior, and an ideology of monogamous sexual decorum. Mueller also points out that monogamy has thus far survived the secularization of Western society. I completely agree, and indeed a major focus of the target article was on mechanisms—such as divorce laws, public opinion, attitudes and controls related to illegitimacy, and the maneuverings of politicians and lawyers—that have supported monogamy after the period of ecclesiastical hegemony.

Mueller proposes a theory of post-antiquity Western monogamy in which it was

the persistence of small, independent artisans and merchants in the fragmented political structure, which characterized European history from antiquity, that served as the economic and technological foundation of the spiritual power that forced the class of big landowners—the nobility—into monogamy.

I am aware of no evidence indicating that ecclesiastical attempts to control the aristocracy derived ultimately from the interests of artisans and merchants. The consensus view is that the motivation for the ecclesiastical campaign to exert control over society and, in particular, the sexual mores of the aristocracy, must be sought in the desire for power by the central actors in this campaign—the reforming popes and their intellectual and political supporters within the Church. Nevertheless, there is indeed reason to suppose that merchant and artisan classes benefited from Church policies.

Economic historians (e.g., Gilchrist, 1969) have shown that Church economic policies were highly compatible with the development of a mercantile economy. Moreover, the period of ecclesiastical predominance coincided with a period of unprecedented economic and demographic expansion in Western Europe lasting into the fourteenth century—another indication that medieval cultural institutions were highly adaptive at the level of the group. In addition, Church policies coincided with the interests of the mercantile and artisan classes against the nobility by combating the economic competition represented by Jews to the emerging Christian middle classes. The friars—who spearheaded the thirteenth-century Christian reform movement as well as the anti-Semitism of the period—derived mainly from the newly created urban middle and upper middle classes.

Cohen emphasizes that these classes viewed the Jews as a competitive threat: “By the thirteenth century, the Jews of Europe were engaged almost exclusively in commercial activities, especially the lending of money; their success and

influence in the marketplace set them among the chief competitors of the new Christian bourgeoisie" (1982:43). Cohen notes that "it was not sheer accident" (1982:41) that both the Dominicans and the Franciscans developed a Christian theology of commerce and trade, or that St. Francis was often described as the patron saint of merchants.

The medieval Church had a strong sense of Christian group economic interests vis-à-vis the Jews, and often worked vigorously to exclude Jews from economic and political influence and to prevent social intercourse between Christians and Jews (Cohen, 1982; Cohen 1994; Jordan, 1989; MacDonald, 1994a, 1995; Parkes, 1976). The Church often sided with popular sentiment by combating the repeated tendencies of rulers to favor Jews for their own ends, especially with regard to Jewish moneylending. The Church, in alliance with popular elements including merchants and artisans, was also instrumental in the expulsions of Jews from England, France, Spain, and several parts of Germany. In Germany up until the nineteenth century, Jews were regularly excluded from Church lands and regularly admitted to secular lands, where they were utilized as a source of income for the feudal lord (Harris, 1994:15). There is, therefore, some reason to suppose that the medieval Church represented in part a wide-ranging political, economic, and reproductive campaign to significantly curb the interests of the nobility in favor of the newly emerging Christian middle classes.

Unity of the Medieval Church

Regarding the comments of Brundage, the main point is that there is no disagreement with my interpretation of the dating, the course, and most of the mechanisms resulting in socially imposed monogamy in Western Europe. I agree completely with his claim that the lowered status of unions with slaves was an important aspect of the institutional support of monogamy in the Roman world (see also MacDonald, 1990). I also agree with his view that the ideology of valid marriage as indissoluble is of critical importance in understanding Western monogamy and is deserving of even greater attention than I gave it. And one can agree with Brundage's claim that prohibitions on adoption were not an important mechanism for the maintenance of monogamy without imperiling the status of the other mechanisms outlined in my article.

As is apparent in Brundage's comments, the Church's alteration of the laws on slavery in the direction of elevating the sexual relationships of slaves to the status of marriage was not a blow against monogamy, but rather an attempt to develop a uniform institution of monogamous marriage at all levels of society—an aspect of the Church's program of imposing the same rules of sexual and domestic conduct on the rich and the poor noted by Herlihy (1985). Indeed, Brundage's entire account of the intricate relationship between ecclesiastical and secular authorities is precisely the sort of complex and "messy" internal political dynamic

involving the regulation of mating behavior that is unique to Western societies and that results ultimately from the fact that the Church was a real source of power throughout a very long period of Western history. While the present social interactionist perspective is highly compatible with a role for such "messy" political processes, Brundage's comments also indicate that the search for the types of external ecological variables sought by Betzig is likely to be fruitless.

Brundage states that I have overdrawn the medieval Church as "a unified institutional entity." His comment does not vitiate my claim, however—based on consensus among historians (including Brundage)—that the Church played a central role in the establishment of monogamy during the medieval period. Brundage's statement is rather directed at my claim that medieval Western civilization can be understood as a unified *societas christiana*—a collectivist society in the sense of Triandis (1990, 1991). The extent to which this clearly articulated cultural ideal of society as an organic, corporate unity encompassing all Christians was realized is a difficult historical question.

There was certainly historical change in the gap between the ideal and reality—a gap that increased in the later Middle Ages and the Renaissance. An evolutionist should not be surprised to find gaps between theory and reality in an institution with an ideology of hierarchical harmony among all social groups, of secular subservience to the ecclesiastical hierarchy, of chastity among religious personnel, and of mating restricted to monogamous, indissoluble marriage even for the secular elite. Even if Gregory VII's collectivist *societas christiana* was indeed achieved at any point in history, an evolutionist would expect it to be inherently unstable because of the centrifugal forces resulting from conflicts of interest between social groups and between group and individual interests.

The important question for future research is to better document the suggestions that medieval society is indeed analyzable as a collectivist society with a strong sense of group identification and commitment. In addition to indications of a clear sense of Christian ingroup economic interests vis-à-vis the Jews as an outgroup outlined above—interests that were incompatible with the individualistic tendencies of the aristocracy to favor the Jews—there appear to have been high levels of reproductive altruism, particularly among the mendicant friars, many other religious personnel, and eventually the secular elite, the latter mainly the result of coercion, but also, as in the case of St. Louis, influenced by voluntary restraint. (In this regard, it is interesting that St. Louis was not only a paragon of proper Christian sexual behavior, but also had a powerful sense of Christian group economic interests vis-à-vis the Jews [e.g., Chazan, 1973; Jordan, 1989; see target article, Note 4].)

In addition, medieval society—and especially that of the thirteenth century, which represents the apogee of ecclesiastical power—was also characterized by historically high levels of charity to the poor, levels that were not matched until the present century (Gilchrist, 1969; Tierney, 1959).

Moreover, there was intense group identification and group commitment to Christianity among all levels of society, as indicated, for example, by the multitudes of pilgrims and the outpouring of religious fervor associated with the Crusades.

The proposal that there was an important degree of unity, cohesiveness, and collectivism to medieval Christian society renders the relatively high levels of medieval altruism and group identification and commitment more comprehensible, since it is compatible with supposing that an important factor underlying these medieval phenomena was the triggering of evolved facultative mechanisms related to group identification and cohesion (MacDonald, 1994a,b, 1995; Wilson and Sober, 1994; see target article, Note 8). These mechanisms imply a strong psychological sense of Christian ingroup membership and a corresponding perception of outgroups as hostile and threatening. The psychological salience of Christian ingroup membership and of non-Christian outgroups (particularly Muslims and Jews) perceived as powerful and threatening has long been apparent to historians of the medieval period (e.g., Lynch, 1992:161-64).

And it must be remembered that whatever the gaps between the ideal of a unified Christian society (characterized by hierarchical harmony, ecclesiastical hegemony, and sexual restraint) and the actual workings of the medieval world revealed by contemporary historical research, these gaps must be balanced by the recognition that many medieval Christians—and especially the central actors in medieval society, such as the monks, the mendicant friars, the reforming popes, the fervent crusaders, the pious pilgrims, and even many elite aristocrats—perceived themselves to be part of a highly unified, supranational collectivity. It is this fundamental psychological orientation—so foreign to contemporary Western life—that, in conjunction with contemporary psychological theories of social identity processes (Hogg and Abrams, 1987) and individualism-collectivism (Triandis, 1990, 1991), renders the high levels of group commitment and altruism characteristic of the medieval period comprehensible in psychological terms.

This intense group commitment certainly does not imply altruism at all levels of society. As Salter notes, there is a long history of theories that imply that medieval peasants were dupes of an exploitative Church, or that celibate medieval religious personnel were tools in an exploitative despotism formally analogous to the eunuchs who guarded the harems of Eastern potentates. The contrary view represented in my article is that medieval society represented the reproductive interests of a very wide range of the population, certainly including the peasantry and the emerging middle classes. And, as indicated minimally by the economic and demographic expansions of the period, medieval cultural institutions were highly compatible with increasing the reproductive success of the group as a whole. Medieval religious celibacy, therefore, far from being an aspect of reproductive despotism and exploitation, was, from the present standpoint, an integral part of the "groupness" of medieval society, a phenomenon that rendered plausible the

perception of a great many persons of all social classes that they each had a valuable role to play in a unified corporate *societas christiana*.

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