

A CULTURAL EVOLUTIONARY APPROACH TO MODERNITY: WHAT MIGHT IT MEAN FOR CHRISTIAN FAITH?

by Colin Patterson 

Abstract. This essay introduces, for theological consideration, some recent work in the field of cultural evolutionary theory, specifically the kin-influence hypothesis. This theory holds that, following the beginnings of industrialization and economic growth, a nation's fertility rate commences a decline, which is further abetted by the consequent and increasing imbalance in the relative influence of kin versus nonkin influences on individuals in favor of the latter. It is further proposed that this process is itself a major independent factor in the emergence of many of the features of what is called modernity, among which is that of secularization. Extending further this work, I argue that, given the historic alignment of family and religious values in Christian nations, a loss of religious belief and practice is, at least in part, the spill over effect of the opposing influence of values emerging from ever more dominant nonfamily social interaction. I conclude with some reflections on possible theological implications.

Keywords: cultural evolution; family; fertility; modernity; secularization

In contemporary sociological and demographic research, modernity is typically understood to refer to the widespread cultural changes that got under way during the second half of the eighteenth century as a result of the Enlightenment and the Industrial Revolution (Anderson 2006). Economic growth is viewed as a core element of those changes, but it is unlikely that the processes associated with modernity could have occurred without the unprecedented organizational reach that governments acquired at that time (Mouzelis 2012). In the century or so thereafter, a number of Western nations set out on a path of modernization, and in more recent times, its effects have been observed in many non-Western nations with markedly diverse cultural backgrounds.

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While the term *modernity* is associated with growth in economic development, it also embraces a number of closely associated cultural phenomena that appear as the process of modernization progresses. The array of such phenomena is extensive and includes, among many other features, industrialization and capitalism, urbanization, democratization, gender egalitarianism, growth in scientific knowledge and technology, secularization, individualism, and a belief in progress (Berman 1983; Giddens 1990; Everdell 1997; Wagner 2008; Santos, Varnum, and Grossman 2017). Indeed, one might reasonably hold that modernity is such a pervasive shaper of Western societies, and in more recent times of other non-Western societies, that those of us who have grown up within its orbit are hard pressed to be able to take its measure. It flavors our thought whichever way we turn.

Still, that has not dampened efforts to understand the nature of the dynamics that triggered and sustain the wide and all-embracing range of characteristics expressive of modernity. What are its key features? Can we specify its driving forces? To what extent can it be analyzed quantitatively? Two broad types of explanation dominate the field (Richerson and Boyd 2005; Newson and Richerson 2009). One, sometimes termed *environmental*, holds that individuals within populations adjust their behavior, through the use of reason- and evidence-based skills, especially cost-benefit analysis, in response to changes to social, economic, and physical environments; modernity, in this view, is primarily the result of such changes achieved through *individual* decision making. The alternative type of theory, *evolutionary*, places emphasis on long-term, cross-generational and within-generational *social learning* processes of cultural transmission, which are viewed as the primary drivers of cultural change, and thus of modernity. The distinction broadly parallels that proposed by psychologists in what are called dual-process theories (rapid, intuitive, and emotion guided versus slower, conscious, rational cognitive processes; Evans, 2003; Haidt 2001). The label *evolutionary* derives from the fact that those putting forward this kind of theory draw their conceptual models from work in the field of evolutionary biology. Its proponents are commonly referred to, and refer to themselves, as cultural evolutionary theorists (Cavalli-Sforza and Feldman 1981; Boyd and Richerson 1985). In sum, then, the former type of explanation looks to relatively immediate, reason-based factors behind cultural change, whereas the latter, by contrast, considers more influential the longer term, culture-wide social processes they identify (Newson and Richerson 2009). Colleran (2016) examines the overlap between these two approaches).

Here, I will draw primarily on the latter, evolutionary approach to sketch an account of the pathway toward modernity. I will be relying largely but not exclusively on a theory called the *kin influence hypothesis*, proposed by Lesley Newson and Peter Richerson, which sees the emergence of modernity as arising from the loss in relative importance of cultural information

transmitted by family/kinship groups (Newson and Richerson 2009; Newson, Richerson, and Boyd 2007). More specifically, this hypothesis argues that, with the advent of economic development, there is typically a reduction in total fertility rate. (Total fertility rate—hereafter fertility rate or simply fertility—is, roughly, a measure of how many children a woman might be expected to bear during her childbearing years.) This reduction occurs following the profound change in social relationships, for example rural to urban migration, and has the effect of both restricting people's exposure to the pronatalist attitudes (i.e., attitudes which encourage couples to have offspring) characteristic of interaction among kinship groups, and augmenting contact with neutral or antinatalist attitudes that are associated with nonkin relationships. On the basis of what are fairly small observed differences in the relative influence of pronatalist and antinatalist or neutral views over generations, according to this hypothesis the major contours of modernity take form (Newson et al. 2005; Newson, Richerson, and Boyd 2007). The theoretical sketch I wish to offer, while based in the work of Newson and colleagues, aims to extend it by incorporating further relevant evidence relating to the process of secularization.

In considering the matter theologically, my primary interest in a cultural evolutionary approach to modernity is what it might have to contribute to a faith perspective on the decline in religious belief and practice in Western nations. Newson and Richerson themselves have related their kin influence hypothesis to religious phenomena understood in scientific terms (Richerson and Newson 2008; Newson and Richerson 2014) and my aim here is to take account of that work. A specifically theological perspective on these matters has relevance for those who seek to understand the dynamics and contexts that have a bearing on the faith of believers. There have been a number of contributions to more general theological reflection on modernity as a sociological phenomenon, and on secularization as a significant aspect of it (e.g., Cox 1966; Hill 1984; Habermas and Ratzinger 2007; Taylor 2007), but to date no publications appear to have taken account of the more recent *evolutionary* approach. In this, possibly first such attempt at coming to terms with its understanding of modernity, I will highlight, in a few brief concluding reflections, some of its possible implications for Christian faith.

CULTURAL EVOLUTION AND MODERNITY

The kin influence hypothesis of Newson, Richerson, and their colleagues is proposed as a partial explanation for the development of modernity. They begin their account by pointing to the line of work initiated by Émile Durkheim that argues that the growth and diffusion of wealth leads to dramatic changes in the way people relate to each other (Durkheim [1893] 1984; Batson 1991; but see also Schulz et al. 2018, who propose causal

factors working in the reverse direction). They then note that prior to an historic upturn in industrialization and economic growth, the major context for social interaction is the family and its extended kinship circle. As is typically observed, the advent of industrial development and its concomitant economic growth necessitate the emergence of modes of cooperation that are not kin-based, and frequently involve strangers who come together for commercial or other restricted economic and social reasons. Of course, widespread population movements from rural to urban environments have played a large part in this transition from essentially kin-based to non-kin-based social interaction, but other processes such as the rise of education, have also been operative (Colleran et al. 2014).

The specifics of Newson and Richerson's hypothesis begin to appear in their work relating a nation's economic development to its fertility rate. They have observed that, in a quite consistent manner, the latter variable begins to decline in the period beginning soon after a rise in national wealth (Zelinsky 1971; Newson and Richerson 2009). Of particular interest is their observation that, whatever happens at the economic level, once the fertility rate begins its decline, it proceeds on a downward path over a period of decades until it reaches a level roughly at, or more likely below, the lifetime replacement rate of approximately 2.1 children per woman.

Figure 1 shows the current fertility rate for a large sample of nations and relates each figure to the year when that rate began to decline. Those points to the left of about the 1960–70 period represent nations that have largely reached a fertility rate at or below replacement level. Nations to the right of that period are those whose fertility rate began to decline more recently and are now, for the large majority of them at least, still in the process of moving toward replacement level. The former are nations where industrialization occurred early, while the latter are typically developing nations.

The primary reason for this downward trend in fertility rate, according to Newson and Richerson, is that, with economic development, the ratio of kin to nonkin influences on a given individual begins to decline. Increasingly, the exposure to and impact of kinship diminishes, while there is a correlative growth in nonkin influences. According to the authors, this process is largely the result of changes in a specific culturally transmitted tendency. They have provided suggestive evidence that there is a small but robust propensity within social interactions *between kin* for the bearing of children to be valued and promoted, something not observed in communications among nonkin. What they propose is that this dynamic whereby there is an encouragement to bear children within kinship circles, over a period of many generations, has the effect of sustaining the fertility rate, such that when the process is compromised, there is a consequent loss in the perceived value of bearing children (for the effect of context, see Sear and Coall 2011). What comes in its train is a reduction

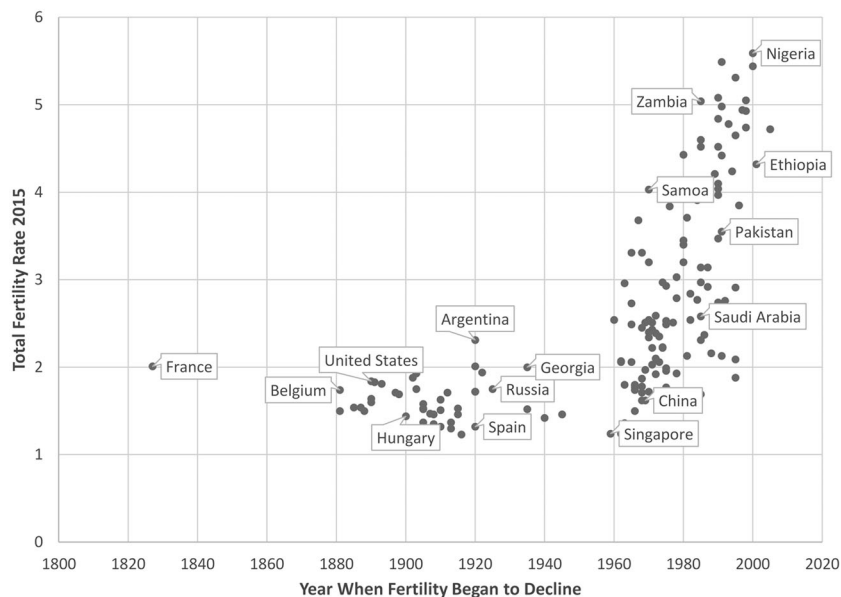


Figure 1. Year Fertility Began to Decline versus Total Fertility Rate in 2015 (Data for 158 Countries for Which Fertility Rates Have Begun to Decline).
Data sources: Newson and Richerson 2009; World Bank 2015.

in the fertility rate, and thereafter, all kinds of changes that are associated with modernity. Among these are growth in education and general intelligence, bureaucratization, individualism, the increasing instrumentalization of relationships, reduction in corruption, changing views about authority, and, not least, secularization. A key implication that Newson and Richerson draw from this is that the extent to which the process of modernization has progressed depends largely on the time in history when a nation's fertility began to decline (Newson and Richerson 2009). Earlier tipping points are linked to more advanced modernization, whereas more recent declines in fertility are associated with less progress along that pathway.

Thus, the kin influence hypothesis is that the growth in a nation's economy prompts a decline in fertility rate and this, *as a factor largely independent of economic development*, has flow-on effects that together exercise a profound shaping of what we know as modernity. There are two questions associated with this idea that must be distinguished: (a) how central is fertility reduction to the broader process of modernization? and (b) is cultural transmission of pronatal attitudes within kinship circles the primary means by which chronic fertility decline occurs? Let us consider them in turn.

How Does Fertility Reduction Relate to the Process of Modernization?

Some of the evidence Newson and Richerson present in support of their contention that fertility reduction is a core mechanism for the emergence of the main features of modernity is published in their 2009 article, “Why Do People Become Modern? A Darwinian Explanation.” In that article, they use data from a large number of countries to demonstrate a close correlation between various indicators of modernity—for example, higher levels of education, gender empowerment, and less corruption, on the one hand, and their key variable of interest “the year fertility began to decline” (YFBD), on the other.¹ Depending on the indicator being examined, they found that that variable, YFBD, explains between 40% and 60% of the variance in the outcomes being measured. In order to test whether YFBD is truly a key driver and not simply a correlate of a more explanatorily powerful factor, the authors also examined other potentially important variables such as wealth (per capita GDP), life expectancy (health-adjusted life expectancy), religiosity (World Value Survey responses to the question, “How important is religion in your life?”), given that each of these has been proposed as an important factor influencing the process of modernization. They found that these variables, too, correlated with the extent to which a nation had undergone that process. However, when all of these variables, wealth, life expectancy, and religiosity, together with YFBD, were tested again, taking into account their dependence on each other, the analysis showed that, in fact, YFBD was the primary and most powerful predictor of the extent of modernization. This is a remarkable result, given that the measures of wealth, life expectancy, and religiosity depend to a much greater extent on the more contemporary fortunes of a nation, whereas the year when fertility began to decline, for many nations, occurred over a century ago! More than the other variables, it best predicted the *present* state of modernity in a nation. Follow-up statistical analyses of other potential explanatory factors showed similar results (Newson and Richerson 2009, 148–50).

In answer to the first question, then, in light of the above as well as more recent evidence (see Colleran et al. 2015), it looks, at this stage, as though there is some support for Newson and Richerson’s argument that fertility reduction plays a significant part in the broader process of modernization. Further, given that YFBD is a measure of circumstances that commonly occurred often many decades ago, it appears, too, that there might be a case for proposing that cultural transmission—in this case, the increasingly limited communication of pronatalist attitudes within kinship circles—is a key factor in orchestrating this decline in fertility, and thus the rise of modernity. Perhaps, then, we have our answer to the second question posed above, about the importance of the transmission of pronatalist attitudes for fertility decline. However, it may not be that simple. I would like to suggest another mechanism that might contribute to the decline.

How Important Are Pronatalist Attitudes for Fertility Decline?

On the second question—is the decline in fertility in a nation best explained via cultural transmission or should other processes, perhaps environmental, be considered?—Newson and colleagues have provided experimental evidence in support of the former explanation (Newson et al. 2005; Newson, Richerson, and Boyd 2007). They asked female subjects to place themselves in the role of an older woman offering advice to a younger childless woman of reproductive age who is considering getting pregnant. The situation of the younger woman was varied across scenarios, as also was whether the older woman was mother to, or unrelated to, the younger woman. Their results show a small but consistent tendency for the subjects to attribute a more pronatalist, that is, pregnancy-encouraging, attitude in scenarios in which the two women were mother and daughter (as opposed to unrelated women). The researchers reason from this that, with the relatively greater frequency of nonkin social interactions following on from growth in economic development, pronatalist attitudes and cultural norms are no longer transmitted to the same degree across generations, and thus fertility further declines via a positive feedback process with reductions in family size creating opportunities for more involvement in employment, and in educational or social circles that are not kinship focused.

One might question, however, the predominant power of the process Newson and colleagues describe. They acknowledge that it is both robust *and* weak, but contend that, across many generations, it would have a profound effect on fertility rates. Is its effect sufficiently strong, though, to account for the observed changes in the process of modernization? I am not sure that it is, since from Figure 1 it is clear that the downward path toward the level of replacement fertility or below generally takes 30–40 years. This would appear to be too short a timespan for this weak mechanism to have such a profound effect. Here, I offer another, perhaps complementary explanation:

- (1) A nation's economic development touches its population first and chiefly at the point of available employment opportunities, and urbanization is a well-documented result of people moving from rural areas to urban centers in search of jobs (Zelinsky 1971).
- (2) Whereas children in an agricultural economy are assumed to be, after some fairly young age, net contributors to the financial well-being of a family, as large segments of a population move to cities, the benefits of a larger family would be increasingly questioned in an urban setting. In consequence, one would expect a resulting reduction in fertility rates. So far, this and (1) are part of Newson and Richerson's argument (2009; see also Knodel [1975] 2015; Haines 1989; Guinnane 2011).

- (3) Fewer children per family leads to a reduced need to engage in domestic work and the care of children (Lawson and Mace 2011). The consequence of this is that there are greater opportunities, especially for women, to work outside the home. In time, this means not only greater household income, but also increased possibilities for women to participate in the pursuit of self-development and status, which are core aspects of industrial economies (Bloom et al. 2009; Balbo, Millari, and Mills 2013).
- (4) As a result of this increase in women's workforce participation, over time the gender identities of both men and women are more likely to center on their nondomestic roles and relationships and thus move toward an egalitarian convergence in this respect (Fortin 2005), although not necessarily in the direction of more similar employment preferences (see Stoet and Geary 2018). Such a development will mean, especially at lower levels of fertility, that children come to be viewed as, at least partly, a limitation or constraint on self-development and self-expression (Mencarini and Sironi 2010).
- (5) This extended process can thus be seen as operating as a positive feedback mechanism: fertility decline feeds growth in valuations of work, status pursuit, and wealth, and these in turn put downward pressure on fertility. However, the process eventually runs up against dampening factors such as limits to the control of fertility, for example, prior to the ready availability of hormonal contraception, and the widespread human desire—probably culturally evolved—to continue the family line (Bongaarts 2001; Goldin and Katz 2002).

It would appear from this (admittedly simplified) account that the dynamic that is operating is largely an “environmental” one: the attractive power of increased family income, reduced domestic responsibility, and for many the development of the self, are more and more favorably compared with the commonly experienced desire for a larger family and its flow-on benefits for family life. However, we need to be careful at this point and recognize that the decision making of individuals and couples does not occur within a social vacuum. It is possible that social imitation and learning might be equally, or even more important, in determining how people reach decisions relating to fertility and employment. In fact, Joseph Henrich (2001) has provided compelling evidence for the idea that the spread of behavioral changes within a society is better modeled by cultural transmission or social learning effects than by learning from the environment (cost-benefit reasoning) (see also Petty and Cacioppo 1986; Efferson et al. 2008). He notes that “biased cultural transmission processes are much more important for understanding the diffusion of innovation and sociocultural evolution than is often assumed by most theorists” (Henrich

2001, abstract). (In the present context, by “biased cultural transmission” is meant the pronatalist bias we have already noted, but also the biases that people display for imitating high-status others [prestige bias], or for following majorities [conformity bias].) Like that of Newson and Richerson, the additional mechanism proposed here can be understood as functioning within an evolutionary framework. It hypothesizes that most couples base their offspring decisions not only or even predominantly on the presence of encouraging messages from members of their kinship group, but also on the example of prestigious individuals, or through conformity with what they observe most of a population are deciding (see Bongaarts 2001, 263–68). Another way of relating these two processes is to say that kin influence might be more important early in the period of a nation’s demographic transition toward low fertility rates, while other forms of social learning might predominate as factors serving further to progress that transition, and to maintain that state once it is achieved (Becker and Lewis 1973; Goodman, Koupil, and Lawson 2012).

The material I have presented thus far has argued for the following:

- (1) The year when fertility begins to decline is closely linked to economic development and industrialization. The key mechanism for this association is to be located in the rural–urban migration that is consequent upon that development.
- (2) With such development comes a rebalancing of the kin versus nonkin influences on individuals. I have argued that in addition to this mechanism, there operates another process, also substantially mediated via social learning and largely beneath conscious awareness, which engenders self-development, status enhancement, and the pursuit of financial security. The changing social (relative) valuation of these benefits leads, over time, to decisions based on the preference for smaller families. The relation between this proposed mechanism and that suggested by the kin influence hypothesis of Newson and Richerson is uncertain, and further work is needed to bring clarity to the matter.
- (3) The predictive power of the variable, Year when Fertility Began to Decline in a nation, explains 40% to 60% of the variance of a number of outcome variables commonly linked to the broader phenomenon of modernity. YFBD appears to be a better predictor of modernity outcomes than other commonly suggested explanatory variables and is, therefore, more likely than these to operate as an independent causal factor in the emergence of modernity.
- (4) More generally, I have also argued that evolutionary processes are more significant in the emergence of a number of features of modernity than are environmental ones although it must be kept in mind

that they are not to be considered as mutually exclusive; the processes proposed by both theory types are doubtless operative.

We now turn to consider more specifically the association between secularization, as an aspect of modernity, and the phenomenon of fertility decline in developed or industrializing nations.

SECULARIZATION AND FERTILITY RATES

Analyses of a number of data sets point to a loss of religious commitment among nations as they advance toward higher levels of economic development (Crockett and Voas 2006; Norris and Inglehart 2011). Among the best available data are those produced by the large-scale World Values Survey, which has tracked beliefs and values internationally since 1981. As some leading researchers in the field have observed, “the publics of virtually all advanced industrialized societies have been moving toward a more secular orientation” (Norris and Inglehart 2011, 24–25). Such findings support the so-called secularization thesis, the idea that movements in the direction of a loss of influence of religious beliefs and institutions occur as a consequence of modernization and rationalization.

Some have noted a number of difficulties with the thesis, not least of which is that it seems to apply reasonably well to Western nations with Christian cultural histories, but less so to others. For example, according to data from the World Values Survey (Wave 6), non-Western nations with Muslim majorities that have experienced economic growth have not witnessed a serious downturn in indicators of the importance of religion in the lives of their citizens. Similarly, in recent years, several former Communist states aligned with the Soviet Union have experienced *increases* in religious identification even in the face of rapid economic development. Furthermore, although all Western nations have dominant Christian traditions, it seems that some strongly Catholic countries, for example, Poland, Italy, Ireland, and Malta, have observed a slower or more delayed falling away of religious faith than have those with traditionally Protestant or Anglican majorities, for example, Scandinavian nations, England, Canada, Australia, and New Zealand (for relevant data, see World Values Survey website, Wave 6 2008–14). The commonly noted exception to this, the United States, has in recent years shown a quite rapid decline in religious faith, although why it has taken so long to occur is not clear. Overall, then, the idea that secularization inevitably follows industrialization can no longer be sustained. However, *within vulnerable cultures and given a sufficiently advanced stage of development*, the thesis is still a live option among sociologists, although what the primary drivers and boundary conditions of the process of secularization are still a matter of vigorous discussion (Bruce 2011).

What might be some of the key causal factors? Early social scientists, such as Durkheim and Max Weber, shaped their explanatory narratives in terms of Enlightenment themes. From this perspective, one could understand what was happening as a matter of society discarding religious beliefs and superstition to replace these with a scientific and rational outlook (Weber [1920] 1991; Pickering 2009; Weber [1920] 2011). This overtly ideological orientation has largely subsided, although there are signs that a similar stance still operates in those explanations that see secularization in terms of a process of increasing freedom from the constraints of the past. Such factors as reliable income, technological innovation, and the free flow of information lead to the questioning of religious beliefs, it is argued, and thus open the way to a more secular and science-based understanding of existence (Bruce 1996; against this, see Martin 2005).

Among the most widely discussed theories of secularization is that developed by Ronald Inglehart, Pippa Norris, and colleagues (e.g., Norris and Inglehart 2011). They argue that religion is primarily to be understood, at least in sociological terms, as a source of security for people who live in otherwise insecure societies. With increased national wealth, the possibility arises of a general improvement in security that comes with universal health care, a developed education sector, and an effective system of law and order. They point to Scandinavian and other Northern European nations as examples of countries that provide their citizens with a range of “safety nets” and, at the same time, have some of the lowest levels of religious faith and practice in the world. The seemingly anomalous case of the United States, which has retained high levels of religious faith while also being economically advanced, fits this theory, because, as Norris and Inglehart argue, the limited extent of health care cover and social security safety nets more generally in that nation are associated with an elevated insecurity. This has, in turn, helped to sustain religious faith.

According to Newsom and Richerson, however, while one can acknowledge a correlation between degree of secularization and level of security, this does not mean that there is a direct causal link between the two. They note that, in many nations, along with increasing economic development comes, at least in the period immediately after the increase, not a decline but a growth in religious practice. They suggest that “the influence of religious organizations tends to rise after the start of economic development and then begins to decline as modernization proceeds” (Newsom and Richerson 2014, 206). Moreover, and crucially, there is such a cross-national variability in the development of secularization that one must look for other factors to help explain the phenomenon. Finally, when we consider that the Norris and Inglehart hypothesis applies primarily to nations with particular cultural and religious backgrounds, it becomes clear that there is much room for further elaboration and, perhaps, correction, of this theoretical framework.

As a test of their own position that fertility rate (as a proxy for kin versus nonkin influence) is a leading factor in the explanation of secularization, Newson and Richerson related cross-national survey responses to a number of questions measuring moral and religious beliefs against both the variable YFBD and that of per capita GDP (2009). For 16 of the 18 questions, the correlation with the YFBD was stronger, often by a large amount, than with the economic variable. Given the large sample sizes, the wide range of nations sampled, and the fact that the majority of correlations were within the range 0.6–0.8, one might reasonably hypothesize that (a) “evolutionary” processes are likely to play a dominant role (since relationship with YBFD points to an “evolutionary” process) and (b) that there is a good chance that long-term social learning, even more so than factors closely linked to the extent of a nation’s economic development, serves as a significant element in the *causal* explanation of secularizing processes.

But what sort of account might be constructed to make sense of this connection? I would like to offer some brief comments that draw on the historical relationship between the values and norms traditionally found within families, and those especially within Catholic forms of the Christian faith.

The Mutual Influence of Family and Faith

Historically, the Christian religious tradition has exercised a multifaceted influence on the expression of kinship structures in the cultures in which it has taken root (e.g., Goody 1983; Mitterauer 2010, 58–98). The New Testament highlights the priority that membership in the fellowship of believers has over relationships among one’s kin (Luke 9: 59–62, 14: 26; Luke 18: 28–29; Matthew 10: 34–37, 23: 9; Galations 1: 13–17; Philippians 3: 4–7). These bonds within the fellowship were described in kinship terms, and although the teaching of Jesus and of the early Church emphasized the individual’s own responsibility before God for his or her salvation, it also highlighted the community of faith, that is, one’s spiritual “brothers and sisters,” as the critical context for pursuing this (Philippians 2: 12; Ephesians 2: 19–22; see also de Lubac [1938] 1988). Since then, the Western Church, through its doctrinal and moral teaching, has, in a fluctuating manner, had the effect of qualifying and softening the dominating familial bonds that might otherwise have applied among believers (Seidentop 2014). A further, less intentional factor pushing in the same direction has been the Church’s canonical constraints on consanguineous marriages (Goody 1983, esp. 48–156; Schulz et al. 2018).

And yet, alongside this, and in complex relationship with it, has been a strong affirmation of family life both in the New Testament witness (e.g., 1 Timothy 5: 4, 8), and in later Catholic magisterial texts. Contemporary

Catholic teaching continues to extol the blessings of a large family (Catechism of the Catholic Church §2373); more generally, the Church has encouraged family life and provided ritual and celebratory forms for families (Fieder and Huber 2016; Ellis et al. 2017). In addition, the core bonds of psychological attachment that ground cohesion within families are also those that are proposed as central to the believer's relationship with God, and, to a lesser extent, with others within the church (Kirkpatrick 2005). Moreover, those social and character values that have historically been engendered in Christian families, such as respect for parental authority, active concern for family members, rejection of excessive individualism, and acknowledgement of the kin versus nonkin social boundary are also those qualities, transposed into a Church context, that have been prized among Christians in both their intra- and extra-ecclesial interactions.

Conversely, within Western nations that have pursued substantial economic development, or perhaps more accurately have manifested low fertility rates for an extended period of time, it is often quite different values that dominate: egalitarianism and a caution regarding authority (Park and Lau 2016), an extended nonkin social network (Roberts et al. 2009), a strong individualism or autonomy (Triandis 1989, 2001; Triandis et al. 1988), and the relative neglect of family interaction in favor of other social horizons (Bordone 2009). These characteristics are most marked in nations with Protestant or Anglican religious traditions, which, as it turns out, also loom large among those countries that earlier reached below-replacement levels of fertility. However, even traditionally Catholic nations such as Spain, Italy, and Poland, though somewhat later, also now show similar or even lower levels. William Bainbridge and Rodney Stark's distinction between high- and low-tension religious groups might be relevant here. A high-tension group retains clear boundaries between itself and the prevailing cultural environment; in low-tension groups the boundaries are weaker and more indistinct (Bainbridge and Stark 1980). One might hypothesize that a relatively high-tension religious group such as the Catholic Church (although this characterization is not valid in every case, viz. France), would be slower to accommodate to the emerging predominance among its members of the "secular" values listed above. And yet, in time, it would be expected that such a values mismatch would lead to ecclesial decline and also to strong pressure to align the taught values with those found in the broader cultural context, both of which have indeed been observed.

That the outworking of this process is not inevitable in Western nations is demonstrated by the experience of the extremely high-tension Amish and similar religious groups who have managed to maintain elevated fertility rates, strong family groups, and religious teachings and practices which both sustain and are sustained by them, all within a largely secular culture (Greksa 2002; see also Hurd 2011). Such exceptions to the "rule" of

secularization suggest that, to the extent that, on the one hand, kinship groups preserve their influence over their members and open themselves to the confirmation and support of their distinctive values issuing from Christian churches, and, on the other hand, insofar as the churches themselves benefit from the participation of large families as a sign of continuing energy and growth, then the path to secularization might conceivably not be inevitable. At a national level, it is of interest that recent demographic data from Hungary are pointing to the possibility of a reversal in direction, although interpretation is complicated by the possible effects of having a nonreligiously neutral government in power during the past eight years (see data from Hungarian Central Statistical Office 2018).

In any case, the available data support the proposition that, among Christian groups, both Catholic and Protestant, in nations that have experienced significant declines in fertility, a similar fall is to be observed, although generally less than for the population as a whole (Philipov and Berghammer 2007; Frejka and Westoff 2008; Blume 2009). Thus, with the shrinking size of the typical Christian family and broader kinship group, and the resultant growth in influence of nonkin socially transmitted values, we should not wonder at the collapse of the mutually supportive family–faith community relationship, and a resultant increase in salience and influence of secular models for imitation and conformity on the religious outlook of citizens of modernized nations. Summarizing the above, then, I argue that, with the decline in the size and importance of the family, there is an ever-reducing influence of both kin- and Church-communicated valuations of religious faith. These processes operate mainly via social learning and thus accord better with an evolutionary rather than an environmental framework. They conceivably represent a key set of influences that have contributed not only to the emergence of modernity but also to its specific feature, secularization.

IMPLICATIONS FOR CHRISTIAN FAITH

Reflection on the phenomenon of modernity from the point of view of Western Christian faith has been extensive, not least because of the steady and at times dramatic decline in religious faith over many decades, and in some cases, centuries. It is, therefore, to be expected that the many etiological narratives that seek to identify the key factors in the rise of secularism should have emerged. This is indeed the case (e.g., Gilson 1952; MacIntyre 1990; Dupré 1993; Milbank 1993; Miner 2001). The work I have considered here suggests that the forces pushing in the direction of modernity and secularization are quite complex, and that, over and above rationales of a philosophical or theological nature, cultural evolutionary processes must be more seriously considered. This complexity arises from the fact that such processes operate as a kind of intermediate level of analysis between

rational thought, revealed beliefs, and the vagaries of history, on the one hand, and strictly environmental conditions on the other. Although cultural evolutionary processes give expression to the biological exigencies of survival and reproduction, they show themselves in the form of beliefs, practices, and culture-wide assumptions (e.g., that a mother should wean late, or that marriage is a lifelong partnership). And, because they take that form, they are amenable to influence by, for example, convictions of faith, which themselves cannot be reduced to epiphenomena of biological and cultural processes, although they are shaped to some extent by these. Rodney Stark (1996, 105–07, 73–94) offers evidence for the changes wrought by Christian beliefs on ancient Roman assumptions about age of marriage for young women, and on the best ways to respond to disease epidemics. Faith-related influences of this nature, he argues, were differentially adaptive, resulting in discernibly better outcomes, and help to explain the rise of Christianity during its early centuries. In sum, then, one might usefully draw an analogy between environmental explanations of human behavior based on rational cost-benefit analysis and the theological tradition that has favored intellectualist conceptions of modernity and secularity. While this mode of thinking certainly has validity, I have argued that the existence of potentially more powerful evolutionary models for understanding these cultural phenomena points to the need to complement such intellectualism by taking fuller account of other-than-rational processes shaping religious belief and practice. To do so is to open the way to a deeper and truer theology of faith and culture.

The evidence reviewed in this article points to the power of inbuilt biases (kin, prestige, and conformity) and social learning among humans as key elements in the diffusion of religious beliefs and practices. Thus, we tend to follow others' thinking more than we realize, and not just any others' but particular groups within our social/informational world. How that world is shaped, whether primarily by kinship/religious interactions that are able to mutually support each other, or by engagement with nonkin groups, exposure to high-status models of a "neutral" religious posture, or by living with the security of state-generated "safety nets," has a profound effect on the way Christian belief figures in our lives. A theological treatment of the processes of modernity needs to take these matters into account.

I would also remark that modernity's effects on human reproductive practices, at least on current projections, are shaping demographic trends that are probably not sustainable in the long term. Although demographic predictions, including those of the United Nations Population Division (2019), suggest that the global population will, on roughly its current trajectory continue to increase for the next century, its rate of increase is even now in decline, and some projections are that eventually the world's population will commence a long decline. Added to this, the constellation of beliefs and attitudes that low fertility rates bring with them appears to

be of a kind that weakens, in the long term, the “glue” that is necessary for a large-scale society to sustain itself (Henrich 2004). The preferences for instrumentalist models of relationship and for the ordering of social bonds through the use of bureaucratic norms provide a rather “thin” or fragile foundation for shock-resistant social structures. Relevant here is the notion proposed by some, that an important social function of religious belief is to provide the cohesive force necessary for large-scale societies to exist (e.g., Norenzayan et al. 2016).

Whether this is the case or not, reduced fertility among believers, of necessity, means a steady decline in the Western Christian faith: fewer clergy, greying and thinning congregations, and a pervasive loss of institutional energy. The outcome, in short, will be that there is not much material for the grace of God to work with. This prompts a reflection on the theological conviction that “grace purifies, confirms and builds upon nature” (see Catechism of the Catholic Church 1997, §§ 286, 865, 1152, 1203, 1644). The two key “imperatives” in the continuing existence of species are survival and reproduction. Unlike rationality, freedom, or relationality—which are commonly viewed as core features of humanity, viewed theologically—survival and reproduction, as two constants in human existence, are not distinctively descriptive of our species, but they are certainly part of our nature as animals. For this reason, it makes sense that they should be considered when determining what “nature” it is exactly that is purified, confirmed, and built on by grace. At least in the long run, a failure of reproduction is just as much a hindrance to grace as is, say, the serious brain damage caused by long-term drug abuse.

In view of the cultural evolutionary approach I have presented here, the way forward for Christian believers in the face of the process of modernity, while not obvious, at least points in some directions that have not been prominent in past treatments of the matter. Certainly, there is raised the interesting possibility that a Christian response might, at least in the first instance, need to focus on encouraging the birth of offspring among believers and on the nurture of families and wider kinship circles. Within this framework, the orientation of church life would need to be turned toward the shaping of family and kinship ideals in ways that more and more reflect the Christian faith and the exigencies of the present time. Perhaps one of the biggest hurdles in achieving this would be the construction of a narrative, especially for young women, that takes account of *both* individual and maternal/spousal vocations to which most of them will be called. Less obvious, however, is a similar imperative for young men to better balance their own individual and paternal/spousal callings.

For theologians, what has been offered, at least by implication, is a challenge to rebalance a traditionally dominant focus on the world of ideas so as to incorporate a deeper consideration of the cultural conditions in which the faith is lived out. Ideas, although important and life-shaping

in their own right, are also and to a significant degree the visible cultural elements whose less apparent vectors are cultural evolutionary processes involving such historical phenomena as economic growth and fertility rates. For the sake of the faith, intellectual humility urges us to take these matters into consideration in our theologizing.

CONCLUSION

The approach of cultural evolutionary theory represents a relatively new mode of understanding larger scale social, demographic, and economic dynamics operating over time spans measured in decades and centuries. The work of Newson, Richerson, and their colleagues draws on this approach in an attempt to shed light on the rise of modernity, and on secularization as one of its key features. Their central finding is that a key trigger among the many processes that bring about the emergence of modernity is the decline in fertility rate and its stabilization at or, more commonly below, replacement level. What then develops is the predominance of nonkin over kin influences and flow-on effects on social relations, cultural norms, economic development, and education. Following their lead, I have proposed further mechanisms by which the connections between fertility decline, modernity, and especially secularization can be understood. More specifically, I have put forward the idea that a significant factor in bringing about loss of religious belief and practice in Western nations is the emergence of a number of cultural values and norms antithetical to those that have historically been held by both families and Christian denominations, and that have been mutually sustaining for those institutions.

I have drawn two main implications from this understanding of modernity and secularization: first, that, in facing the corrosive effects of modernity with its impact on faith, the commonly accepted notion that Christian believers are engaged in what is essentially a battle of ideas needs to be called into question as at least an incomplete and possibly a serious misreading of reality; second, that the failure of believers to heed the divine command to "be fruitful and multiply" (Genesis 1:28 NRSV) is perhaps one of the core issues that Western Christian churches need to address if they are to extricate themselves from the seemingly inexorable decline they are currently experiencing.

What I have offered here is, of course, only an initial attempt to come to terms with the cultural evolutionary perspective and, in particular, the work of Newson, Richerson, and others as it relates to modernity and secularization. It potentially offers a powerful theoretical framework for understanding such broad cultural changes, and further efforts are needed to test it and to refine its findings. For Christian faith, moreover, it holds out the possibility of further enriching the links between a scientific

understanding of nature and history, on the one hand, and the work of grace, on the other.

NOTE

1. The variable YFBD is generally taken as the year when a nation's fertility rate fell below 90% of a previous plateau. The plateau itself is taken as the highest fertility rate of a sequence of approximately constant data points. If fertility rates declined and then rose again beyond the earlier plateau, this decline is ignored. See Coale and Watkins (1986) for details.

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