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Moral Beliefs about Homosexuality: Testing a Cultural Evolutionary Hypothesis

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Abstract

Attitudes to homosexuality are culturally variable and changing rapidly in many cultures. Investigating these variations provides opportunities to test ideas about how moral beliefs are generated, maintained and modified. The kin influence hypothesis proposes that the change in acceptance of homosexuality observed in Western populations is embedded in a wider cultural evolutionary process initiated by a change in the social structure of populations to be less kin-based, resulting in a reduction in the extent to which family members socially influence one another. This change occurs early in economic development but theory and evidence suggest that reduction in kin influence will cause a gradual weakening of family-promoting norms that continues for several generations. We present the results of two studies which test predictions of the kin influence hypothesis with respect to acceptance of homosexuality. The first is a role play experiment. Its results support the prediction that, even in modern populations, people are less inclined to communicate positive information about homosexuality when interacting with their own child. The second is an analysis of World Values Survey responses to a question about homosexuality. It compares models based on variables suggested by three hypotheses which have been proposed to explain variation in acceptance of homosexuality. The model which best fits the data and explains the most variance includes all the variables suggested by the kin influence hypothesis and some suggested by another hypothesis. We conclude that patterns of cultural variation cannot be explained by a single mechanism and that explanations which propose that differences in values result from individuals responding to their different circumstances are incomplete.

Keywords: Homosexuality, sexual prejudice, cultural evolution, kin influence, materialist/post-materialist values change thesis

Explaining cultural variation

The recent changes and wide diversity of moral beliefs about homosexuality provide an opportunity to compare explanations of cultural variation. Western societies have experienced change from widespread belief that homosexuality is morally wrong or at least abnormal, to the widespread belief that it is morally wrong to hold either of these beliefs. This change has taken place during less than the span of one lifetime (e.g. Bingham, 2015). Strong cross-national patterns exist in much cultural variation, including acceptance of homosexuality (Inglehart & Welzel, 2005). Currently, members of Western societies tend to be most accepting of homosexuality, members of African societies tend to be least accepting and members of most other societies tend to fall between (Pew Research Center, 2013). Explanations for patterns of cultural variations are of two basic kinds, “environmental” and “evolutionary” (Newson & Richerson, 2009).

“Environmental” explanations propose that cultural variation emerges from the direct responses of individuals to their environment. Members of the same community are similar because they experience the same environment. Cultural differences between populations exist because their members experience different environments. Cultural change occurs because environments change. An influential environmental explanation for increasing acceptance of homosexuality in Western countries is the “Materialist/post-materialist values thesis” (Inglehart, 1971, 1987, 2008). This hypothesis, citing Maslow’s hierarchy of needs (1943), suggests that growing up in environments which afford greater physical and economic security causes people to develop “postmaterialist” values that emphasize autonomy and self-expression. This makes them more tolerant of diversity, including diversity in sexual orientation. The relatively high tolerance of homosexuality in Westerners is therefore the result of their relative wealth and the stability of Western institutions.

“Evolutionary” explanations see cultural change as a more gradual process often playing out over many generations (Boyd & Richerson, 1985; Cavalli-Sforza & Feldman, 1981; Perreault, 2012). Culture is seen as emerging by a complex process which involves more than individuals responding to their environment. Individuals experience many social interactions which allow them to sample other people’s responses to environmental circumstances. From the information gained they develop ideas about the correctness and typicality of different responses. Members of the same community are similar not only because they share environments but also because they share socially transmitted information about how to behave. Cultural differences are partly due to differences in circumstances but also result from populations sharing different information and having different histories. The full cultural response to an environmental change is delayed because new generations are influenced by their elders.

An example of a cultural evolutionary explanation for the rise in acceptance of homosexuality in Western countries is that of Herek (2004). He argues that two events in the 1970s contributed new information about homosexuality and that this had “profound consequences for later discourse about sexual orientation in the United States and much of the rest of the world” (p. 6). One event was the introduction of the word “homophobia” to describe entrenched thinking about the “problem” of homosexuality. The second was the declaration by the American Psychiatric Association Board of Directors that a same-sex orientation is not inherently associated with psychopathology, hence the subsequent removal of homosexuality from the *Diagnostic and Statistical Manual of Mental Disorders*. The slowness of the rate of cultural change is demonstrated by the observation that Western populations described as being “tolerant” of homosexuality continue to include members who exhibit sexual prejudice; they have a negative attitude towards homosexual behavior and individuals whose sexual orientation is not heterosexual (Herek & McLemore, 2013).

The kin influence hypothesis

We will argue here that the changes in attitude to homosexuality described by Herek (2004) are part of a larger pattern of change with deeper roots and more wide-ranging effects. Newson et al. (2005) proposed the kin influence hypothesis as a partial explanation for the rapid cultural change that accompanies economic development. That article focused on the adoption of the belief that it is prudent to limit the number of children families produce. It suggested that norms which encourage high fertility are maintained in populations in which people live among their kin and are strongly influenced by kin. Most of the research that has since been reported on kin influence has also looked at its effect on child-bearing decisions (e.g., Mathews & Sear, 2013a, 2013b; Newson et al., 2007; Shenk et al., 2013). Newson and Richerson (2009), however, reported evidence suggesting that the kin influence hypothesis may be useful in explaining a number of the other cultural changes Western societies have experienced during the last 150 years, including increasing acceptance of homosexuality.

In this paper, we explain in more detail why reduced influence from kin can help to explain why norms that influence reproduction and family life have changed and continue to change in many societies. We also report the results of two studies which test predictions of the kin influence hypothesis regarding patterns of variation in acceptance of homosexuality.

The kin influence hypothesis proposes that economic development initiates this cultural change process because it changes the social structure of populations so that new kinds of social groups form and the influence of the family is reduced. Because people begin to spend a larger portion of their time interacting with friends, co-workers, educators and mass media, a higher proportion of cultural information is transmitted during *non-kin* interactions. Theory and evidence suggest that, during interaction with fellow family members, individuals are likely to bias their communication to encourage behavior that promotes the family. Thus, with the onset of economic development, members of a population begin to be exposed to cultural information which is less biased in favor of family promotion. This reduction in bias is likely to initiate a process of cultural change (Newson, 2009; Newson et al., 2005; Newson et al., 2007; Newson & Richerson, 2009).

The changes in the social structure of a population that accompany economic development have been documented and described many times and in many ways by scholars from many disciplines:

- Prior to economic development, people live in “traditional” societies mostly comprised of small rural communities in which people are connected with personal ties and shared interests and traditions (E. Durkheim, 1984/1893).
- Members of these communities identify most strongly with their “family” (variously defined and sometimes including members who are not genetically related) and family allies (Anderson, 1991; Wilson, 1976).
- The “family” is the main social institution in most people’s lives, providing education and organizing employment for its members as well as supplying their welfare needs and cooperating in raising the next generation (Davis, 1937; Hrdy, 1999; Ogburn, 1922).
- With economic development, individuals begin to migrate away from their natal communities to new centers of employment (Zelinsky, 1971).
- Other social institutions take over many of the roles of the family (Davis, 1937). Social networks become wider and shallower (Bongaarts & Watkins, 1996; Kohler, 2001).
- People begin to identify themselves as belonging to a number of social groups, often including a large widely recognized ethnic, language, religious or national group (Anderson, 1991; Iyer et al., 2009; Tajfel, 1978).

The small communities in which most people live prior to economic development maintain a suite of cultural norms which promote the family and its interests, especially the vital purpose of raising the next generation (Newson et al., 2007). These norms encourage individuals to believe that it is morally correct to perceive the interests of their family to be identical to (or more important than) their own interests and preferences. Thus, it is common for women to agree to marry a man chosen for them by family elders (Apostolou, 2007, 2010). Men also acquiesce to the wishes of their elders and, if deemed necessary, risk their lives fighting to defend or expand the resource base of their family and its allies (Bowles & Gintis, 2011). It is interesting to note that family-promoting norms continue to be strong in populations such as Old Order Anabaptists that live in kin-based communities. These adherents of the Amish, Hutterite or Mennonite religion isolate themselves culturally (but not economically) from the modern North American populations that surround them (Kraybill & Bowman, 2001). They are prosperous and take advantage of modern medical technology but have avoided the change in social structure which economic development brings to most populations.

In most communities, the progression of economic development reduces social influence from kin. Despite this, social norms regarding the family remain largely unchanged at first because people pay most attention to information consistent with norms they have already adopted or are common in their community (Hovland et al., 1953). Therefore at early stages of economic development young adults still aspire to having a large number of children, and teach them that it is morally wrong to disobey family elders or question gender division of labor. Their belief that it is morally right to favor family members (i.e. practice nepotism) slows economic development by hindering the development of effective businesses and government institutions (Inkeles & Smith, 1974). But the cumulative effects of the reduction in kin bias cause cultural norms to increasingly diverge from those of populations with a traditional kin-connected social structure. Potentially, all norms which influence behaviors of interest to the family are affected, including reproductive choices, sexual behavior, parenting behavior, gender roles and obligations to family.

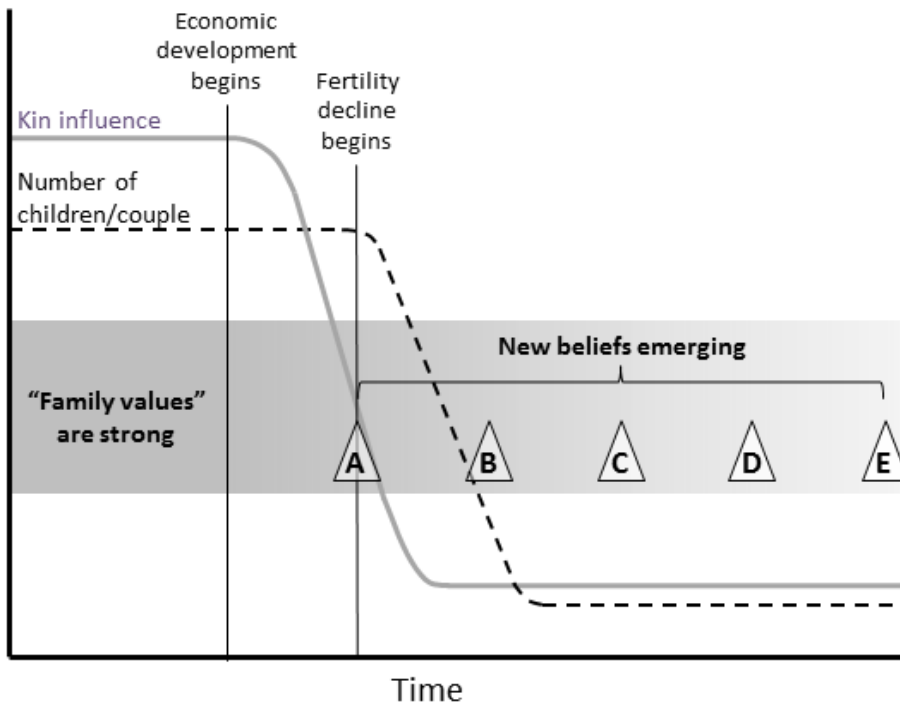
Because it takes time for the effects of reduced kin influence to be manifest, it is not obvious that its reduction may be driving cultural change. Scholars trying to identify causes of cultural change are more likely to seek them among contemporaneous events.

The possibility that reduction in influence from kin may help explain the dramatic decline in fertility that is associated with economic development has been considered by a number of researchers attempting to account for variation in women's reproductive decisions (Alvergne et al., 2011; Mace & Colleran, 2009; Mathews & Sear, 2013a, 2013b; Mulder, 2009; Shenk et al., 2013). Their analyses have included measures of contact with kin along with variables representing a number of other factors (e.g. level of education, wealth, employment, personality and socio-economic status). Such analyses treat contact with kin as an environmental variable and do not consider the possibility that it initiated a cultural evolutionary process in the past. They do, however, test the assumption that information passing between kin is biased – that, all things being equal, individuals are more inclined to encourage their kin to behave in ways likely to promote the family. In discussing reproductive choices, kin are more likely to promote behavior likely to increase their shared fitness and less inclined to encourage behavior that reduces reproductive success (Newson et al., 2007). Thus, in low-fertility affluent populations, the hypothesis predicts that individuals who have had more contact with kin will have received slightly more encouragement to reproduce and that their behavior will reflect this. Analyses of the reproductive outcomes of British women suggests that this is the case (Mathews & Sear, 2013a, 2013b). In a longitudinal study, childless young women who reported more contact with kin were found to have their first child at a younger age and be more likely to go on to have a second child.

An analysis of factors affecting variation in beliefs about homosexuality provides a way to test predictions the hypothesis makes about the longer term effects of the decline in kin influence. Many cultures are tolerant of homosexual behavior (Kirkpatrick, 2000) but it is seldom in a family's interest for a member to refuse to enter a reproductive partnership with a member of the opposite sex. The kin influence hypothesis therefore predicts that kin-based societies will maintain norms that discourage exclusive homosexuality. After influence from kin is reduced and family-promoting norms gradually weaken, however, it will become increasingly acceptable to behave in ways that do not help to build and maintain large, close-knit and supportive families. The hypothesis suggests that acceptance of homosexuality is relatively high in Western populations because these populations were the first to undergo economic development. For most Westerners, more than five generations have passed since the reduction in influence from kin took place. By contrast, in African populations, where acceptance of exclusive homosexuality is low, the family is, or was until recently, the main social institution. Thus, according to the hypothesis, the recent rapid rise in Westerners' acceptance of homosexuality has a historical cause and cannot be completely explained by contemporaneous events.

Historians, demographers and sociologists provide many descriptions of the cultural change experienced by Western populations over the last 150 years. Much of the change has been in beliefs and behaviors that affect the family, such as those which influence marriage and child-rearing. In the 19th century, young adults of European descent began to abandon the belief that it is desirable to raise as many healthy children as possible (Caldwell & Ruzicka, 1978; Coale & Watkins, 1986), causing considerable alarm at the time (e.g., National Birth-Rate Commission, 1916). Similar alarm greeted a number of other cultural changes that had implications for families. During the 19th and early 20th century, young Westerners began to see marriage less as the formation of a reproductive partnership and more as the union of two people who thought they would be happy together (Burgess & Locke, 1945). Ideas about what constitutes a “suitable spouse” changed rapidly. A group of undergraduates attending the University of Wisconsin in 1939 (346 males and 282 females), asked to rank the importance of a number of considerations when choosing a marriage partner, ranked “mutual attraction – love” fourth, by men, and fifth, by women. Men chose “dependable character” as the most important attribute for a wife and women saw “emotional stability” as most important in a husband (R. Hill, 1945). American university undergraduates were asked to rank the same list in 1956, 1967, 1977, 1984/5 and 1996 (Buss, 2001). “Mutual attraction – love” rose in the ranks in later surveys and lodged firmly at number one in 1977 for females and in 1984/5 for males. Many married couples found their mutual attraction and love had weakened. Divorce became increasingly acceptable and then common during the 20th century (Blake, 1977; Stone, 1990). It also became acceptable and then common for children to be born to parents who were not married (Raley, 2001; Van de Kaa, 1987). The celebration of marriage of same-sex couples is the most recent in a long series of changes in beliefs about marriage that occurred in the West during the last 150 years. See Figure 1 for a graphical summary these changes.

Figure 1. Economic development and change in cultural norms related to the family



This is a graphical depiction of the evolution of norms related to the family experienced by Western populations since they began to develop economically in the 18th and 19th centuries. Among the “family values” people held prior to economic development was the perception that the purpose of marriage is to ensure that babies are born into a family system that will provide care. Young people are expected to marry a person their elders approve of and to raise as many children as they can. Once the couple has produced children, their marriage is considered to be a lifetime commitment.

As economic development proceeds, kin influence declines as people begin to work and be educated outside the family. Literacy and communication technology also increase influence from non-kin.

Examples of new beliefs that emerge once people have less interaction with kin:

- A. It is acceptable for couples to limit the number of children they have if they want to.
- B. People should marry someone they are in love with and who makes them happy.
- C. Even if they have children, couples can divorce if one or both of them is unhappy.
- D. Divorced and single people and unmarried couples can make perfectly good parents.
- E. If homosexual couples are in love and want to marry, they should have the right to do so.

The two studies reported here

We report the results of two studies in this paper because theories of cultural change explain variation at the level of the population by identifying factors that act at the level of its members. Hypotheses therefore make predictions at two levels and, ideally, predictions at both levels will be tested.

If the increased acceptance of homosexuality is part of a cultural evolutionary process initiated by the decline in influence from kin, then two patterns will exist in the variation of acceptance:

1) At the individual level, communications about homosexuality will be influenced by feelings related to desire to preserve the family. This bias is likely to be small because the norms of the group that an individual identifies with have a more powerful influence. But in general, individuals in all cultures will be more inclined to encourage their kin to behave in ways likely to increase their contribution to the family and the biological “fitness” of its members (Newson et al., 2007). In Western cultures a preference for same-sex sexuality is associated with lower reproductive success (Bell & Weinberg, 1978; LeVay, 1996) so the hypothesis predicts that during interactions with their children Westerners will communicate less encouragement of homosexual behavior than during other social interactions.

2) At the population level, patterns of variation in acceptance of homosexuality will suggest that populations which have begun to develop economically are proceeding through a similar cultural evolutionary process. Their acceptance of homosexuality will be related to how far along that process the culture of their population has progressed.

The first study reported here tests the individual level prediction and the second tests the population level prediction.

Study One – Kin influence on communication about homosexuality

Men and women were invited to take part in an internet study of the factors that influence opinions about homosexuality. Participants were asked to read a vignette depicting a younger male asking an older person about homosexuality and were randomly assigned to one of three conditions, which varied the relationship between the younger and older person. The younger person was depicted as either the son of the older person, or a friend, or a stranger. After reading the scenario the participants were given the task of writing what they thought the older person would say. Then they were asked to respond to multiple

choice questions about their own views on the advice that the younger male should be given, their own views about homosexuality, and their own sexuality.

It is plausible that participants assigned to the “parent” condition, who are parents themselves, will think about advising their own child when composing their “advice”. If they do, then the kin influence hypothesis predicts that they will be less inclined to communicate acceptance of homosexuality than they would in the “friend” or “stranger” condition. We reasoned that a disinclination to express acceptance would make them less likely to agree with the statement “*Homosexuality is an acceptable alternative lifestyle.*” The difference would not be observed in participants who were not parents. Degree of agreement with this question was, therefore, a possible dependent variable for this study.

It is also plausible, however, that parents thinking about advising their own child will feel confused about how to respond, particularly if their general beliefs about homosexuality are positive. If people believe homosexuality to be acceptable but feel disinclined to express that belief because they are thinking about advising their child, they may decide to simply not complete the study. An alternative dependent variable, therefore, is whether or not participants who were parents were less likely to complete the study if they had been randomly assigned to the parent condition. In order to detect such an effect, we asked participants if they were parents (along with requests for other demographic information) before asking them to read and respond to the condition-specific vignette.

Method

Internet users were informed about a study to investigate how circumstances influence opinion about homosexuality via Facebook and email lists, such as the University of Exeter Psychology Department subject panel, University of the Third Age, a subject recruitment website, and a lifestyle blog (<http://www.advicegoddess.com/goddessblog.html>). Those interested could click on a link that would provide more information. The text of the recruitment and study materials was in English. Those wanting to participate in the study were linked to a questionnaire associated with one of the three experimental conditions.

After supplying demographic information including whether or not they were parents, participants were asked to read a vignette and answer questions. The vignette and some of the questions varied according to the participant’s gender. Women read about a male child asking his mother, his teacher or a helper at an afternoon club about homosexuality. Men read about a young adult male asking his father, an older friend or anonymous helpline volunteer about homosexuality. The text is included in the supporting information (Document S1).

Of the 1163 people who began to fill in the online questionnaire, 1123 (96.6%) completed the initial demographic questions. Of these, 45% reported that they lived in the United States, 40% in the United Kingdom and 10% in other European countries or Canada, Australia or New Zealand. The remaining five per cent reported living in a variety of countries, but a number of these said that they were from the United States or a European country. The participants were 37.8% male and 43.4% of them were parents.

Results were analyzed with IBM SPSS 21.

Results

Of the 1123 participants who provided demographic information, 807 (71.9%) completed the study. Neither the age nor gender of the participant influenced whether he or she completed the study. Table 1 summarizes key information about those completing and not completing the study.

Among the participants who completed the study, we did not find the predicted difference in response to the question about acceptability of homosexuality, but the predicted effect was observed in participants’ decision about whether to complete the study. Parents assigned to the parent condition were more likely to abandon the study than those assigned to one of the other two conditions. In a logistic regression model that included age, sex, parental status, condition (parent condition compared to the other conditions) and the interaction between parental status and condition, participants who were parents were, in general, more likely than non-parents to complete the study ($p < 0.01$) and participants who had been randomly assigned to the parent condition were more likely to complete ($p < 0.05$). However, when in the parent condition, participants who were parents themselves were less than half as likely to complete ($p < 0.05$) (Table 2).

The responses of the participants who completed the task and answered the questions show that acceptance of homosexuality was high among the people attracted to the study (see Table 1). The parents in the sample were considerably older than the non-parents and, if age is controlled, whether or not a participant was a parent did not influence his or her response to questions about acceptance of homosexuality.

Table 1. Comparison of participants who completed and failed to complete the study

Participant characteristic	Completed study		Did not complete study	
	Parents	Childless	Parents	Childless
Completed demographic questions	360	447	127	189
Assigned to “Parent” condition	104 (28.9%)	154 (34.5%)	45 (35.4%)	48 (25.4%)
Male	143 (39.7%)	159 (35.6%)	52 (40.9%)	71 (37.6%)
Aged 35+ years	309 (85.8%)	135 (30.2%)	112 (88.2%)	64 (33.9%)
Reports being heterosexual	313 (86.9%)	316 (70.5%)		
Reports having gay friends	331 (91.9%)	407 (91.3%)		
“Homosexuality is an acceptable alternative lifestyle.”	Strongly agree_	137 (38.1%)	260 (58.2%)	
	Strongly disagree_	23 (6.4%)	11 (2.5%)	

Table 2. Logistical regression of study completion

Variable	Odds of completing
Age	.895
Sex	.956
Parent	1.749 **
Parent Condition	1.534 *
Parent by Parent Condition	.482 *

Discussion

Designing experiments to test predictions of the kin influence hypothesis at the individual level is a challenge. The hypothesis predicts a slight bias but assumes that people will mostly communicate information consistent with the social norms they have adopted. They may be especially inclined to do this when volunteering information for an academic study of opinions. In an earlier experiment we found that being asked to think about advising a daughter about child-bearing decisions did influence women's choices about the advice they would give (Newson et al., 2007). The results of this study suggest that being asked to think of advising their child also influences communication about homosexuality.

The conclusions that can be drawn from this study are limited because the responses given in the three conditions cannot be compared. Although participants were randomly assigned to the three different conditions, the composition of the groups completing the study was not random. Nevertheless, the results of this study are consistent with the prediction that, during interactions with kin, Westerners are biased in their communication about homosexuality. Most parents choosing to participate in the study gave responses suggesting their acceptance of homosexuality was high, but those asked to think about advising their own child about homosexuality were, as predicted, more likely to choose to abandon the study and thus avoid communicating information that might encourage homosexual behavior.

Study Two – Comparing explanations of cultural variation

A new theory to explain patterns of variation in acceptance of homosexuality is unlikely to attract academic interest unless it promises to add to the insight provided by currently accepted theories. We therefore compare the explanatory power of the kin influence hypothesis with that of the two well-cited explanations for variation in beliefs about homosexuality described in the introduction: (1) the “materialist/post-materialist value change thesis” (Inglehart, 1987, 2008), an environmental explanation, and (2) Herek's (2004) evolutionary explanation. Each of the three explanations suggests a group of variables likely to explain individual and population level differences in acceptance of homosexuality. This allows us to make a regression model based on each of the explanations and compare how well the models fit cross-national data on acceptance of homosexuality. It is, however, unlikely that a model based on only one of these explanations will be the best. Cultural variation is influenced by many factors. We can, however, determine which combination of the variables suggested by the three explanations best fits the data and explains the most variance.

Cross-national data on acceptance of homosexuality is provided by The World Values Survey (European and World Values Surveys, 2009). In data collections performed between 1997 and 2008, the following question was asked to representative samples of people living in 85 countries (a total of over 180,000 respondents):

“Please tell me for each of the following statements whether you think it can always be justifiable, never be justifiable or something in between, using this card”. Among the statements is the word “Homosexuality”. Respondents chose a number on the card between 1 (“Never Justifiable”) and 10 (“Always Justifiable”).

Survey participants' responses to other questions allow researchers to look for relationships to be between acceptance of homosexuality and a wide range of other individual-level characteristics. Language and cultural differences place some limitations on the equivalence of the responses of people living in different countries but many papers have been published reporting analyses of this dataset, suggesting that it is considered a useful tool for comparing how well different combinations of individual-level and country-level variables explain the patterns of behavioral variation.

Table 3 is a summary of the variables chosen for the models we developed to compare the three explanations of cultural variation in acceptance of homosexuality. This is followed by a more detailed explanation of our choice of variables.

Table 3. Summary of models compared in the analyses

Hypothesis	Description	Individual-level variables	Country-level variables
1. The materialist-postmaterialist value change thesis (Adamczyk & Pitt, 2009; Andersen & Fetner, 2008b; Inglehart & Norris, 2003)	an ecological hypothesis proposing that change is driven by changing environmental conditions which make people feel more secure so that they become more tolerant of diversity including sexual diversity	<ul style="list-style-type: none"> • age • trusting response • years in formal education • religious denomination • religion important 	<ul style="list-style-type: none"> • mean wealth (GDP/capita) • wealth inequality (Gini index)
2. Exposure to new information about homosexuality (Herek, 2004)	a cultural evolutionary process proposing that change is driven by earlier introduction of specific information about homosexuality to the population which influences the evolution of beliefs about homosexuality	<ul style="list-style-type: none"> • religious denomination • religion important 	<ul style="list-style-type: none"> • televisions/1000 people • formerly in Soviet bloc • > 90 per cent Muslim? • English speaking
3. The kin influence hypothesis (Newson & Richerson, 2009)	a cultural evolutionary hypothesis proposing that change is driven by a continuing decline in encouragement of family-supporting behavior due to a change in the structure of society that occurred in the past	<ul style="list-style-type: none"> • age • trusting response • years in formal education • acceptance of divorce 	<ul style="list-style-type: none"> • number of years since fertility began to decline

1) The materialist/post-materialist value change thesis (Inglehart, 1987, 2008):

As mentioned above, this hypothesis proposes an explanation for cultural variation that is based on Maslow’s (1943) “hierarchy of needs” suggestion that people are motivated to strive to satisfy their most important unmet needs. It assumes that growing up in a society in which one’s lower order physiological and safety needs are met allows a person to be orientated toward concern for higher order needs, such as esteem and self-actualization, and such a person is therefore inclined to have “post-materialist values” (Inglehart, 1990). Proponents of the hypothesis suggest that possessing postmaterialist values causes them to be more tolerant of diversity, including diversity in sexual behavior. Analyses of samples from the World Values Survey dataset have shown that models composed of variables suggested by this explanation of cultural variation explain a considerable portion of the variance observed in acceptance of homosexuality (Adamczyk & Pitt, 2009; Andersen & Fetner, 2008b; Inglehart & Norris, 2003).

The materialist/post-materialist value change thesis suggests that a person’s acceptance of homosexuality is predicted by measures of the level of wealth in his or her country; those living in wealthier countries

are more likely to have had their lower order needs met while they were growing up (Inglehart, 2008). Since the human population experienced substantial wealth increases during the 20th century, the hypothesis also predicts that, in general, younger people will be more tolerant of homosexuality. Andersen and Fetner (2008b) note that, since people living in the same country do not enjoy equal levels of wealth, the hypothesis also suggests that individuals' acceptance of homosexuality will be influenced by their own financial security, social class, level of trust and the degree of wealth inequality in the country in which they reside. Adamczyk and Pitt (2009) argue that the hypothesis also suggests that religious belief will predict acceptance of homosexuality. They point out that religion can be considered a form of self-expression and so individuals who have had their primary needs met may still fail to develop a tolerance of homosexuality if they perceive non-acceptance of homosexuality to be an expression of their religious belief.

2) The introduction of positive information about homosexuality (Herek, 2004)

Herek's explanation suggests that two events in the early 1970s, the introduction of the concept of "homophobia" and official acknowledgement by psychiatrists that homosexuality is not inherently associated with psychopathology, changed public and private discourse on homosexuality in the United States and many other countries. After this, increasing numbers of people publically declared themselves to be homosexual and thus the public became increasingly familiar with homosexuals through personal interaction and the media. With increasing familiarity came increasing acceptance (Herek & Capitano, 1995). More discussion of homosexuality encouraged scientists to look for biological factors that may cause some people to have a same sex sexual orientation (LeVay, 1996). Their speculation was widely covered by the media and the suggestion that some people were innately homosexual (and therefore had no choice about whom to love) became, for many Westerners, justification for supporting what became the LGBT movement (Lewis, 2009). People with a sexual orientation different from that of the majority were framed as a quasi-ethnic minority group and the responses of the heterosexual public were shaped by earlier movements for civil rights for racial and ethnic minorities.

Whether or not a respondent is homosexual or personally knows homosexuals is likely to be an important source of variation in acceptance of homosexuality, but the World Values Survey dataset does not include this information. A number of country-level variables do, however, provide an indication of the respondent's exposure to information likely to increase their acceptance of homosexuality. The popular media, at least in Western societies, became a source of information about homosexuality. Interviews, documentaries and dramas were broadcast which familiarized people with homosexuality. To be exposed to this information, individuals need access to communication technology so the number of televisions per thousand people in a country provides a country-level variable indicating the likely exposure of an individual to this media content. However, not everyone with access to television would have had the same exposure. Most of those living in countries allied with the Soviet Union, for example, did not have access to Western media until the 1990s. Countries in which the Muslim religion is very influential would also likely have had less exposure to Western ideas about homosexuality. This would predict less acceptance of homosexuality in former Soviet bloc countries and in countries where a considerable majority of the population is Muslim. If, as Herek (2009) suggests, much of the new information originated in the United States, we might also expect people in English-speaking countries to be more accepting.

Meanwhile, the characteristics of some people indicate that they may be more likely to be exposed to information that discourages acceptance of homosexuality. For example, some religious texts, particularly those of the Abrahamic religions, include statements discouraging homosexuality. An individual's participation in religion, their religious denomination and how important religion is in their lives, is likely also to predict acceptance of homosexuality.

3) The kin influence hypothesis (Newson & Richerson, 2009)

One prediction of this hypothesis is that variables which imply an individual has had greater exposure to influence from non-kin will predict increased acceptance of homosexuality. For example, those who give a trusting response to the “trust question”¹ are likely to interact more freely with non-family members. More years spent in education suggests the respondent was influenced more strongly by teachers and less strongly by family members. The hypothesis suggests, therefore, that more trusting and higher educated individuals will be more accepting.

The hypothesis describes a cultural evolutionary process which populations experience and suggests that respondents who are socialized later in that process will be more accepting of homosexuality. If this is the case, then acceptance will be predicted by variables that give an indication of when the cultural evolutionary process began in the respondent's population and the timing of an individual's socialization in relation to the process. The respondent's age would therefore be a predictor. The younger members of all populations were socialized later in that population's evolutionary process. However, whatever their age, respondents who are members of populations that are further along the cultural evolutionary process will be more likely to be accepting of homosexuality. As mentioned above, among the first cultural changes to occur in the proposed process is the adoption of the belief that it is prudent to limit family size. This change now has begun to occur in almost all populations, as evidenced by the decline in fertility that has been observed in almost every country. The amount of time that has passed since fertility began to decline in the respondent's country, therefore, provides an indication of when his or her population began to experience the cultural evolutionary process.

The hypothesis also suggests that variables which provide evidence of the individual's opinion of behaviors that weaken the family will predict acceptance of homosexuality. In general, the more strongly a person believes that the welfare, stability and reputation of an individual's family are more important than an individual's own needs and desires, the less accepting of homosexuality he or she will be. The World Values Survey provides such a measure in the response to a question about whether divorce can always be justifiable, never be justifiable or something in between. The more accepting of divorce a respondent is, the more likely s/he is to accept homosexuality.

As can be seen in the summary in Table 3, the three explanations we are comparing, though very different, suggest many of the same individual level variables as predictors. The measures of social class and individual wealth are not comparable from the 85 countries that we are able to compare using this data so we judged that the number of years the respondent reported spending in formal education to be the best proxy for his or her social class and wealth (Breen & Jonsson, 2005). The number of years spent in education is also a predictor in the kin influence hypothesis model. The only individual-level variable that is unique to any model is the acceptance of divorce, which the kin influence hypothesis suggests will predict acceptance of homosexuality. It could be argued that acceptance of homosexuality and divorce both reflect belief in self-expression (Inglehart, 2008). The materialist/post-materialist values change thesis does not, however, specifically predict a link between acceptance of homosexuality and divorce any more than it predicts a link between acceptance of homosexuality and acceptance of marijuana-smoking, drum-playing, devotion to a cult, or having lots of children, all of which can also be seen as forms of self-expression.

The country-level predictors suggested by the three explanations are different but three of these (one from each model) are highly correlated (see Table 4), adding further to the difficulties in distinguishing between the extent to which the models explain variance.

Table 4. Correlations between continuous country-level variables.

	TVs/1000 people	GDP/capita (2002)
Years since fertility decline began	-0.825	-0.608
Number TVs/1000 people (1990)		0.812

The overlaps between the predictors suggested by the three explanations are a reflection of how difficult it is to explain cultural variation in a complex and dynamic world in which many possible causative factors are interacting and feeding back on each other. In such a world, simply showing that a hypothesis suggests predictors that “explain” variation in a statistical sense implies that reality is simpler than it really is (Burnham & Anderson, 2002). Statistical techniques have been developed for comparing models in which such overlaps exist to determine which combination of variables creates a model that fits the data best while explaining the most variance (Efferson & Richerson, 2007). If a model composed of variables from more than one explanation fits best, then it is likely that more than one process is contributing to the variation we observe.

Method

The World Values Surveys dataset was downloaded from the World Values Survey Website (<http://www.worldvaluessurvey.org>). Respondents surveyed in years 1997 to 2008 were deemed eligible for the study if they were aged between 18 and 80, had answered all the questions that would provide the individual level variables for the analyses and lived in a country for which the country-level variable information is publically available (see Table S1 for country-level information and sources). This provided a sample of 152,165 participants from 85 countries. The year that the survey was performed was included as a variable in all the models.

The variation in responses to the homosexuality question was not normally distributed. Over half the respondents (52.8%) chose “1” (i.e. that homosexuality is “Never” justified). The distribution of responses could not be transformed in such a way that it would meet the assumptions of linear regression (see Figure S1). We therefore created a dichotomous variable, with a “1” or “Never” response indicating a belief that homosexuality is unacceptable and a greater than 1 response indicating a belief that homosexuality is sometimes acceptable. We performed two-level (individuals nested within countries) logistic regression analyses using MLwiN 2.26, estimating parameters using Markov Chain Monte Carlo methods which gives a goodness of fit diagnostic for each multi-level logistic regression model: the Deviance Information Criterion (DIC). The DIC is an extension of the Akaike Information Criterion (Burnham & Anderson, 2002) to hierarchical models as a means of taking into account the relative poor fit of group level variables to individual-level data (Ando, 2007). The lower the value of the DIC the better the model fits the data. Estimation time increases with the complexity of the model and number of cases. To keep the time within reasonable limits it was necessary to reduce the size of the sample by randomly selecting half the participants.

It was also necessary to collapse categorical responses to questions about education and religion. Education was collapsed to three categories: none or primary school only; at least some secondary school; at least some tertiary education, with “at least some secondary school” as the comparison category. We created a dichotomous variable for “importance of religion” (“quite” or “very” important versus “little” or “not” important or responding “none” to the religious denomination question). We created five categories from the many categories the dataset provided for responses on religious denomination: None; Muslim; Christian; Other (Eastern); Other (various). “None” was used as the comparison category.

Results

A “null” two-level logistical regression model (a model containing no explanatory variables) estimated a variance partition coefficient of 44.5, i.e. that 44.5% of the residual variance in acceptance of homosexuality is attributable to country-level characteristics or differences between populations rather than individual differences. This variance can be potentially “explained” by developing the model with the addition of predictors at the individual or country level.

The variance partition coefficient was considerably reduced when variables suggested by each of the three hypotheses were added (see Table 5). Most of the variables were found to be strong predictors of the response to the homosexuality question. However, being from an English-speaking country or a country with more equal wealth distribution was not found to be associated with a change in odds of accepting of homosexuality. In model 4 (the composite model) being Christian or a member of an Eastern religion did not significantly affect acceptance of homosexuality.

Two individual-level variables, the respondent’s degree of acceptance of divorce and being of the Muslim faith, had a large effect size in the models in which they were included and the size of the effect was found to vary between different countries. Models in which the effect of these variables was allowed to vary between countries were found to fit the data better (had a lower DIC) and explained more of the country-level variance. Acceptance of divorce was a stronger predictor of acceptance of homosexuality in countries where acceptance of homosexuality was high. The correlation between acceptance of homosexuality and divorce was lowest in the seven countries where over 90 percent of the population is Muslim.

Of the three explanations (see Table 5), the cultural evolutionary hypothesis based on the mechanism suggested by Herek (2004) provides the model that leaves the least unexplained variance at the country level (22.7%), but the kin influence hypothesis provides the model that fits the data best with a DIC of 71068, compared to DICs of over 77000 for the other models. The composite model, which contains the variables suggested by the kin influence hypothesis along with the variables representing importance of religion and religious denomination and the dichotomous variables representing whether or not the respondent’s country had been part of the Soviet bloc and is more than 90% Muslim, provides the best fit to the data (DIC = 70785).

Table 5. Results of two-level logistic regression comparing three models and a composite model

	1. Materialism/ Post-materialism value change thesis	2. Exposure to infor- mation about homosexuality	3. Kin influence hypothesis	Composite model
	Effect on odds of responding that homosexuality is sometimes justified			
Year survey was performed	1.084	1.079	1.066	1.068
Age	0.979		0.982	0.982
Trust question response is "Trusting"	1.324		1.311	1.314
Religion is important	0.685	0.610		0.847
Religious denomination (compared to "none")				
Muslim	0.419	0.445		0.480
Christian	0.893	0.833		0.977n.s.
Other – Eastern	0.927n.s.	0.822		0.973n.s.
Other – various	0.633	0.611		0.704
Education (compared to "secondary")				
None or primary only	0.768		0.840	0.853
At least some tertiary	1.473		1.343	1.330
Acceptance of divorce (1 to 10)			1.307	1.309
Country-level variables				
Gini index	1.017 n.s.			
GDP/capita (1000 US dollars)	1.091			
TVs/1000 people (1990)		1.005		
Former Soviet		0.524		0.524
English speaking		0.784 n.s.		
Population > 90% Muslim in 1990		0.209		0.340
Years since fertility decline began			1.014	1.014
Unexplained country-level variance	27.5%	22.7%	34.3%	22.1%
Goodness of fit (DIC)	77214	79599	71068	70785

Discussion

It is not difficult to find patterns of correlation of variables to support ideas about why acceptance of homosexuality varies, and this is why it is necessary to compare models to determine which provides the best fit of the data. We found that a model made up of variables from more than one of the cultural change hypotheses models provides the best fit of the data and explains the most variance. What's more, most of the variables in this composite model were suggested by more than one of the three explanations. This indicates that cross-national variation in acceptance of homosexuality is best explained by more than one of the hypotheses that we compared.

Nevertheless, the analyses provide substantial support for the suggestion that a cultural evolutionary process of continual weakening of family-promoting norms as described by the kin influence hypothesis plays a role in explaining the growing acceptance of homosexuality in many populations. The model which best fits the data and explains most variance contains all of the variables which the kin influence hypothesis suggests would be predictors of acceptance. The finding that acceptance of divorce is a strong predictor of acceptance of homosexuality is particularly convincing. The acceptance of divorce variable was based on a 10 point scale representing the respondent's opinion of whether divorce is never justifiable (1), always justifiable (10) or something in between (2-9). Each single point rise on this scale increased by 30 per cent the odds of a respondent saying that homosexuality is sometimes justifiable.

The correlation between acceptance of divorce and acceptance of homosexuality is lowest in countries with a high proportion of Muslims. This may be at least partly explained by Islamic teachings on divorce. Countries with a high proportion of Muslims began to experience economic development relatively recently and so the kin influence hypothesis predicts that family promoting norms should be strong in these countries and acceptance of both divorce and homosexuality should be low. However, the Qur'an specifically advises circumstances in which divorce is acceptable. Being brought up in a Muslim society may therefore increase a person's acceptance of divorce relative to the timing of fertility decline in their country and their acceptance of homosexuality. Higher than expected acceptance of divorce relative to the timing of fertility decline may also at least partly explain the strength of the effects of being Muslim and living in a Muslim country that are seen in the composite model.

The analyses also support the suggestion that variation in acceptance of homosexuality can be partly explained by a cultural evolutionary process triggered by the introduction of positive information about homosexuality to some populations. In the composite model, the influence of religion on beliefs about homosexuality was found to have an effect through both country-level and individual-level variables. The size of these effects is smaller than in Model 1 and 2, however. Being of a Christian or Eastern faith was found to have no effect, which probably reflects the wide diversity of belief about homosexuality among those who consider themselves to be Christian and the relatively small number of Hindu, Buddhist and Sikh respondents included in the World Values Survey dataset. The composite model also suggests an effect associated with living in a country which was formerly part of the Soviet bloc. It is highly plausible that several decades of separation by an "iron curtain" would have resulted in culture evolving along different tracks in Eastern and Western Europe. It would not be surprising if these differences are still detectable in the years the World Values Survey data used in this analysis was collected (1997-2008).

Economic development brings many changes to a population but the increase in wealth it brings is easy to measure and it profoundly changes the lives of members of the population. The GDP/capita of a population correlates with many cultural variables. The materialist/post-materialist values change thesis suggests that increasing wealth plays an important causative role in the cultural changes that occur after economic development (Inglehart, 1971) including changes in acceptance of homosexuality (Adamczyk & Pitt, 2009; Andersen & Fetner, 2008b; Inglehart & Norris, 2003). We found, however, that a better fitting

model which explains more of the variance can be achieved without a variable that reflects the wealth of the respondent's country. As mentioned above, the years since fertility began to decline in a country is strongly correlated with its GDP/capita.

It may therefore be the case that differences in wealth play a smaller role in causing cultural differences than many social theorists assume. Tests of the Maslowian mechanism proposed to explain why improving financial security causes people to adopt post-materialist values have not been supportive (Trump, 1991) and Old Order Anabaptist communities provide many examples where the link does not exist (Kraybill & Bowman, 2001) .

General Discussion

The pattern of variation in acceptance of homosexuality suggests an association with economic development; populations which are less economically developed are less accepting of homosexuality. How economic development might bring about increasing acceptance of homosexuality is not clear, however. A rapid rise in acceptance of homosexuality in Western populations began several generations after these populations began to experience economic development (Andersen & Fetner, 2008a; Pew Research Center, 2013; Scott, 1998). The two studies reported here support the suggestion that changes in beliefs about homosexuality and other cultural changes that affect the family are part of a cultural evolutionary process that is set in motion by the social changes wrought by economic development. The first study supports the assumption that communication between family members is slightly biased; it suggests that Western parents are less inclined to influence their children positively about homosexuality. The second shows that the pattern of variation in acceptance of homosexuality in a cross-national sample is most consistent with a model that takes into account the prior emergence of two other beliefs predicted to be associated with a cultural evolutionary process that progressively weakens norms that promote the family.

The change in the structure of society that occurs with economic development is profound – as great as, or greater than, the change that occurred with the adoption of agricultural techniques beginning 10,000 years ago. In proposing that this change continues to drive cultural change for several generations, we are not suggesting that recent or contemporary environmental change is not a factor. We are, however, suggesting that social scientists should reassess the importance of contemporary environmental change as a cause of cultural change. Cultural evolutionary approaches provide alternative explanations with practical implications and should be considered. If it is poverty, weak institutions and strong religion that make the moral judgments of Russians or Egyptians different from those of Westerners, the cultural gulf between cultures seems vast. But if our cultures are merely at different points on a cultural evolutionary trajectory, the gulf seems bridgeable. We can anticipate that non-Westerners will become more “sexually liberated” in time. They will, however, take time to evolve these new ideas, just as Western populations did.

In societies where the family is a strong social institution, people may be unlikely to be persuaded to adopt Western beliefs about homosexuality but we should be wary of interpreting this rejection as closed-minded “homophobia” akin to racism. In these cultures, even people who experience sexual attraction for members of the same sex may reject the idea that such feelings consign them to a certain sexual category which makes them incapable or unqualified to marry someone of the opposite sex, to raise children, and live what they consider to be a fulfilling life.

Environmental models make predictions of future cultural change that are different from the predictions of evolutionary models. For example, the materialist post-materialist values change thesis implies that a population's tolerance of minority outgroups will cease to increase after the death of the last cohort to experience scarcity and insecurity and that greater intolerance will emerge if the economic hardship of a population increases (Inglehart, 2008). By contrast, the kin influence hypothesis suggests that, popula-

tions with the novel social structure created by economic development will continue to progress through this cultural evolutionary process for some generations. This doesn't bring a general increase in tolerance. If it did, we might see progress to the sort of anomie that Durkheim (1897/1951) describes. What we do see is a gradual weakening of the beliefs and norms that encourage individuals to put the interests of their family above their own. It brings greater tolerance of behaviors such as adultery that threaten the cohesion of the family, but less tolerance of behaviors, such as nepotism, that benefit an individual's family members at the expense of others. The weakening of family-promoting norms results in the weakening of the family as a social institution, but a decrease in nepotism and an increasing openness to forming wider cooperative relationships allows the development of other social institutions that can take over the role of the family. It may be difficult to maintain a society in which both the family and other social institutions are strong.

Many Westerners consider it to be a moral virtue to be tolerant of cultural differences but perhaps because of vulnerability to what psychologists call "the fundamental attribution error" their beliefs about why differences exist can influence the degree to which they feel tolerance is justified (Harman, 1999). It is therefore important that social scientists develop and use methods to compare explanations for cultural differences.

Notes

1. Many social surveys, including the World Values Survey, include a question to detect the degree of trust the respondent feels for other people (Glaeser et al., 2000): "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"

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COMMENTS

on Newson and Richerson

Comments on “Moral Beliefs about Homosexuality: Testing a Cultural Evolutionary Hypothesis”, by Lesley Newson and Peter J. Richerson

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The authors of this paper begin with the observation that economic development, or what might also be called “modernization” or “industrialization”, sets in motion a change in the direction of greater acceptance of homosexuality. The question is then by what mechanism does this change occur? The proposed answers are based on two tests; the first leads to the conclusion that family members may be more likely to speak favorably about homosexuality with their own children. The second test supports that hypothesis along with two others, the first to the effect that increased prosperity, by relieving a focus on meeting basic Maslovian needs, enables greater self-expression, and the second that knowledge about scientific findings and efforts to destigmatize homosexuality have had a noticeable effect in countries with greater access to media such as television.

While, as the authors admit, the distance between the actual data and the proposed interpretations remains great, it seems entirely plausible that one of the effects of industrialization and the associated urbanization and secularization of societies, at least in the “West”, has been to replace the central place of the family as the basic social unit, as had been the case among agrarian peasants, introducing other, competing social groups with which individuals can identify; and that accompanying this change, values that “promote the

family” were weakened. Therefore, since presumably homosexuality is seen as antithetical to “the family”, the weakening of “family values” would pave the way for an enhanced acceptance of alternate life style values including in the realm of sexual practices and preferences.

Here I might point out that from a theoretical point of view, there is an ambiguity in the paper that should in the future be clarified; this is whether the hypothesis is based on the argument that family values that discourage or condemn homosexuality are based on the principles of genetic inclusive reproductive fitness, or whether the argument is, as the title suggest, rooted in cultural evolutionary process. Thus, the authors write that “kin are more likely to increase their shared fitness and less inclined to encourage behavior that reproduces reproductive success”. This view is repeated later: “individuals in all cultures will be more inclined to encourage their kin to behave in ways likely to increase their...biological ‘fitness’”.

But then, the authors write that support of homosexuality will co-vary inversely with how strongly a “person believes that the welfare, stability, and reputation of an individual’s family are more important than an individual’s own needs”. But these criteria have no necessary relation to biological fitness; they refer to the economic, social, and prestige values attached to the family, not to actual reproductive success. Thus this latter argument is a “cultural evolutionary” one, whereas calling on genetic fitness relies on a more strictly biological evolutionary model. The relation between these two different ways of conceiving the matter would benefit from further exploration.

Following up on this, I would like to suggest a crucial step in the historical process the authors discuss, one which supports their argument, that is, an important consequence of the demographic transition. The change from agrarian to urban life meant that children went from being an economic asset, as laborers, to being an economic burden (except in the lower classes in which children could also work in factories until reforms prohibited this) because of the high cost of educating them to compete in the middle and upper class economy. This is often cited as one of the key factors that led to the demographic transition. A consequence of the pressure to limit family size then was the need for the development of safer, cheaper, and more reliable contraceptive methods than had existed in the past. Improved condoms and finally the development of the contraceptive pill as recently as the 1960’s enabled the change in reproductive rates, and the shift in values that accompanied it.

But this technological innovation had far reaching social ramifications: the possibility, or risk, of pregnancy as a result of marital intercourse was reduced if not eliminated, and thus sexuality itself was decoupled from reproduction. Subsequently the invention of new reproductive technologies further increased the gap between sexual practices and reproductive life. I would argue that it was this cultural shift that played a key role in shifting the social role of marriage from being the locus of reproductive success to being the unions based on love which the authors point to. The redefinition of “marriage” implicit in the acceptance of homosexual marriage in the contemporary US illustrates this nicely. Meanwhile the importance of the marital family as the site of reproduction lost meaning in a world in which people were free to pursue other forms of sexuality without worrying about whether inclusive fitness was served. Social prestige, in the modern middle class, more often goes to the two-child family rather than to the ten-child family.

The dethroning of the reproductive family and the freedom to engage in any sort of sexuality would, furthermore, themselves have been the causes, not the consequences, of the scientific destigmatization of homosexuality along with many other aspects of modern sexual life, including greater tolerance for pre- and extramarital sex, divorce, “hooking up”, easily accessible pornography, and more. And all of this, of course, also correlates with relative social prosperity, which goes with an urbanized middle class for whom the values inherent in the demographic transition make economic sense.

Finally, speaking as a cultural anthropologist, I would urge that the survey methods used in this study be augmented with ethnographic and cultural historical methods which would provide finer-grained detail and insight into the processes the authors identify.

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Evolutionary Mismatch and the Large-Scale Shaping of Cultural Norms

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Relatively recent changes in attitudes toward homosexual behavior (on a large, cross-cultural scale) may be used as an opportunity to evaluate the operations of cultural change. One theory for cultural change that Newson and Richerson (this issue) explore strongly connects with issues of biological evolution. The main prediction results from *the Kin Influence Hypothesis* which proposes that economic development is at the forefront of cultural change in a general sense – and such development has affected attitudes toward homosexuality more specifically. According to the authors, as economic development increases, the social structure of populations changes such that new social groups can form and large-scale social norms can alter radically.

Within this broader framework, The Kin Influence Hypothesis may serve to explain the rapid cultural changes regarding views of homosexuality. According to this hypothesis, a sexual orientation that yields relatively few offspring could cause concern to parents. If homosexual behavior leads to less reproductive success and overall genetic fitness, then parents would caution against it for their offspring. Gallup (1995) has found evidence for this thesis – parents exhibit homophobia far more than do non-parents. Additionally, while the authors of the current paper did not find direct support of the Kin Influence Hypothesis in their studies, consistent with Gallup's research, Newson and Richerson (this issue) did find evidence that parents circumvent communication about homosexual behavior with their offspring (even if they are generally supportive of homosexual behavior).

Thinking more broadly, in a society wherein individuals are exposed *less* to kin, homophobic ideation may be less prominent. Smaller, family-centered communities maintain cultural norms that promote familial interests. In terms of reproductive success, this could function to promote behavior that more directly passes on genes. Norms that encourage high fertility are maintained in populations where people live with kin and are then strongly influenced by kin (who share an interest in the reproduction of their kin).

The progression of economic development, in most communities, reduces social influence from kin. With economic development in a population comes identification with more and larger social groups outside of the family. As new social groups can form and the influence of family is reduced, individuals may spend less time with kin while spending more time with more eclectic social groups. This pattern would then promote other norms that are not focused so much on high fertility within the family; cultural information is transmitted during non-kin interactions that would be less biased in favor of family promotion.

Mathews and Sear (2013) found evidence for the phenomenon that is proposed by the Kin Influence Hypothesis. Their research showed that women who endured the most contact with kin had their first child at

a younger age and were more likely to have a second child than women with less contact with kin. This suggests that, indeed, being around the family promotes behaviors, norms, and ideas that support fertility and heteronormative behavior. Kin-based societies will maintain norms that discourage homosexual behavior. Newson and Richerson (this issue) provide a validated model suggesting that, on a cultural scale, the rapid rise of acceptance and tolerance of homosexual behavior is localized mostly to Western societies (which tend to be more economically developed and less kin-focused).

Evolutionary Mismatch and Cultural Evolution

We can explain these phenomena in terms of evolutionary mismatch (see Wilson, 2007). In short, this idea suggests that when modern conditions mismatch ancestral conditions that typified contexts under which humans evolved, behavior may well change also. Under ancestral human conditions, familial bonds were the basis of all social structures. These days, in economically developed regions, social structures are based on a larger variety of pillars than just familial bonds. Such mismatched conditions may lead, as Newson and Richerson (this issue) point out, to cultural norms that bear less on reproductive success than norms that were likely found under ancestral conditions. Changes in norms regarding non-heteronormative behavior in Westernized contexts seem to be exactly the kinds of norms that result from changes in social structures that do match our ancestral human environments.

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Kin-Influence and Homosexuality: Further Theoretical Considerations

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Kin Influence and Homosexuality: Further Theoretical Considerations

Newson and Richerson have previously proposed that modernity includes the degradation of the family as the central social unit in humans (Newson & Richerson, 2009). They argue that economic and population growth reduce incentives to adhere to family institutions such as marriage, parenthood, familial care, and nepotism. In this way, modernity may reduce kin investment and interference, hereafter referred to as “kin influence.” In the target article, Newson and Richerson elaborate on one additional consequence of this proposed trend: the broad social tolerance for homosexual identities. They argue that modern, inertial reduction in kin influence decreases the prioritization of reproduction. This means that exclusive homosexuality conflicts less with family institutions and social values as those values become less contingent on reproduction and family-building. But here arises the topic of our response. What is the proposed se-

quence of cultural evolutionary events regarding the presence of homosexual orientations, reductions in kin influence, and tolerance for homosexuality?

Terminology

First, to think clearly about this topic, it is necessary to differentiate homosexual attractions, homosexual orientations, and homosexual identities. Sexual attractions are contextual arousal responses to the stimuli of one sex or another and are not necessarily indicative of orientations, which are a description of typical responses to a range of sexual stimuli which can favor one sex, favor neither sex (in the case of bisexuality), or be absent (in the case of asexuality). Sexual identities in contrast, represent a categorical, cultural interpretation of sexual orientations, dividing individuals into self-selected sexual labels that are not necessarily indicative of sexual orientation. Sexual identities are neither timeless nor universal cultural entities; non-Western and pre-modern cultures can have very different cultural institutions surrounding sexuality (e.g., the fa'afafine of Samoa, the Kathoey of Thailand, the Hijra of India, and the Berdache of Native America).

In developing their line of research, Newson's and Richerson's arguments may benefit from clear reference to sexual attractions, orientations, and identities. For example, it seems more relevant to the kin influence hypothesis that homosexual orientations lack attraction to the opposite sex than that they experience attraction to the same sex. Likewise, it seems more relevant that homosexual identities de-emphasize opposite-sex attractions than that they emphasize same-sex attractions. It is the failure of offspring to seek or attract reproductive opportunities that should be discouraged by kin influence, not necessarily their seeking or attracting of same-sex partners. Homosexually-identified individuals are capable of reproduction (e.g., about half of Western homosexual men report significant heterosexual relationships in their lifetime; 56%, Rosario, et al., 1996; 54%, Savin-Williams, 1990; 64%, Whisman, 1996), but have lower fecundity in modern cultures. Exclusive homosexuality, on the other hand, is a term we reserve for individuals who experience no attraction towards or are repulsed by the opposite sex. In our response, we refer only to exclusive homosexuals, as these are the individuals who constitute the greatest reproductive threat to their kin.

Interpretations

We have identified three interpretations of Newson's and Richerson's theoretical argument, and briefly assess the merits of each. In each interpretation, we sketch a timeline for the interaction between kin influence, exclusive sexual orientations, and tolerance for homosexuality. For the sake of argument, we grant that kin-influence is decreasing as a result of modern social and economic forces. The root of our confusion regards whether, prior to modernity, kin influence was an effective "treatment" against non-reproductive, exclusively homosexual offspring. If not, i.e., if exclusive homosexuals have existed over human evolutionary history unaffected by kin influence, then why did this form of kin influence evolve? If it had been effective, we perceive certain theoretical concerns. We focus on these theoretical concerns, leaving it to others to assess the methodological merits of this particular pair of studies.

Kin-Influence First

Our first interpretation is that reductions in kin influence have produced exclusive homosexuality, *de novo*, in recorded history. It is possible that, for some individuals, the development of reproductive attractions requires some level of kin influence that, when lacking, produces exclusively homosexual adolescents and adults. This is not an unreasonable proposition, but it runs counter to observations of fixed and heritable sexual orientations. Non-human sexuality is marked by reproductive bisexuality in almost every species in which same-sex behavior is observed (Bagemihl, 1999). It could be that the uniquely modern degradation of the human family environment described by the kin influence hypothesis has precipitated

the appearance of exclusive homosexuals by removing inputs that guide offspring towards reproduction. Following this “invention” of exclusive homosexuality, attitudes towards homosexuals may have been negative initially but improved as kin influence continued to diminish. Challenges to this interpretation include the observation that apparently exclusive homosexuality predates modern social conditions (Parkinson, 1995), that there are biological developmental predictors of homosexuality observed across cultures (Whitam, 1983), and that sexual “conversion” (changing one’s sexual orientation) is unsubstantiated (APA, 2009).

Orientation First

A more straightforward interpretation is that improved attitudes towards a pre-existing expression of exclusive homosexuality have arisen by virtue of reduced kin influence, leaving homosexuality relatively unchanged. This implies that, for most of human history, exclusive homosexuals suffered at the hands of kin who would try, in vain, to drive them towards reproductive behavior. Challenges to this interpretation include differences in the expressions of homosexuality and the degree of exclusivity across cultures (Vasey, Parker, & VanderLaan, 2014), as well as the impacts that peer environments and sexual experiences have on the development of exclusive homosexuality (e.g., Rivers, 2001). Again, in this scenario, one wonders why ineffectual kin influence on sexuality evolved in the first place, genetically or culturally. For this interpretation to work, Newson and Richerson would need to argue that culturally evolved, ineffectual anti-gay attitudes are so novel that they have not yet been selected out of human cultures, or that anti-gay attitudes are not related to kin influence or serve a function (or are a byproduct of a function) other than encouraging reproduction in kin.

Simultaneity

Another interpretation of Newson and Richerson is that exclusive homosexual orientations and tolerance for homosexual identities either coevolved, meaning that they are interacting products of reduced kin influence, or independently evolved as non-interacting products of reduced kin influence. One can imagine the gradual de-emphasis of the kin group promoting the development of exclusive homosexuality while simultaneously promoting tolerance for exclusive homosexuals. Whether homosexual tolerance and the exclusivity of homosexual expression interact across history is worth investigating (i.e., whether cultural coevolution has occurred or is occurring). For example, it is possible that improving perceptions of exclusive homosexuals facilitates greater expression of exclusive homosexuality which, in turn, contributes to more positive perceptions of exclusive homosexuals.

Conclusion

Whatever interpretation Newson and Richerson would endorse, it will need to be spelled out in a way that resolves the conflict between the ancestral function of kin influence as a promoter of reproduction and the universal, biological, and relatively fixed nature of exclusive homosexuality. Newson and Richerson may argue that coercive parents are enough to push otherwise exclusive homosexuals into relationships with the opposite sex (e.g., the “homowives” phenomenon in China), but prior to modern sexual pharmaceuticals, techniques, and stimuli, it is not clear how an exclusively homosexual (man, at least) would accomplish reproduction. Whereas the kin influence hypothesis is compelling on many fronts (see Newson & Richerson, 2009), and the data presented in the target article lend some credence to the argument, we await a more furnished theoretical rationale for the evolutionary process proposed by Newson and Richerson.

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The co-evolution of nativist beliefs and tolerant attitudes

Andreas De Block and Olivier Lemeire

The paper by Newson and Richerson once again shows that theories of cultural evolution can throw a genuinely original light on the important societal changes of our time. We are therefore very curious to know how Newson and Richerson conceive of the relation between their hypothesis and other recent work on the cultural evolution of liberal and conservative values (see for example Acerbi, Enquist & Ghirlanda 2009 and Eriksson & Strimling 2015). That said, we will concentrate on another issue, namely how the changes in attitudes towards homosexuality go hand in hand with changes in our beliefs about the etiology and nature of homosexuality. Newson and Richerson already hint at this topic in their paper when they write:

“More discussion of homosexuality encouraged scientists to look for biological factors that may cause some people to have a same sex sexual orientation (LeVay, 1996). Their speculation was widely covered by the media and the suggestion that some people were innately homosexual (and therefore had no choice about whom to love) became, for many Westerners, justification for supporting what became the LGBT movement (Lewis, 2009).”

In this statement Newson and Richerson elaborate on Herek's cultural evolutionary theory according to which societal changes in homonegativity are due to the introduction of the concept of ‘homophobia’ and the recognition by psychiatrists that homosexuality is not a disorder. They suggest that in addition to this information, it was new information about the etiology of homosexuality that has resulted in increased tolerance towards homosexuality in the West. Social-psychological research on anti-homosexual prejudice has revealed that there is indeed such a negative correlation between essentialist beliefs about homosexuality and homonegativity (Haider-Markel & Joslyn 2008). Yet this result is more surprising than it might seem at first sight.

Much of the social-psychological research that aims to get a grip on how homonegativity co-varies with personality traits, ecological variables, education and beliefs, is inspired by research on racism and sexism. Indeed, homonegativity seems to have many correlates in common with sexism and racism (Altemeyer 2002). One curious exception is the positive correlation between sexism/racism and psychological essentialism. Whereas racism and sexism seem to be strongly linked with psychological essentialism

about race and biological sex (Haslam, Rotschild & Ernst 2002), homonegative people tend to be less essentialist about homosexuality than people who are (more) supporting of the LGBT cause (Haider-Markel & Joslyn 2008). To explain why essentialist beliefs correlate with decreased homonegativity, scholars have mainly relied on attribution theory, which is also echoed by Newson and Richerson's statement. According to the attribution theory, the belief that homosexuality is innate is taken to imply that one's sexual orientation is beyond a person's control, and is therefore judged less severely. To explain why essentialist beliefs nevertheless correlated with increased racism and sexism, Prentice and Miller (2007) have developed a more sophisticated version of the attribution theory. They argue that essentialism about a social category (race for example), will result in a more negative attitude if the stigma is associated with the correlates of the category (for example low income, violence), because the essentialism intensifies the link between the category and the negative traits. However, if the stigma is associated with the defining property of the category, as seems to be the case with homosexuality, essentialism decreases the stigma because it suggests that one is less responsible for belonging to that category.

Note that the reasoning hypothesized by the attribution theory does not lead to an entirely positive conclusion about homosexuality. After all, the reasoning goes that homosexuality is to be accepted because it is innate and therefore beyond one's control. This suggests that if it had been a choice, one should not have chosen it and it should not be accepted. Yet we do not want to focus here on the normative issues with the reasoning suggested by the attribution theory. Nor do we want to focus on whether the 'essentialist' or 'nativist' view is really supported by the best science currently available, or whether this would imply that homosexual desires/preferences/orientations are not a matter of choice. Instead we will look at the extent to which the attribution theory can really explain how the cultural evolution of nativist ideas about homosexuality – partly spurred by scientific practice – relates to the cultural evolution of homonegativity.

While it is really well established that people who think that homosexuals are 'born that way' also tend to be more tolerant towards homosexuality than people who think that homosexuality is (mainly) determined by environmental factors, the causal mechanism that underlies this relation is still not well understood. It is safe to say that this causal mechanism will be more complex than even a sophisticated version of the attribution theory suggests. After all, informing people that 'homosexuality is innate' does not necessarily increase their moral acceptance of homosexuality. The findings of Boysen and Vogel (2007) suggest that already quite tolerant people become even more tolerant after learning that homosexuality is innate, but they also find that the nativist message makes homonegative individuals more homonegative. According to Boysen and Vogel, attitude polarization is driving this effect: human nature is such that people "view supporting evidence favorably and contradicting evidence unfavorably leading to increased confidence in their original attitude" (Boysen & Vogel, 2007). Their results are in line with other experimental studies showing that tolerant or intolerant attitudes determine the adoption of beliefs that are perceived to match these attitudes, rather than the other way around (Hegarty & Golden, 2008). In this light, it is interesting to compare the evolutionary explanation of Herek with Newson and Richerson's broader account. Herek's explanation is indeed an evolutionary one but almost exclusively homes in on how new information about the nature of homosexuality changed the attitudes, whereas Newson and Richerson seem to treat the role of nativist or other scientific views as less central to the attitudinal change, and thus more in accordance with the results of psychological experiments.

Of course, we are not arguing that the increasing popularity of nativist views cannot stabilize and to some extent even increase tolerance of homosexual orientation. For one, the nativist view seems to make tolerant people even more tolerant. Secondly, experiments in social psychology focus almost exclusively on the short term effects of certain interventions. So biological explanations of homosexuality might still have the long-term effect of leading to a decrease in homonegativity, even though the short-term effects are not what (naïve) adherents of the attribution theory would expect. Thirdly, to the extent that there is an effect of essentialist beliefs about homosexuality on decreased homonegativity, this need not be the result of the type of reasoning hypothesized by the attribution theory. The nativist message can also convey the

impression that every heterosexual is safe from ‘contracting homosexuality’. Because the threat of contagion is an important trigger of disgust and because disgust is one of the most important emotional components of homonegative attitudes (Olatunji 2008), the spread of nativist beliefs may lead to a society in which there is less anti-homosexual prejudice. Note, however, that such belief-steered relaxation of homonegativity does not necessarily imply that there will also be more same-sex sexual behavior. In fact, sociological research in Germany found that less and less boys of 16 and 17 tend to experiment with homosexual behaviors (see <http://www.lsbk.ch/gibt-es-heterosexualitaet/>), possibly because more and more young people do think that homosexuality is something you are born with and that homosexual experiences would therefore immediately and irreversibly place them in the homosexual category.

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The Darwin Gate

James Waddington

Boyd’s and Richerson’s *Not By Genes Alone: How Culture Transformed Human Evolution* introduced into public discourse the whole notion of cultural evolution. It was a great encouragement to those of us who had been thinking along those lines but now had an authoritative codex to brandish to prove that we were not crazed and alone.

The authors brought us to the edge of an indefinitely extending landscape in dimensions we still cannot quite apprehend. We are at the moment left standing there, without the instruments to calibrate or navigate that landscape. The archaic devices we arrived with produce results which are consistent with the view that fades behind us, but those results do not map the way we want to go, rather they bring us back to where we already are, every time.

What this means in practical terms has been made clear by Massimo Pigliucci in *The Trouble with Cultural Evolution*, <http://www.philosophersmag.com/index.php/footnotes-to-plato/83-the-trouble-with-cultural-evolution>. Pigliucci suggests that without a precise objectification of what it is that is being selected, and what is the immediate environment that is doing the selecting, we are looking at, in Karl Popper’s words, a mere ‘metaphysical research programme’.

Herein lies the problem not just with *Moral beliefs about homosexuality: Testing a cultural evolutionary hypothesis*, but with any attempts so far to make significant progress. A trait, tendency, characteristic, belief, attitude – these are huge and cloudy constructs. None has a shape or a precise boundary whereby one can determine, for instance, what is an attitude, and what is the environment by which that attitude is, or is not, selected.

We need a model which provides a taxonomy for various scales of culture (a pin can be delimited more precisely than a religion, and so can the pin's evolutionary environment), and which describes the actual locus of selection, specifying the boundary between the thing that evolves and the selecting environment. Without such a model we will be confined to our 'metaphysical research programme'. This is valuable in itself, and fascinating, and worthwhile, but in the end only describes what is the case in historical and narrative terms. Absent is any reference to the 'issue of differential fitness' which Pigliucci sees, rightly, as crucial to any Darwinian hypothesis. Differential fitness must be measured in terms of a both spatially and temporally immediate environment, not merely by airy reference to things which did survive, like *agriculture* or *cooperation*.

I have been working on such a model for a couple of years now, in a full-length introduction to cultural evolution for the general reader which I hope will put the metaphysical research programme into a testable and potentially scientific framework.

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“The slippery slope”

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I am appreciative to the editors for the opportunity to offer this comment on Newson and Richerson's article. While the article provokes a variety of ideas, both procedural and theoretical, I would like to focus on concerns that arise from what I believe is the slippery slope of presenting an academic/scientific discussion of “family values.”

The first issue arises in the initial study and the use of participant attrition as a measure of a parent's willingness to “communicate information that might encourage homosexual behavior”. To begin, the statistical use of attrition as a dependent measure is questionable at best; several other factors such as time constraints, lack of interest, or difficulty understanding the task are all possible reasons for participant attrition. In fact, attrition is a noted threat to internal validity (Myers, Gamst, & Guarino, 2006) in research and is rarely, if ever, used as a dependent measure. Further, research shows a multitude of factors influence the reaction of parents to their children asking difficult questions (e.g., O'Malley, Blankemeyer, Walker & Dellmann-Jenkins, 2007; Regnerus, 2005). With regard to the latter point, such studies often cite age and gender of children as factors contributing to parents' comfort level when discussing difficult topics such as sex, alcohol and drug use, war, illness and death. It seems reasonable to conclude that parents whose children (even hypothetically) ask them about homosexuality, would have difficulty responding to such inquiries, even if their personal beliefs about homosexuality are generally positive. In other words, factors such as age and gender, as suggested in the aforementioned studies, may be more likely to contribute to parents' decision about when and what to communicate with their children about certain topics.

There is, however, a deeper, more disturbing problem with the conclusions drawn from the attrition data. In using participant attrition as an indicator of a participant's reluctance to communicate information that "might encourage homosexual behavior", the authors are making two erroneous assumptions: 1) that the parents in the sample did not finish the survey because they did not want to communicate about or "encourage" homosexual behavior with their hypothetical child; and 2) that they did so because "Westerners are biased in their communication about homosexuality" (Newson and Richerson this issue) when it comes to talking to their "kin." The authors use these assumptions as evidence of the "kin influence hypothesis" and further, as a basis for the argument that a decline in family values or "opinions of behaviors that weaken the family" leads to greater acceptance of homosexuality across individuals and countries. I do not think it is wise to stand on these assumptions; doing so is scientifically questionable, and also not so subtly implies that persons who identify as other than heterosexual do not have family values.

In the second study, in order to test the tenets of the kin influence hypothesis in relation to the other two explanatory models, the authors attempted to find a measure that would test the hypothesis that "individual's opinions of behaviors that weaken the family will predict acceptance of homosexuality". They chose an item which asked about the justifiability of divorce, and it was a participant's response that was used to measure opinions about behaviors that weaken the family. The use of this particular question from the World Value Survey is another indication of the dangerous use of data that seems to be present throughout the article as this item (e.g., opinion about divorce) may not be a contextually valid measure of family values.

It is also worth noting that because the World Values Survey did not include a measure of a person's sexual identity or a person's level of familiarity with (i.e., exposure to) people who identify as homosexual, the authors used the number of televisions per household and three measures of religion (participation, denomination, and importance) as measures of exposure to ideas about homosexuality or homosexual persons. These factors were determined to increase (as in the case of television) or decrease (as in the case of religious measures) an individual's exposure. While I commend the authors for tackling an issue that is rife with variation and co-variation among factors, this is rather like saying that I know how to run a marathon because I watched one on TV. Certainly the authors did not mean to imply that Herek's (2004) evolutionary hypothesis to explain acceptance of homosexuality is not supported by data that uses operational definitions like those noted above. In fact, it has been suggested for many years that contact (not mere exposure, but meaningful, positive interactions) leads to increased acceptance of many experiences that are considered to be outside the norm of a particular culture or social group (Allport, 1954).

The authors raise a very difficult question: what leads to a greater acceptance? They have provided three possible explanations and some data that would appear to provide some support for each one. However, throughout the study, the authors have also made choices that seem to imply their belief that a cultural shift is occurring whereby family values are weakening and acceptance of homosexuality is increasing. This is a worrisome conclusion, a dangerous conclusion, and one that could easily send readers on a ride down the slippery slope when it is suggested that family values and homosexuality are somehow mutually exclusive. That is not a ride I can support nor one that seems warranted given the results of the studies provided.

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Newsom's and Richerson's Reply to Comments

These six commentaries illustrate well the cultural diversity that exists in academia. As each set of commentators began reading our paper they brought with them beliefs, customs, habits, skills, moral values and other cultural traits commonly found in members of their academic discipline. We see cultural evolution as a general tool for understanding human behaviour and we like to think that it can be appreciated and usefully applied by members of many different disciplines. As students of culture, however, we need to be aware that arguments and explanations which may convince members of some academic cultures will seem ludicrous and even immoral to another cultural group.

Robert Paul, who has written a very interesting and useful book on gene-culture coevolution (Paul, 2015), points out that an ambiguity exists in our argument. We propose that family members influence one another to behave in ways that increase the chances that they will produce offspring but we don't specify if this behaviour is genetically inherited because it increases fitness or culturally inherited because it results in individuals benefiting economically. We aren't specific because we don't feel we can be. There is a cultural and genetic component to all complex human behaviours. The likelihood of a father asking his married daughter when she plans to provide him with a grandchild probably varies from culture to culture. On the other hand, the capacity to experience pleasure in caring for a young animal may be part of the genetic inheritance of many mammals. Anticipation of this pleasure may partly motivate a man's desire for grandchildren. A behaviour that succeeded in increasing the reproductive success of one's children would, by definition, be favoured by natural selection and any genes or cultural traits associated with such behaviour would be likely to be maintained in the population. In a society with kin dense social networks, cultural reproduction more closely correlated with genetic reproduction than is the case in modern societies with kin poor social networks. We should also not discount the ecological factor. In traditional societies, the family is often the main unit of production and a strong family provides the resources to reproduce both culture and genes.

Paul also suggests that survey methods we used should be augmented with the finer grained insights to be obtained from ethnographic and cultural historical methods. We agree with him and this is one reason we believe his book makes an important contribution to the field. We hope, however, that he recognizes the limitations of ethnographic and cultural historical methods. These methods provide an insight into the stories that are told to explain a behavioural change and these stories are good to know. But we cannot assume that these stories are a complete explanation and if the stories contradict objectively gathered information about the change it is essential to look further.

The stories that we in the West tell to explain behavioural change usually depict the change as a response to something that is changing in the environment. Paul provides an example of this in his commentary. He mentions that a change in the cost of raising children is often cited as one of the key factors that led to the demographic transition and that this is seen to be due to the environmental change brought by the transition from agrarian to urban life. Another key factor often cited is that people's decision to have fewer children was a response the decline in infant mortality.

One problem with these explanations is that they rely on the assumption that people have a preference for small families. They propose that couples only produce many children when the children are an economic asset or when the risk of children dying is high and so it is necessary to conceive many children to achieve the desired small family. What could be the nature of such a preference? It is easy to see why a young woman would fear becoming pregnant and giving birth but this isn't the same as wanting few children. All of our female antecedents did become pregnant and gave birth to babies who succeeded in being parents themselves. Most of our ancestors produced more surviving children than the average for their generation. We don't believe family size preference to be a genetically evolved characteristic. But if it were, wouldn't natural selection have favoured a preference for large families rather than small ones?

Another problem with these explanations is that they are not consistent with data which demographers have collected and analysed on populations before, during and after the fertility of the population began to decline. A great deal of data has been considered, including socio-economic conditions, the mortality of infants, children and mothers, religion and availability of contraception. Although many associations exist between environmental change and fertility decline, there is no evidence of a consistent set of environmental changes which can be said to cause people to change their attitude to family size (e.g., Bongaarts & Watkins, 1996; Coale & Watkins, 1986; Newson et al., 2005). If the shift to from agrarian to urban life is what caused people to choose to have fewer children, why did fertility decline occur in the largely agrarian population of France two or more generations earlier than in the rapidly industrializing population of England?

It is because of the inconsistencies in the environmental explanations for family limitations and other components of the cultural shift often called "modernization" (now often seen as part of "economic development") that we are urging academics to consider evolutionary explanations (Newson & Richerson, 2009). The cultural changes of modernization are preceded by a change in the structure of society and a change in social identity. People begin to identify with wider cultural groupings such as nation, ethnic group, occupation, religious denomination and political faction (Anderson, 1991; Watkins, 1990). The early onset of fertility decline in France might be a consequence of the social revolution that had occurred in France in the late 18th century. It resulted in the populace identifying themselves as members of a united French nation. The observation that parts of France which were late in abandoning their regional language to become French speaking were also late adopters of family limitation supports this connection. The structural changes that bring about the change in social identity are not contemporaneous with fertility decline and are therefore ignored by those who believe behaviour only changes in response to immediate environmental changes. Environmental explanations, even when not supported by the data continue to be the main stories told about the fertility decline.

The invention of new reproductive technologies, including contraception occurred after most Europeans had adopted the idea that it is prudent to limit family size. Rubber condoms became widely available in some European populations the 1930s. In many of these populations fertility was already well below replacement level. We nevertheless agree with Paul that the introduction of these technologies was part of the cultural evolutionary process of modernization. It influenced how the process played out, including the way that people's views of marriage changed. Judging by the changing content of popular novels, however, people's views of marriage were already changing (McLaren, 1990; Stone, 1979).

Many changes in behaviour are a response to concurrent changes in the environment and this may partly explain we tend to look first for environmental causes for behaviour change, but when the data don't fit these explanations it is worthwhile to consider evolutionary causes for change.

Andreas De Block and Olivier Lemeire refer to papers which also describe the findings of a cultural evolutionary approach to variation in the adoption of “liberal values” or openness to new ideas such as the acceptance of same-sex marriage. Acerbi, Enquist and Ghirlanda (2009) consider how cultural evolution of a population is affected by the evolution of the social learning strategies of its members. We feel that the process they describe, of changes in the degree to which a population is open to new ideas, must be an important driver of modernization. The pattern of social interactions in a population changes as its members become connected to the wider world through employment, the joining of organization and exposure to media. They encounter a wider range of cultural variants and to operate effectively in this new informational world they must develop new strategies for making decisions about what behaviours to adopt. A recent book which chronicles change in American beliefs about homesickness over the last few centuries provides examples of this change (Matt, 2011). Erikson and Strimling (2015) consider cultural variation during a relatively short period of time in a contemporary Western population. Our paper differs from both of these in suggesting an explanation for the origins of the suite of beliefs influencing behaviour to family which are often referred to as “traditional”.

De Block and Lemeire go on to discuss the ambiguous relationship between beliefs about homosexuality and acceptance of homosexuality. This provides further illustration of how cultural stories about variation in behaviour often don’t reflect what is observed. Many Westerners currently believe that there are a finite number of “sexual orientations” and that one’s sexual orientation is something one is born with (Knauff, 2003). A great deal of evidence exists which contradicts this story but it is seldom publically discussed. Such stories can powerfully influence behaviour not necessarily in expected or consistent ways. Ethnographic evidence suggests that homosexual behaviour is often not considered inconsistent with heterosexual behaviour and family life and in a number of cultures every male is expected to participate in same-sex sexual experiences (Kirkpatrick, 2000; Knauff, 2003).

We very much feel **James Waddington**’s frustration at the complexity of culture. It is impossible to precisely or accurately describe variation when variation itself is variable. Defining cultural differences between groups is difficult when the cultural groups are often poorly defined. As he says, we lack instruments that would allow any one of us to describe the changing cultural landscape in a way that would convince the rest of us that it is the one and only true story. But he is of course aware that, despite this, Westerners (like members of all cultures) have stories that provide explanations for why their members behave as they do and why behaviour has changed or is changing. A culture may include several competing stories. Many academic disciplines are dedicated to the task of influencing, commenting on and even creating these stories. These stories aren’t just pleasant diversions. Members of a culture make decisions the basis of the stories they believe. In modern cultures, policy-makers make policy decisions on the stories they believe. It is arguable, therefore, that better tools for creating and comparing stories would be beneficial.

Darwin’s theories provided tools for examining stories about why living organisms are the way they are and why they have changed over time. The possession of these tools has transformed the biological sciences. Waddington argues that these tools cannot be useful in explaining culture, citing a [blog post](#) of Massimo Pigliucci as support. He and Pigliucci contend that “without a precise objectification of what it is that is being selected, and what is the immediate environment that is doing the selecting, we are looking at a mere ‘metaphysical research programme’”. They imply that such precision is possible when Darwinian tools are used to examine biological stories but not to examine stories told to explain variation in cultural characteristics. We don’t understand what they mean by this.

If by “precise objectification of what is being selected” they mean that biologists can refer to the selection of genes, then their understanding of what biologists know about the relationship between genes and characteristics is inaccurate. A genetically transmitted characteristic that enhances the reproductive success of an organism is likely to be linked to a number of genetic variants, and these genetic variants are likely to be linked to a number of phenotypic characteristics. The success of organisms with a characteristic will mean the linked genetic variants become more common in the next generation but the character that was selected is seldom inherited in any simple way. Some of the selected variants combined with other variants might reduce reproductive success. It is true that sometimes phenotypic variation can be accounted for by variation in single gene, such as in the case of the black versus pale body colour in the peppered moth that inhabits woodland near the city of Manchester in northern England. The increased frequency of the black variant when tree trunks were blackened during Manchester’s industrial phase is a simple example of natural selection. This example has been taught to generation after generation of students but such simplicity it should not be regarded as typical.

In most cases in biology, selection falls on polygenic traits. Height is a simple example. Using modern molecular tools, geneticists have tried to discover the genetic bases of such characters. So far, only a modest fraction of the heritable variation in such characters can be found. Only a few phenotypic characters are determined by one or a few genes and in these favourable cases we often have a reasonably satisfactory mechanistic account of evolution. On the other hand, the advent of cheap gene sequencing and allied techniques have taken us to school on how naïve the genetics of just 15 years ago was and how many hard puzzles are still left to solve.

Pigliucci cites the example of dairying and adult lactase persistence as a sound case of gene-culture co-evolution. This was a relatively easy case to unravel because both the genetic and cultural sides are comparatively simple. The genes involved are dysfunctional alleles of a regulatory protein, the normal function of which is to shut down the production of lactase about the time of weaning. Lactase in turn functions to split the twelve carbon milk sugar lactose into two six carbon sugars that can be absorbed by the gut. Since in most human populations and in mammals generally, milk sugar is absent from the diet after weaning, the production of lactase is shut down after weaning. The cultural side of the equation is equally simple. In populations that depend heavily on dairying, lactose is a significant source of calories throughout life and strong selection fell on lactase persistence alleles (Itan et al., 2009). That said, as Itan et al. make clear, we still do not understand why selection was as strong as it was.

It is true that cultural traits are often defined in potentially arbitrary ways, like quantitative genetic characters, and that we understand rather less of the neurobiological details of memory and decision-making that we understand of the molecular biology of genes. On the other hand, cultural transmission is based on phenotypic behaviours on the part of learners and teachers that are comparatively easy to observe. Darwin (1877) had a much better grasp of cultural inheritance than he did of organic inheritance based on his careful observations of his firstborn child. In recent years students of human development have come to understand the human social learning system in some detail on the basis of clever experiments (e.g. Carey, 2009; Harris, 2012; Sterelny, 2012). The art of mapping our political culture is sufficiently advanced that experts in it can exquisitely gerrymander legislative districts to meet their employers’ partisan objectives. We could go on at length. Pigliucci’s and Waddington’s worries that cultural evolution is merely a metaphysical research program is entirely misguided. Neither organic evolution nor cultural evolution are done and dusted research programs but both are active projects with advanced theoretical models, respectable empirical research projects, and many puzzles left to solve.

If they criticise some cultural evolutionists for not defining the variant being selected or the environment that is doing the selecting, we do not understand how this criticism can be levelled at us. We look at variation in the acceptance of homosexuality. For the purposes of our analysis of the World Values Survey we defined non-acceptance very precisely as responding to the survey question about homosexuality by choosing “never justified”. In many populations non-acceptance of homosexuality is declining and this decline has been observed using a number of methods. Explanations for this decline have been proposed and discussed. Data has been analysed and results have been quoted in support of the explanations.

Our cultural evolutionary explanation proposes that non-acceptance of homosexuality is one of a suite of cultural variants that promote the family. For most of human history, the family has been the main social institution (Davis, 1937/1997). The precise constitution of “the family” is highly variable but all varieties have in common the idea of people united by ties of genetic relatedness, marriage and sometimes friendship. We argue that in social environments where the family is the main social institution there is strong positive choice based and natural selection on cultural variants that promote the family. People of all ages have an interest in keeping the family strong. It is the main source of care for the young, sick and elderly. It organizes labour and provides education. People interact frequently with fellow family members and identify strongly with their family as a social group. A considerable body of theory and evidence in social psychology suggests that when people identify with a group they are influenced by other group members. They develop a mutual perception of the purposes of the group and “internalize” those purposes (i.e. see them as their own purposes) (Turner, 1991). Producing the next generation of family members is likely to be seen as an important purpose because this is the only way the family will continue. Thus a considerable portion of family members’ efforts are organized to the purpose of raising children. The impact of natural selection for strong families can be observed in the current rapid growth of North American Old Order Anabaptists, who preserve a 18th Century rural family system more or less intact (Kraybill & Bowman, 2001).

During the last three centuries, social environments of most of us have changed dramatically. Other social institutions have begun to provide services once exclusively provided by the family and people have begun to identify with other social groups. Some family promoting cultural variants are less favoured by decision-making selection in this new environment and weaker versions of the variants become increasingly common or the family promoting norms are eventually abandoned. It does take time, however, because old norms continue to be passed down until they are replaced or abandoned. In some cases, the abandonment of a norm can only occur after others have been abandoned. For example, strong belief in an idea like “a large brood of healthy children is a blessing” inhibits acceptance of an idea like “a woman should be free to choose her own path in life”. The belief that sex should only be between married couples, which served the purpose of reducing unsupported pregnancies and the spread of sexually transmitted disease, was unlikely to be abandoned until safe contraceptive and antibiotic drugs become available. Since a minority of people desire same-sex sexual relationships, it would likely take some time for them to be widely regarded to be as acceptable as opposite sex relationships.

We reported in our paper an analysis of cross-national data that supports this cultural evolutionary explanation for variation in acceptance of homosexuality but we acknowledged that a complete explanation would likely involve more than one causative factor that the data also supports other explanations. Statistical methods now exist which allow researchers to compare models and determine which model best fits the data. We used this to compare models to see which fits the data best. The best fitting model was one that included all the factors suggested by our cultural evolutionary story (Newson & Richerson, 2009). There was less support for the reasons Westerners often give for the non-acceptance of homosexuality by

some groups, such as that financial insecurity or religious teaching encourages people to distrust behaviours which are less common.

The cultural evolutionary research programme is at a work in progress but we do have the beginnings of a testable and potentially scientific framework. Nevertheless we look forward to seeing the model that Waddington mentions which will be included in his full-length introduction to cultural evolution for the general reader.

We agree with **Austin Jeffery and Todd Shackelford** that the fitness interests of kin are not affected by homosexual behaviour per se, but by the failure to pursue heterosexual behaviour likely to lead to the production of offspring. It is frustrating that the World Values Survey question is simply “How justified is...homosexuality?” We cannot know how the respondent is defining “homosexuality” (or “justified” for that matter). And the fact that most respondents are being asked the question translated in their own language makes for even more potential variation in his or her personal definitions. Do they mean exclusive homosexuality, homosexual behaviour or something else? But in spite of these ambiguities, acceptance or non-acceptance of homosexuality is a more concrete cultural variant than most, particularly among cultural variants in sexual attitudes and behaviour.

We are of the opinion that acceptance of homosexuality is coevolving with many other ideas and beliefs about sexual behaviour and how sexual behaviour should be discussed, what Jeffery and Shackelford term as “simultaneity”. We would like to point out that we don’t see influence from kin, or any other social influence to be merely a “promoter” of reproduction. In social animals, the behaviour of all members of a social group is influenced by other group members. Humans are highly social and this is especially true in our species. Also, because human parents rely on help from others (especially kin) to raise their offspring, they must be particularly sensitive to influence from those most likely to provide help. Kin may also attempt to influence one another in such a way as to discourage the pursuit of behaviours likely to lead to reproduction, especially when resources are low (or perceived to be low) or when competition for mates is high (or perceived to be high).

As Jeffery and Shackelford point out, there is variation in the degree to which humans in modern populations enjoy same-sex and opposite-sex sexual relations (Vrangalova & Savin-Williams, 2012). As with most behavioural variation observed in humans, variation in sexual attraction is likely to be partly due to genetically inherited variation (Sanders et al., 2015) and partly due to experiences post-conception, including experiences during gestation (Tolman & Diamond, 2014). We do suspect that sexual attraction has a large cultural component. As we remarked in response to De Block and Lemeire’s comment, in some societies such as ancient Greece and many societies in New Guinea homosexual behaviour was near universal but almost all men married and had families. Homosexual behaviour is also apparently prevalent in prisons where men and women are deprived of heterosexual opportunities. Autoeroticism is common. It seems plausible that most individuals can learn to engage in homosexual behaviour, heterosexual behaviour, or both if culture demands it. Genetic influences would like be a dimensional factor like most personality traits. Perhaps individuals at the extremes of the dimension would be strongly exclusive in their sexual orientation whereas those toward the middle of the distribution may respond to cultural and environmental influences.

On reflection, we think we understand **Jennifer Lancaster**’s concern that presenting an academic/scientific discussion of “family values” is a “slippery slope”. The first author of the target article spent most of her life outside the United States and was not aware that the phrase “family values” has a complex political and moral meaning in that country which many English speakers outside the United States don’t understand. In this paper, the phrase is used shorthand for “customs and beliefs that promote the

family”. These include customs such as elders arranging marriages to strengthen family alliances, politicians giving government jobs and contracts to family members and family allies and immigrant workers sending most of their salary to family in their country of origin. They include beliefs such as that a woman should be a virgin when she marries, that a married couple should stay together for the sake of their children, and that children should care for their parents when they get old.

In view of this clarification, we hope that Lancaster will no longer find it worrisome and dangerous that we observe a cultural shift occurring in which family promoting customs and beliefs are weakening. We see increasing acceptance of homosexuality as a waypoint on the path of cultural change defined by the macro-evolutionary trend of modernization.

Lancaster also makes some specific criticism of the methods we used. No research methods are perfect.

As **Nicole Wedberg** and **Glenn Geher** point out, the Kin Influence Hypothesis is essentially an evolutionary mismatch argument. For most of our species’ history, individuals operated in a social environment rich with kin. In these environments, a shared interest in maintaining the social structure stabilised norms that promoted the family.

Because cultural change is an evolutionary process, the effect of evolutionary mismatches resulting from the shift to modern environments may be under-appreciated more generally. For example, food has been plentiful in many Western countries for some time and yet it is only recently that the consequences of over-eating have become a serious health problem. This may be because it took time for Western culture to evolve the customs and habits that encourage over-eating to the extent it occurs today. The recipes of prepared food evolved to have a higher sugar and fat content and people’s beliefs about the size of a normal serving gradually changed.

If much modern behaviour is a result of mismatches, we should expect to see adaptive evolutionary forces operating to eliminate them. In large samples researchers can detect selection on genes for traits such as increased years of fertility (greater risk of pregnancy) and resistance to the ill effects of obesity (Byars et al., 2010). We noted in our reply to Waddington that cultural resistance to low fertility is currently under much stronger selection in the case of Anabaptists and some other culturally isolated communities. Choice-based selection has been rather effective at bringing down rates of smoking in many countries and campaigns to tackle obesity are ongoing. Thus the mismatch concept has empirical support. Of course, because of ongoing historical contingencies, evolution is only a weakly predictive science. For example, it is hard to do more than speculate about what the impact of global climate change and measures to mitigate it will have on human evolution.

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Why Traditional Ethical Codes Prescribing Self-Sacrifice Are a Puzzle to Evolutionary Theory: The Example of *Besa*

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Abstract

Traditional codes of ethical behavior have been passed down from one generation to the next in all known cultures, suggesting that such traditional codes of how to behave and how not to behave may have been evolutionarily advantageous. In accordance with this view, many aspects of ethical codes appear to be easily accounted for by evolutionary theory. Others, however, do not. Foremost among the aspects of ethical codes that are puzzling to evolutionary theory are those encouraging forms of sacrifice for others that are not readily explainable by conventional evolutionary explanations of altruism. This paper illustrates this with the example of *besa*, a key concept in the traditional Albanian code of ethics (the *Kanun*) that emphasizes the promise to engage in various forms of altruism. It then presents an alternative evolutionary explanation of altruism based on the concept of traditional parental manipulation that may help explain the concept of *besa* and other aspects of traditional ethical codes.

Introduction

Scholars from various disciplines have been successful in demonstrating how many aspects of folklore from around the world make evolutionary sense in that they reflect evolutionary concepts relevant to aspects of human behavior ranging from mating strategies to foraging techniques. This folklore includes codes of ethical behavior as “all known societies have oral texts that validate a moral order” (Maddox, 2005, p. 1668). In regard to these codes, conventional evolutionary theory generates the general prediction that “people tend to pass the sorts of moral judgments that help move their genes into the next generation” (Wright, 1994, p. 146). While many aspects of traditional codes of ethics may conform to this prediction, some of the traditional behaviors parents influence their offspring to engage in do not. That is, some aspects of traditional codes of ethics promote behaviors that would be “unfit” in the sense of reducing the fitness and inclusive fitness of the individuals who engage in them. Among these puzzling aspects of traditional codes of ethics are exhortations to engage in forms of altruism that do not appear to coincide with conventional evolutionary explanations of altruism. An example of such behavior would be sacrificing one’s life to save the life of someone who is not closely related under circumstances where the act is not likely to evoke any form of future benefits to the altruist’s inclusive fitness. Many generations of Albanians have been swearing a traditional sacred oath, known as *besa*, to engage in a traditional ethical code of behavior (referred to in this paper as “the *Kanun*”, but actually consisting of a number of slightly different *kanuns* in different regions of Albania) that includes exactly this form of altruism.

A Short History of Evolutionary Explanations of Altruism

Darwin’s (1871) explanations of human altruism involved both individual selection and group selection (p. 161), but he was also aware of potential problems with group selection (p. 163). However, a century of

failed attempts to explain many forms of altruism with individual level selection led to widespread acceptance of group selection by the early 1960s (Wynne-Edwards, 1962). This was, however, quickly followed by a rejection of group selection and a return to attempts to explain altruism with individual level selection enhanced by the concept of kin-selection (i.e., inclusive fitness) (Hamilton, 1964) and an increased emphasis on reciprocal altruism (Trivers, 1971; Williams, 1966). In the 1980s explanations of altruism started to also emphasize indirect reciprocal altruism where the altruistic act enhances the altruist's reputation and thereby evokes reciprocity from someone other than the original receiver (Alexander, 1987).

Kin selection and reciprocal altruism provided explanations for many altruistic behaviors, but their inability to explain certain occurrences of altruism led to continuing attempts to find better explanations. Much of this effort has gone toward trying to determine if extremely complex patterns of indirect reciprocal altruism might account for additional forms of altruism (Atkisson & Smaldino, 2015), including the possibility that some forms of altruism might be explained as a form of costly signaling (Palmer & Begley, 2015). There have also been sophisticated attempts to calculate if limited dispersal can influence the degree of relatedness among members of a population in a way that might account for certain forms of altruism, as well as attempts at resurrecting various versions of multi-level selection (West, El Mouden & Gardner, 2011; Wilson, 2015). Many evolutionists also used the "Price equation" (Hamilton, 1975; Price, 1972) to conceptualize kin selection, reciprocal altruism, and group selection as "simply three systems of gene-tracking and fitness accounting from three different perspectives," and therefore, "any solution [explanation of altruism] can be reformulated from each perspective to yield the identical answer [explanation]" (Henrich, 2004, p. 10). When encountering acts of altruism that represent a puzzle because they cannot be solved by this fitness accounting (i.e., shown to increase the inclusive fitness of the altruist), another option is to attempt to explain them by cultural group selection (Soltis, Boyd & Richerson, 1995). However, both the reality of cultural group selection and its relationship to inclusive fitness remains open to debate (West, El Mouden & Gardner, 2011, p. 248). Another option is to question the actual existence of the act of altruism *claimed* to have taken place. For example, Schloss (2004) wrote, "If individual reproductive benefit were the only source of human moral beliefs and cooperative behavior, we would expect rhetorical affirmations of altruism to be largely uncoupled from genuinely sacrificial behavior" (p. 13). The remaining option is to explain away puzzling acts of altruism as merely rare aberrations (Teehan, 2010, p. 41). Despite the ability of these options to explain many aspects of human behavior, they do not appear to be able to account for some parts of traditional codes of ethics to which the oath of *Besa* is taken.

***Besa*: A Traditional Oath**

The word *besa* is usually translated as "an oath, promise, a binding word of honor" (Mustafa, Young, Galaty & Lee, 2013, p. 104), and usually refers to taking an oath to follow the *Kanun*, a traditional code of ethics primarily found today in Albania and places to which Albanians have migrated (Boman & Krasniqi, 2012; Camaj, 1989; de Waal, 2005; Trnavci, 2010). Our argument concerning *besa* requires establishing that taking this oath to follow the *Kanun* is both traditional and involves forms of sacrifice puzzling to conventional evolutionary theory.

Establishing that *besa* is traditional requires challenging a trend in anthropology and folklore to deny the existence of long-lived traditions (i.e., behaviors transmitted from parents to offspring for many generations). We acknowledge that it is often impossible to know exactly when different parts of a traditional code of ethics originated, as well as how and when different parts may have been modified during transmission or even invented (Hobsbawm & Ranger, 1983) and then falsely asserted to have been transmitted from earlier generations of ancestors. However, it is important to recognize the evidence of actual traditional transmission of behaviors (Mathew & Perreault, 2015; Fragaszy, 2003), and to realize that falsely claiming something to be a tradition would not prove to be "a particularly useful ideological resource"

(Schwandner-Sievers, 2001, p. 97) if behaviors actually transmitted for many generations were not seen as being important and influential. What is needed is a theory that can account for not only the breaking, manipulating, rejecting, and inventing of traditional codes of behavior, but also for the existence of traditional codes of behavior (Palmer, 2010; Palmer, 2013a; Palmer, Begley, Coe & Steadman, 2013).

There is no question that offspring, at the bequest of their parents, have taken the oath of *besa* to follow “a detailed guide to how to behave in many, indeed most, possible forms of human interaction” (Schwandner-Sievers, 2002, p. 7), and required their own offspring to take the same oath of *besa* when the time comes for them to do so. The question is over how many generations this behavior has been transmitted from one generation to the next, and how much the behaviors regarding religion, family, marriage, house and property, hospitality, work, speech, honor, punishment, and law (Fox, 1989; Mustafa, Young, Galaty & Lee, 2013) stipulated in the *Kanun*, have changed over those generations.

Precise answers to these questions are impossible because “it is impossible to be too definite” about the origins of Albanians (Iseni, Iseni & Beadini, 2013, p.50; see also Kola, 2013; Tarifa, 2008), and various claims about these origins have been used in debates over Albanian identity, borders, and other political issues (Galaty, Lefe, Lee & Taflica, 2013, p.7; Schwandner-Sievers, 2001; 2002; 2003; 2004; 2008; Vickers, 1995). There has also been debate over the number of generations individuals have taken the oath of *besa* to follow the *Kanun*. At one extreme, Vickers (1995) claimed that this tradition has been “inherited from the Illyrians...[and] transmitted orally down through the generations” (pp. 5-6). Fox even speculated that it “may indeed date back to remote antiquity, to the era before the vast migrations of the Indo-European people” (Fox, 1989, p. XVI), and suggested that it may share a common origin with aspects of the traditional codes of ethics found in surrounding areas (Fox, 1989, p. XIX; see also Pollo & Puto, 1981). At the other extreme, much of the work since the end of Communism has largely ignored or denied the existence of traditional forms of behavior in Albania because this work “has been informed directly by recent social theory, postcolonial theory in particular, which tends to de-emphasize further the study of tribalism, focusing instead on the individual agency of northern Albanian themselves” (Galaty, Lefe, Lee & Taflica, 2013, p. 7; see also Schwandner-Sievers, 2001, p. 98).

In evaluating these two positions it is important to note that even scholars, such as Galaty, Lefe, Lee & Taflica (2013), who accurately criticized the notion of Albanians being so traditional that they represent a “people stranded in time” (p. 6), described many aspects of Albanian culture as traditional and emphasize that in Albania “there is continuity in change” (p. 2; see also Schwandner-Sievers, 2001). Further, the aspects of culture continuing many generations include “oral traditions passed from father to son” (Lee, Lubin, & Ndreca, 2013, p. 45), and these include “localized forms of traditional law” (Mustafa, Young, Galaty & Lee, p. 104). Further, it is agreed that the tradition of taking the oath of *besa* to follow traditional laws is much older than the period of 1389-1429 when Lek Dukagjin (1410-1481), chief of the the Dukagjin family, and the leaders of other prominent families, are said to have “laid down the northern tribal laws and customs known as the *Kanun*” (Lee, Lubin and Ndreca 2013, p. 46; see also Bardhoshi, 2012, p. 67; Mustafa, Young, Galaty & Lee, 2013, p. 100; Jacques, 1995; Elsie, 2001; Vickers & Pettifer, 1997; Hasluck, 1954).

In light of this evidence, it is clear that details of the Albanian *Kanun* have at times been modified (i.e., “adapted to circumstances” Schwandner-Sievers, 2001, p. 97) as it has been transmitted from one generation to the next, and this has led to a variety of similar *kanuns*. It is also clear that “Albanian traditions have been invented and revitalized” in recent political debates (Schwandner-Sievers, 2008, p. 54). However, it is also clear that taking the oath of *besa* to follow the *Kanun* qualifies as a tradition because for many generations it “was transmitted orally from one generation to the next” (Vickers & Pettifer, 1997, p. 132). Further, despite dramatic changes in other aspects of Albanian culture:

The *Kanun* is by no means a relic of the past. Many of its precepts continue to play an important role in the lives of Albanians throughout the world, even in Albania itself where the communist

regime has attempted, since its violent inception, to suppress or extricate any laws and customs other than its own. (Fox, 1989, p. XIX; see also Voell, 2012, p. 150; Bardhoshi 2012, p.69).

Mustafa, Young, Galaty & Lee (2013) also referred to the “ongoing reliance on the *kanun*” (p. 105; see also Boman & Krasniqi, 2012), and Voell (2012) reported that children currently living in Albania “still knew about the importance of their own cultural traditions” (p. 147). Thus, taking the oath of *besa* to follow the *Kanun* can be seen as a tradition spanning the transition from traditional cultures to the modern nation state (Lubonia, 2002; see also Begley, Coe & Palmer, 2015).

Besa: An Oath to Sacrifice for Others

The best known aspects of the *Kanun* concern how the oath of *besa* is applied to blood feuds and hospitality. Both of these examples of *besa* are promises to sacrifice for others when certain events occur. The importance of making sacrifices to maintain honor in blood feuds is frequently depicted in novels, movies, and plays (e.g., Romano & Miceli, 2016); and often emphasized in explanations of the entire *Kanun* (Mustafa, Young, Galaty & Lee, 2013). The relationship of blood feuds to evolutionary theory and the transition from traditional to state societies is discussed by Begley, Coe, and Palmer (2015). Here we focus on the aspect of *besa* related to hospitality because it is the aspect most puzzling to evolutionary explanations of human behavior.

In the section on social honor and degree of relationship, the *Kanun* states that “after you have said, ‘Welcome,’ he [the guest in your house] must have no fear and know that you are ready to defend him against any danger” (Fox, 1989, p. 132). The gravity of the obligation to defend a guest is revealed in the stipulation that “if someone mocks your guest, or abuses him, *you must defend your guest’s honor, even if your own life is in danger* [emphasis added]” (Fox, 1989, p. 136; for an example of a blood feud resulting from the killing of a guest, see Mustafa, Young, Galaty & Lee, 2013). The importance of this pledge to sacrifice one’s life to protect a guest is described by Dharssi and Krieger (2010):

Meaning “to keep the promise,” *Besa* is a code of honour that holds a central place in Albanian culture. It is linked to an Albanian folk principle of taking responsibility for others in their time of need. According to one Albanian saying, “Albanians would rather die than break *Besa*.” (p. 18)

Besa also obligates people to be willing to kill their own close kin in order to protect a guest, as Hasluck (1954) recounted, “Children in *Shalë* [a valley in northern Albania] were taught with great pride that once a tribesman killed his brother for killing a guest, for an Albanian’s duty to his guest transcends the claims of blood relationship” (p. 211).

Besa: An Evolutionary Puzzle

From an evolutionary perspective, the first puzzling aspect of pledging *besa* to follow the *Kanun*’s prescriptions concerning the protection of guests is that this entails sacrifice for all guests who are members of one’s *fis*. This is a puzzle because a *fis* is a category that includes many kin far more distantly related than the range of kin where such acts of sacrifice could possibly be accounted for by kin-selection.

Scholars have struggled over whether a *fis* is a lineage, clan, or tribe. For example, Fox (1989) settled on the term clan (p. XX), and Mustafa, Young, Galaty & Lee (2013) differentiated between two types of *fis*. They referred to a small *fis* (*fis i vogël*) as a patrilineage, and describe it as a “line of descent that includes cousins, both immediate and distant” (p. 89). They then stated that “the *fis i madh* (‘big *fis*’)” is a “wider lineage network composed of all those individuals who trace descent from a single, probably mythical, ancestor, sometimes glossed as ‘tribe’” (p. 90). Although it might be convenient to refer to a large *fis* as a tribe, it is misleading because a *fis* is exogamous and thus this category of people does not approximate either a breeding population or a self-contained “people” or “culture.” Instead, a *fis i vogël* appears to co-

incide with what anthropologists typically call a lineage, and *fis i madh* a clan, because these terms refer to smaller and larger categories of individuals defined by having the same descent name. The “growth and elaboration of patrilineages” (Mustafa, Young, Galaty & Lee, 2013, p. 87), which transforms a *fis i vogël* into a *fis i madh*, has been observed in traditional cultures throughout the world where “...large lineages or clans grow up over time as the descendants of the original ancestor/ancestress accumulate” (Fox, 1967, p. 122). The potential multi-generational duration of this process is indicated by the Albanian saying “blood goes endlessly” (Gjeçovi, 1993, p. 122), and the extent to which this potential has been realized is indicated by Whitaker’s (1968) observation that “the genealogies of individual persons would be carefully remembered, showing a link by male descent with the founder of the clan, who might have lived thirteen or fourteen generations earlier” (p. 254). The concept of *fis* also appear to exhibit the segmentary opposition (Evans-Pritchard, 1940) typical of such descent name categories whereby lineages, clans, and still larger categories of multiple clans claimed to have a common ancestor, unite in opposition to outside threats: “Sometimes *fis* would join together into larger confederacies (*farë e fis*), (Mustafa, Young, Galaty & Lee, 2013, pp. 90-91). Indeed, “the historical process that led to the current structure of the Shala *fis* presents an excellent example of tribal segmentation, whereby through time, larger social units grow and fission along kinship lines” (Mustafa, Young, Galaty & Lee, 2013, p. 106).

The important point is that kin selection cannot account for the vast majority of kin to whom individuals pledge to sacrifice for by taking the oath of *besa*. This is because even the smaller *fis* include both immediate and distant cousins, while the large *fis* include far more distantly related cousins, and confederations of *fis* include cousins who are still more distantly related. Indeed, there is emphasis placed on the obligation to sacrifice in order to protect a guest who is not close kin, and may not even be distant kin. Fox (1989) stated that “the guest (*mik*) [*miq*] usually belongs to a different brotherhood, village, or clan” (p. 136), and Mustafa, Young, Galaty & Lee (2013) referred to *miq*, not as kin, but as “friends of the family” (p. 105).

The oath to be willing to die to protect a very distantly related, or even unrelated, guest could, in some instances, be potentially explained by reciprocal altruism. Indeed, Fischer (1984) stated “*Mik* means linked through reciprocity” (p. 110). However, the *Kanun* stresses that hospitality requiring such sacrifice was not to be restricted to likely reciprocators. Jacques (1995) described how *besa* requires extreme sacrifice for not just those who may reciprocate, but even to those with whom one has a hostile relationship: “Hospitality was a sacred obligation, the host being required to avenge harm to one’s guest....The *besa* or *besa-besën* (word of honor) was an oath or pledge to keep one’s word, and when extended...to blood enemies was absolutely sacred and inviolable” (p. 176).

Besa’s encouragement of extreme sacrifice for individuals who are neither close kin nor likely reciprocators might be explainable by some form of group selection. However, the group that might be benefiting from this sacrifice is not readily apparent. Neither the small or large *fis* constitute promising candidates for group selection because neither category forms a residential group. Although some of the members of a small *fis* may live in the same place, others do not (Mustafa, Young, Galaty & Lee, 2013, p. 89). Exogamy also means that “all villages are inhabited by several lineages...” (De Rapper, 2012, p. 85), and larger geographic areas will have members of different large *fis* (Galatay, Lafe, Lee & Tafilca, 2013, p. 26; see also Voell 2004; Bardhoshi, 2012). Further, the emphasis placed on the willingness to sacrifice for the benefit of “enemies” would appear to go against the hypothesis that the sacrifice benefitted even a temporary “trait-group” (Wilson, 2015, p. 152) of cooperating individuals.

Thus, the oath of *besa* in this context entails promising to sacrifice one’s own life, and/or the lives of one’s family members, in order to protect someone who may be neither close kin nor a co-member of any form of salient group, and to do so without consideration of future benefits resulting from direct or indirect reciprocity. That is, the exhortation to make such a sacrifice is not contingent on any of the conditions predicted by evolutionary theory. Instead, it is only contingent on the act being prescribed by ancestors as

the “right” and “honorable” way to behave. This is consistent with the observation that “one of the guiding principles [of *besa*] is...sacrifice for the sake of honor” (Schwander-Sievers, 2002, p. 7).

Another possible evolutionary explanation is that all of the talk about *besa* was just talk. That is, there was a tradition of talking about sacrifice, but actual acts were so rare that they do not warrant an explanation. This might be a plausible explanation if the evidence of actual acts of altruism resulting from *besa* was confined to stories of such acts (Durham, 1909, p. 171; Gawrych, 2006, p. 12). There is, however, much stronger evidence. During World War II at least several thousand Albanians hid Jews, and others, from the Nazis, and often claimed that it was their oath of *besa* that led them to do so (Nidam-Orvieto & Steinfeldt, n.d.; Gershman, 2008; Perez, 2013; Paldiel, 2008). These acts of altruism occurred despite the fact that “the German army...issued orders...to kill the relatives of those who resisted their forces” (Vickers, 1995, p. 152).

Although it is impossible to know exactly how many Albanians risked the lives of themselves and their families to rescue Jews, the Yad Vashem organization of Israel received a list of 3,280 Jews claimed to have been saved by Albanians during WWII. Further, as of 2015, 73 Albanians have been awarded the title of “Righteous Among the Nations” by Yad Vashem. This is particularly significant because the criteria required to be awarded this title effectively eliminates the possibility of the behavior being explainable by conventional evolutionary explanations of altruism:

A person can be considered for the title of "Righteous Among the Nations" when the data on hand based on survivor testimony or other documentation, clearly demonstrates that a non-Jewish person risked his or her life, freedom, and safety, in order to rescue one or several Jews from the threat of death or deportation without exacting monetary compensation or other rewards. (Yad Vashem Web Page)

This single sentence stipulates that the altruism had to involve extreme sacrifice (i.e., risking of life, freedom, and safety), had to benefit someone who was neither close kin nor of the same group (i.e., a non-Jew had to sacrifice to benefit a Jew), and could not be done to reap benefits from reciprocation of any kind (i.e., monetary compensation or other rewards). Thus, it essentially stipulates that the title of “Righteous Among the Nations” is only awarded to individuals who behaved contrary to the predictions of conventional evolutionary theory (Palmer, 2013b). Further, there had to be evidence that this altruistic behavior actually took place and was not “just talk”.

Although it might be argued that this number of individuals, as well as the total number of people awarded the title of Righteous Among the Nations (25,685 as of January 1, 2015) may be consistent with the rare aberration argument, this explanation cannot account for why the Righteous Among the Nations and other altruists are so often portrayed to be moral exemplars that inspire others (Palmer, 2013b). More generally, it cannot account for why traditional codes of ethics requiring apparently unfit forms of sacrifice (e.g. sacrificing one’s life in battle) may be wide spread, if not universal (Palmer, Begley & Coe, 2013; Palmer, Begley, Coe & Steadman, 2013). Hence, the consideration of an alternative hypothesis about altruism that explicitly incorporates the traditional encouragement of altruism is warranted.

An Alternative Evolutionary Explanation: Traditional Parental Manipulation

To find a new explanation of altruism capable of accounting for traditional codes of ethics, we start by returning to a largely unused third explanation of altruism first put forth in the mid-1970s. The parental manipulation explanation of altruism (Alexander, 1974; Dawkins, 1982; West-Eberhard, 1975) is based on the concept of parent-offspring conflict. As originally stated by Trivers (1974), the existence of parent-offspring conflict means that “parents are expected to attempt to mold an offspring, against its better interests” and in favor of the interests of the parent (p. 249). This attempted molding, or manipulation, is the result of the simple biological fact that a parent is equally related to all of his or her offspring, but the off-

spring is completely related to itself ($r = 1$) and only half related to a full sibling ($r = 0.5$) (where “ r ” stands for degree of relatedness within the range of 0 to 1). Therefore, evolutionary theory predicts an “offspring should value its personal fitness twice as much as it values any full sib’s fitness” (Kurland & Gaulin, 2005, p. 452), but parents should try to influence offspring to value a full sibling as much as it values itself (Wright, 1994, p. 166). This is because both siblings are equally valuable to the parent in terms of genetic relatedness because both offspring are equally related to the parent. This prediction is supported by the apparently cultural universal of encouragement of altruism toward kin, labelled by anthropologists as the “axiom” of “kinship amity” Fortes, 1969, pp. 231-232).

During the 1970s, evolutionists recognized that “humans are parental manipulators par excellence” (Alexander, 1974, p. 367) and that a human parent could suppress selfish behavior even in their adult offspring, and even after the death of the parent (Alexander, 1974, p. 368; Trivers, 1974, p. 262; West-Eberhard, 1975, p. 18). However, these insights only scratched the surface of the potential behavioral consequences of parental manipulation because they only considered the influence of parental manipulation on the next generation of descendants. Two decades later, Voland and Voland (1995) suggested that “the conscience evolved within the context of parent/offspring conflict over altruistic tendencies” (p. 397) and functioned to reduce the “selfish impulses” of offspring (p. 401). Then Voland and Voland (1995) came tantalizingly close to recognizing the full consequences of parental manipulation when they referred to the possibility of offspring being “raised to ‘voluntarily’ stake at least part of their reproductive fitness for the maintenance and welfare of their families and thus to the long term advantage of their *lineage* [emphasis added]” (p. 407). The use of the word “lineage” is crucial because it refers to a chain of ancestors and descendants, and therefore implies a time-span much longer than one individual’s entire lifespan.

The failure to follow up on this insight is unfortunate because recognizing that this manipulation can be extended past a single generation leads to a profound new prediction about how individuals should be expected to behave. If individuals who influenced all of their offspring to “treat each other as if you valued them as much as yourself” (i.e. $r=1.0$) have been favored by natural selection over individuals who did not influence their offspring to behave this way toward their siblings, then individuals who had grandchildren influenced to treat all of their co-descendants as if they valued them as much as themselves (i.e. $r=1.0$) would have been favored over individuals who did not have their grandchildren influenced to behave this way toward their siblings *and first cousins*. Further, individuals who had all of their *great-grandchildren influenced* to “treat each other as if you valued them as much as yourself” (i.e. $r=1.0$) would have been favored over individuals who did not have their great-grandchildren influenced to be this way toward their siblings, first cousins, *and second cousins*, and so on, and so forth. This leads to the conclusion that selection would have favored individuals who were most success at influencing the social behavior among the most distant generation of their descendants (Steadman & Palmer, 2008; Coe, Palmer, Palmer & DeVito, 2010; Palmer & Palmer, 2015).

The question is then: How could individual humans possibly influence descendants born many generations after their own death to be willing to sacrifice for their distantly related co-descendants? The answer is as simple as it has heretofore been unappreciated: through transmitting traditional behaviors that influenced each generation to be willing to make such sacrifices *and* to replicate that transmission to the next generation. Such a multi-generational approach is fully compatible with the view that natural selection can be most accurately measured over a large number of generations than in terms of the number of surviving children or grandchildren produced (Alexander, 1974, p. 346; West-Eberhard, 1975, p. 29; Dawkins, 1982, p. 184). It is also consistent with evidence of cultural traditions often enduring many generations (Palmer, 2010; Mathew & Perreault, 2015), and with examples where explicit emphasis is placed on replicating the traditional code of ethics to each generation. For example, Sosis (2008) wrote:

Arguably the central Jewish prayer, the V’ahavta (the first paragraph of the shema), which is placed inside the mezuzot (hung on Jewish doorposts) and tefillin (phylacteries), emphasizes the importance of teaching the Torah’s laws to children. Ironically, this is the first prayer that Jewish

children learn, so children are thereby taught the importance of teaching Jewish ways to their children. (p. 214)

The final question that needs to be addressed is: How could selection favoring the ability to influence distant generations of descendants to sacrifice for their genealogically distant co-descendants, lead to a code of ethics specifying similar actions to be directed toward individuals who were not co-descendants. We suggest that the traditions exhorting sacrifice for others occurred during a period when all individuals consistently were co-descendants. That is, “we were made for a world...in which all activities were enmeshed in webs of kinship...” (Cronk, 1999, p. 119). In such an environment there would not be selection to make the distinction between kin and non-kin and to restrict the altruism to only kin. This allowed for traditional codes of ethics to be modified relatively easily to encourage sacrifice for even unrelated individuals in other groups who are unlikely reciprocators.

Conclusion

Although the tradition of pledging *besa* to follow the *Kanun* is unique in its details, we propose that following the lineages of all living humans into the past would lead to ancestors who influenced the behavior of many generations of descendants through transmitting traditional codes of conduct. That is, the saying of the Lugbara of Africa that “the rules of social behaviour are the ‘words of our ancestors’” (Middleton, 1960, p. 27), would apply to all of our ancestors. Further, the fundamental values to which one pledged *besa* also appear to be universal. For example, Turner (1975), who reported that among the Ndembu, the “moral man” is one who “honours his kinship obligations” and “respects and remembers his ancestors,” also reported that these “moral values and...ethical code...would be recognized as valid by all human groups” (p. 238).

We propose that focusing on the traditional nature of these codes will significantly contribute to the explanation of forms of human altruism puzzling to conventional evolutionary explanations. Further, this approach may also help to account for the many other forms of behavior that often accompany the transmission of traditional codes of behavior. For example, the behaviors prescribed in the *Kanun* were not simply transmitted from parents to offspring as simple instructions of how to behave. Instead, the tradition was made more interesting, and thus more influential, through being transmitted in stories, songs, and plays, and these accompanying behaviors often emphasized the importance of keeping one’s *besa* to sacrifice for others as prescribed by the *Kanun*. Whitaker (1968) explained how “traditional Albanian epic songs (këngë trimnijë)...reveal the Canon of Lekë Dukagjini in operation” (p. 265), and Mustafa, Young, Galaty & Lee (2013) observed that the pledge of *Besa* to follow the social behavior require by the *Kanun* is “informed by cultural narratives so immense and unique to the people of the valley that entire books have been written about them” (p. 85). For example, the play “*Besa yahud Ahde Vefa (Pledge of Honor or Loyalty to an Oath)*”, written by Şemseddin Sami Bey Frashëri and first performed on stage in Istanbul in 1874, emphasized the oath to engage in sacrifice that would appear to be evolutionarily “unfit” because the hero righteously sacrifices both his own life and that of his son in order to keep *besa*. The author of this play, Şemseddin Sami, observed: “Albanians are very strong in defending their ancestors’ morals [*ahlak*], customs [*adat*], honor [*namus*] and race/nationality [*cinsiyet*] as well as in [fulfilling] their oath that they call *besa*” (as quoted in Gawrych, 2006, pp. 97-98). To this observation, we add that his play probably helped transmit the tradition of *besa* to future generations, and that many forms of folklore, literature, and art in other cultures also facilitated the transmission of traditions encouraging sacrifice for others.

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COMMENTS

on Palmer and Palmer

Parental manipulation vs. multi-level selection: Equivalent or Alternative Hypotheses?

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The example of *Besa* discussed by Palmer and Palmer (hereafter PP) is one of many examples in which individuals are expected to abide by the commandments of their moral community, even when it entails sacrifice to self and kin. They focus on a norm of protecting guests in one’s home, but they could have equally focused on the story of Abraham’s willingness to sacrifice his only son, Isaac, for no reason at all other than obedience to his God.

These acts of obedience to one’s moral community are puzzling against the background of inclusive fitness theory, as it was originally formulated in the 1960’s. The original formulation assumed that behaviors are coded directly by genes and calculated an “inclusive fitness” based on fitness effects on self and others, weighted by the probability of sharing genes identical by descent. According to this logic, individuals should never help unrelated individuals or more distantly related kin at the expense of more closely related kin. Other theories are required to explain such behaviors, such as reciprocal altruism, group selection, or parental manipulation.

A lot has happened since the 1960’s, which is only partially reflected in the target article. Inclusive fitness theory has gone way beyond the narrow interpretation of genes that are shared through identity by descent. The coefficient of relatedness (r) is now interpreted more broadly as a correlation coefficient between the phenotypes of the actor and recipient (see Birch and Okasha 2014 for a recent review). Take the case of parental manipulation as an example. For simplicity, imagine that parents are able to completely

control the behaviors of their offspring toward each other. Sibling interactions are therefore phenotypically uniform within each family but differ between families, leading to a phenotypic coefficient of relatedness of $r=1$. In the language of multi-level selection theory, there are no fitness differences among siblings within families and there are fitness differences between families, so parental manipulation is a case of pure between-family selection.

This hypothetical example illustrates the concept of equivalence, or theoretical frameworks that offer different perspectives on the same causal process, as opposed to invoking different causal processes (Wilson 2015, ch 3). Non-equivalent frameworks invoke different causal processes and deserve to replace each other on the basis of empirical evidence, in the standard scientific fashion. Equivalent frameworks deserve to coexist to the extent that they offer useful insights by virtue of their different perspectives. It is a great mistake to argue equivalent frameworks against each other, as if one can be right and the other wrong. Instead, it is important to develop an ability to translate between equivalent frameworks, similar to translating between different languages.

PP briefly allude to equivalence in their target article (citing Henrich 2004, p. 10) but treat their own parental manipulation hypothesis as non-equivalent. Either way, I find their hypothesis highly implausible. A causal mechanism is required to explain how parents influence the phenotype of their offspring beyond sharing half of their genes. The mechanism might be epigenetic or behavioral. A causal mechanism is also required to explain how ancestors influence the phenotypes of their distant descendants. Insofar as the mechanism is behavioral, then PP's hypothesis invokes the transmission of behaviors across generations, which is cultural evolution. In their reply, I hope that PP will spell out how a cultural norm such as *besa* can evolve by ancestor manipulation, *compared to alternative norms*. Evolution is a comparative process. Presumably there were other norms that died out in competition with the *besa* norm. At what scale did the competition occur? Between individuals within socially defined groups? Between socially defined groups? I will be surprised if this line of inquiry does not end up identifying a form of cultural group selection.

Even when we follow PP's logic, an add-on is required to explain the "puzzle" of *besa*. The norm must have evolved during a historical period "when all individuals were consistently co-dependents". No evidence is provided in support of this claim, which remains a speculative "just-so" story.

I conclude this commentary with a few observations.

1) A norm such as *besa* is not a puzzle. It is the nature of morality that individuals are expected to subordinate their self-interest to the interest of their moral community. Subordinating self-interest includes subordinating interest in genealogical relatives.

2) To the best of our current knowledge, the genetic and cultural traits associated with morality evolved by between-group selection. Very simply, groups that manage to function in a well-coordinated fashion and avoid disruptive self-serving behaviors among their members outcompete other groups. This was Darwin's hypothesis and its modern exposition can be found in books such as Boehm (1999, 2011) and Turchin (2005, 2015).

3) Parental manipulation is not an alternative hypothesis. It assumes that evolution takes place in a multi-group population. Parental manipulation influences the partitioning of behaviors within and among groups, and so on. PP need to demonstrate their grasp of equivalence by translating their model into the language of multi-level selection theory.

4) The specific norm of *besa* makes good functional sense for a segmented society subject to chronic feuding. While I am not familiar with the details of Albanian society, it is probably similar to the feuding

Montenegrin society described by Boehm (1984) and to Evans-Pritchard's (1940) original account of segmentary opposition among the Nuer. In these societies, segments shift back and forth between competition and cooperation depending upon the scale of the common threat. Conventions and norms are required for segments of the society to resolve their conflicts other than by endless feuding. The leopard skin chief performed this function in traditional Nuer society (Evans-Pritchard 1940; discussed from a multi-level cultural evolutionary perspective in Sober and Wilson 1998 p. 186-191). Chosen from an unimportant lineage, he was given sacred status to arbitrate homicide disputes. Without this convention enforced by norms, it is almost certain that Nuer society would have disintegrated into smaller social units that would be unable to unite in the face of common threats. In other words, between-group selection is a strong and observable force capable of explaining the cultural evolution of the social convention. I can well imagine that *besa* performed a similar function in Albanian Society. Currently opposed segments would need to mend their differences to unite in the face of a common threat. This would require meeting in each other's homes and protecting visitors from one's own kinsmen bent on revenge. In this fashion, the norm of *besa* can be explained at face value as a group-level adaptation without turning it into a puzzle.

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Self-Sacrifice for Unrelated Individuals: Further Considerations

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Self-Sacrifice for Unrelated Individuals: Further Considerations

Palmer and Palmer (this issue) argue that existing evolutionary accounts of altruism (i.e., kin selection, reciprocal altruism, and group selection) do not explain certain aspects of traditional ethical codes, such as self-sacrifice for unrelated individuals. They also assert that the “rare aberration” argument (e.g., Teehan, 2010) cannot account for why altruists are portrayed to be moral exemplars, and offer examples of self-sacrifice to refute the argument that actual acts of self-sacrifice are so rare that they do not warrant an explanation. Finally, Palmer and Palmer present an alternative explanation based on parental manipulation that may account for some occurrences of altruism, including self-sacrifice for unrelated individuals prescribed by the *Kanun*.

Palmer and Palmer seem to offer a reasonable, alternative, evolutionary explanation for why some traditional codes of ethics advocate self-sacrifice for unrelated individuals. However, self-sacrifice for unrelated individuals may be motivated by several, non-exclusive reasons. In this comment, we identify and address theoretical concerns, including: 1) the actual occurrence of self-sacrifice for unrelated individuals, 2) the rare aberration argument, 3) parental manipulation as an alternative explanation for self-sacrifice, such as prescribed by the *Kanun*, and 4) modifications of traditional codes of ethics to encourage sacrifice for unrelated individuals.

Actual occurrence of self-sacrifice for unrelated individuals

Palmer and Palmer comment that “all of the talk about *besa* was just talk” (e.g., Schloss, 2004). They argue that this is unlikely to be correct, given the evidence that self-sacrifice does occur. They point out the thousands of Jews who claimed to have been saved by Albanians during World War II. However, we are not convinced that the evidence presented by Palmer and Palmer is sufficient to refute the aberration argument. The authors assert that “it is impossible to know exactly how many Albanians risked the lives of themselves and their families to rescue Jews”. We rather state the opposite: It is impossible to know exactly how many Albanians *did not* risk the lives of themselves and their families to rescue Jews.

It is probable that there are far more Albanians who *did not* help Jews than who *did* help them – simply because humans are built by ruthlessly selfish genes (Dawkins, 1976). In fact, history is rife with stories of selfish behavior. During the Cold War, Americans who turned in supposed communists gained the benefits of being considered patriots and moral exemplars. It is not surprising that some Americans sold out even their relatives. Recently, many Europeans refused to host Syrian refugees, for the sake of their own social welfare. Therefore, self-sacrifice for unrelated others may be infrequent enough that it qualifies as an aberration, an error of evolved machinery of the mind. When it has occurred, it seems to be confined to very specific cases (e.g., “Righteous among the Nations”), and often entails very specific behaviors – maybe even a rare aberration, as suggested by previous evolutionary scholars (e.g., Teehan, 2010).

Self-sacrifice as rare aberration

One of the explanations for this sort of altruism is that such behaviors reflect the outcome of an evolutionary “glitch” (i.e., a rare aberration; Teehan, 2010). Palmer and Palmer state that such an argument cannot account for why such people are “so often portrayed to be moral exemplars that inspire others”. More generally, and according to Palmer and Palmer, it cannot account for why such “traditional codes of ethics requiring apparently unfit forms of sacrifice (e.g., sacrificing one’s life in battle) may be wide spread, if not universal”. However, apparently maladaptive forms of sacrifice (such as sacrificing one’s life in battle) might have selfish motives, such as the promise of compensation (e.g., pension, prestige); and those who sacrificed themselves for the sake of the others may be considered moral exemplars simply because such anomalous behaviors – the pure altruistic behaviors – benefit others.

Because altruistic behaviors benefit others, individuals who perform them are often regarded as heroes and moral exemplars; and because they benefit others, many forms of folklore, literature, and art facilitate the transmission of traditions that encourage sacrifice for others. This does not mean that individuals are seeking to become moral exemplars by sacrificing themselves for others. It also does not mean that all individuals who took the oath of *besa* to follow the *Kanun* are in fact prone to perform such acts. Therefore, we are not convinced that the rare aberration argument cannot be among the valid evolutionary explanations for such acts of self-sacrifice.

Parental manipulation as an alternative explanation

Palmer and Palmer offer parental manipulation (Trivers, 1974) as an explanation for self-sacrifice for individuals who are neither close kin nor a co-member of a social group. According to Palmer and Palmer, parents are expected to encourage an offspring to value full siblings as much as himself or herself – as parents are equally related to all their offspring. Similarly, grandparents are expected to encourage a

grandchild to value cousins as much as himself or herself – as grandparents are equally related to all their grandchildren. We argue that it may not have been ancestrally advantageous for parents to encourage an offspring to value cousins as much as himself or herself, because the offspring's cousins are less related to the parents than is the offspring. Similarly, it may not have been ancestrally advantageous for grandparents to encourage a grandchild to value *second cousins* as much as himself or herself, and so on. Therefore, parental manipulation, if extended past a single generation, embodies an intergenerational conflict of interests. The question is: What are the ancestral advantages for parents to encourage an offspring to value co-descendants (with the exception of full siblings) as much as himself or herself, if such co-descendants (e.g., first or second cousins) are not equally related to parents as the offspring is?

Modifications of traditional codes to encourage sacrifice for unrelated individuals

Palmer and Palmer suggest that the “traditions exhorting sacrifice for others occurred during a period when all individuals consistently were co-descendants” and “this allowed for traditional codes of ethics to be modified...to encourage sacrifice for even unrelated individuals in other groups who are unlikely reciprocators”. They argue that, in ancestral environments, individuals interacted most often with genealogically close co-descendants; in the modern world, because we live in larger social groups, individuals are less likely to be genetically related to members of the social groups to which they belong.

Such differences between ancestral and modern environments did not modify human proneness to sacrifice the self for others (i.e., co-descendants), but may have led to the modification of traditional codes of ethics, to encourage sacrifice for unrelated individuals. However, it is not clear *why* traditional codes of ethics may have been modified to encourage sacrifice for unrelated individuals. If the mechanism underlying such codes of ethics is *specifically* the proneness to perform self-sacrifice for co-descendants, then why have such codes of ethics – which can be modified during transmission – not been modified accordingly, i.e., to *specify* sacrifice for genealogically close co-descendants rather than for unrelated individuals?

Conclusion

In an engaging and fascinating paper, Palmer and Palmer seem to identify a reasonable, alternative, evolutionary explanation for why some traditional codes of ethics encourage self-sacrifice for unrelated individuals. However, we argue that some existing evolutionary explanations are plausible, and that Palmer's and Palmer's explanation is not in conflict with them. For instance, as suggested by Palmer and Palmer, individuals might follow this code of ethics because it is consistent with the proneness to self-sacrifice for others. However, some individuals might take the oath of *besa* to follow the *Kanun* because they secure the benefit of social acceptance, and they did not expect and neither did they intend to sacrifice themselves for unrelated individuals. Also, individuals might follow *besa* as a culturally-supported aberration to perform extreme altruistic behaviors – behaviors that made them moral exemplars because of the bevy of benefits bestowed on others.

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Cultural Power and Manipulation

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Evolutionary theory for human cultural evolution is based on an apparent paradox: each individual is expected to strive to maximize their own inclusive fitness, but the moral codes of most, if not all human cultures, exhort their members to be altruistic and self-sacrificing. Several conceptual frameworks purport to explain this foundational human hypocrisy.

First, as proposed by Darwin (1871), competition between groups can select strongly for self-sacrificial cooperation in the general service of defense, where self and group interests commonly coincide. Lahti (2005) extended this argument, suggesting that shifts across time and cultures in the relative strengths of within versus between group conflicts drive fluctuating selection for moral and religious beliefs and behavior, and maintain conditionality of expression and intensity in altruism. This Darwinian, and now Hamiltonian, framework depends on biological and psychological kinship (Bailey 1998) being greater within than between groups, and within-group altruistic or mutualistic benefits from cooperation.

Second, as proposed by Freud (1930/2002), unconscious self-interests conflict with conscious moral sentiments (and their institutional agents) within the psyche, with ongoing discontents as outcome. This view provides a general psychological mechanism, compatible with cultural-evolutionary theory, for the development and expression of human striving under cultural, within-group constraints. Such mechanisms are important because they indicate the otherwise-invisible hand of adaptation due to specific forms of selection in the past (Tooby and Cosmides 1995); they are supported, for example, by common human inability to rationalize moral decision-making (Haidt 2001).

Third, as proposed by Palmer and Palmer, self-sacrificing and altruistic behaviors within groups can be manipulated – that is – imposed upon individuals, by parents, ancestral lineages, and resultant cultural traits such as moral codes. The key process here is the generation and perpetuation, by older individuals, of cultural phenotypes (such as morals and religious stories and beliefs) that foster increased cooperation among children and later descendants. Such cooperation benefits the perpetrators because it reduces competition between copies of their own alleles, in the same general way, for example, that producing a female-biased sex ratio reduces competition between a mother wasp's genes in the males of her brood (Shuker et al. 2005). Moreover, Palmer and Palmer suggest that self-sacrificing, ancestrally-manipulated cultural traits should also evolve towards more-effective cultural transmission, through explicit prescription of their teaching to the next generation.

Manipulation may work in any given case, but it also imposes costs on the manipulated individuals. Any given female in a wasp brood would have had higher inclusive fitness as a male, and any given child could have higher fitness if less controlled by parents. In wasps, the process works because mothers determine the sex of their offspring. In humans, the manipulation mechanism succeeds, in theory, because young human children can be so readily and thoroughly indoctrinated: having so much to learn when young creates a premium on uncritical acceptance of enculturation.

But are human children so culturally malleable for such fitness-salient traits as altruism and self-sacrifice? How much indoctrination is mutualistic rather than manipulative? From a genetic perspective, how much will intragenomic conflict between genes expressed during childhood or parenthood limit the evolution of such kin-conflictual traits (Bossan et al. 2013)? Most broadly, is manipulation, from parents, to ancestors,

to stories, to moral codes and religions, a necessary or sufficient mechanism to explain culturally-prescribed sacrifice?

The main importance of Palmer and Palmer's hypothesis should, in my view, be not manipulation *per se* but asymmetries in power, and this perspective generalizes and extends their argument as well as raising new and crucial questions. Power is control over a phenotype in another individual: control through asymmetries in physical force (dominance), knowledge (information), or leverage (possession of some resource that cannot be taken by force) (Lewis 2002, Watts 2010). It is the forms, agents, and strengths of asymmetries in power, combined with considerations from kinship and within and between-group structures, that must predominantly control the formation and perpetuation of cultural traits. Small-scale societies, which are often highly egalitarian, will differ profoundly in power asymmetries, structures and dynamics from societies with written codes or institutionalized religion, whose forms will be determined by who originated them, who benefits from them at any given time, and who, if anyone, can change them in what ways.

A focus on power in general, rather than just manipulation in particular as one of its mechanisms, is important because it tells us what aspects of culture to measure, and where to look for the causes of cultural phenotypes and changes, including apparently-paradoxical self-sacrifice. Most importantly, it is the combinations of kinship (both biological and psychological) with power, such as groups of self-perceived kin with common interests (Jones 2000) that should most-strongly structure societies and explain cultural traits such as moral codes. It is in this context in which we seek, and more or less succeed, to maximize our inclusive fitness, in ways both moral and not.

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Traditional Ethical Codes Prescribing Self-Sacrifice as a Puzzle to Evolutionary Theory

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“Much still to be learned, theoretically and empirically, about the evolutionary origins of Besa.”

Palmer and Palmer shed evolutionary light on *besa*, an Albanian traditional oath that appears to be a culturally-mediated motivator of altruism with the potential to be aimed at non-kin. Although we can place *besa* alongside any number of other behaviors in contemporary societies that appear to direct altruism at non-relatives, the tradition is particularly interesting for a couple of reasons. First, *besa* is a broadly-adopted tradition in Albanian culture. Second, *besa* appears to require costly sacrifice from those who adhere to its ideals. As a target for understanding the nature of contemporary human altruism, I agree that *besa* is an interesting cultural tradition to try to explain.

As Palmer and Palmer point out, the first thing we need to do if we are going to study *besa*-inspired behavior as a difficult-to-explain form of altruism is to establish that it is indeed a form of altruism. If the tradition of *besa* has inspired many costly behaviors aimed at helping non-relatives, we have a paradox on our hands. The reason that altruism is considered evolutionarily paradoxical is that we expect – absent any other dynamics – that non-altruists will end up producing more offspring than self-sacrificing altruists. Is there evidence that *besa*-inspired behaviors have been costly? Unfortunately most of the evidence for the costs of *besa* emerges from the rhetoric of *besa*. Numerous psychological experiments have demonstrated that the stated rationale for a behavior does not always reflect the true underlying strategy of a behavior (Nisbett & Wilson 1977), so there is reason to question whether *besa* actually compels costly behavior. Perhaps *Albanians would rather die than break besa*, but the real question is *how often have Albanians died to avoid breaking besa?*

The most direct evidence that Albanians exhibit altruistic *besa*-inspired behaviors involves shielding Jews from the Nazis during World War II. Reasonably documented, this behavior can clearly be seen as *potentially-costly*. The risk associated with defying Nazi invaders is undeniable, but the altruistic nature of *besa* could be better understood if there were historical accounts of the frequency with which the shielding of Jewish guests led Albanians to be killed, imprisoned, or otherwise sanctioned by the Nazis. If *besa* is still an operating Albanian tradition – which it seems to be – then it must also be possible to measure its actual costs today; if we cannot demonstrate the costly nature of *besa*, we cannot label it an altruistic behavior. Ideally, data chronicling the actual cost of *besa* would involve direct observation of costly behavior rather than self-reporting, as people tend to bias depictions of their own behaviors to align with social norms (Sablosky 2014).

The stated rationale for a behavior is not always the actual reason why that behavior exists. An alternative explanation of *besa* is that while the tradition is framed socially in terms of self-sacrifice, it actually provides direct benefits to those who maintain the tradition. This is possible if *besa* is understood as an implied threat to do harm to those who dishonor one’s home, including guests in that home. The implied threat in *besa* may be all that is necessary to prevent exploitation or attack by others (perhaps even by one’s own kin), so maintaining one’s adherence to *besa* could be a cultural version of aposematic signaling. As such, *besa* could belong to a larger family of honor traditions (Cohen *et al.* 1996) in human societies whose basic message is *don’t tread on me*. The Albanian honor tradition of *besa* may also be a social-

inclusionary trait (Roughgarden 2009) whose benefits outweigh its costs; if demonstrating (sometimes even through an extreme act of violence against a relative who has transgressed) an adherence to *besa* is crucial to maintaining status in Albanian society, *besa*'s benefits may still outweigh its costs. Honor traditions can provide direct benefits to those who practice them and thus may not be evolutionarily paradoxical. In order for the “paradox of *besa*” to be taken seriously, more serious work needs to be done to establish that honoring *besa* leads to altruistic rather than directly self-serving behaviors.

Rather than arguing that evolutionary theory cannot explain *besa*, Palmer and Palmer suggest that the current toolkit employed by evolutionists is insufficient to the job. I am amenable to this idea, especially when it comes to explaining the evolution of very-recently-evolved human behaviors, which are invariably more a product of cultural rather than genetic evolution. Traditionally we evolutionists pull from a toolkit that was honed by studying the evolution of other species; because we share biological heritage with other animals, that toolkit works well for explaining many human behaviors. But today humans – and in particular human societies – exist in unprecedented forms. This suggests that some very unique theoretical tools may be required to explain the recent evolution of many human behaviors.

Palmer and Palmer seek to add to the evolutionist's toolkit by suggesting that some human behaviors are mediated by parental manipulation of descendants via culture (*put more simply*, a tradition). They propose that *besa* is a tradition which emerged because it allowed ancestors to control the behavior of their descendants, creating generations of altruists willing to aid weakly-related members of one's clan (*fis*). They suggest that their explanation is neither a form of kin selection (because members of one's integrated, inter-breeding *fis* are too distantly related) nor a form of group selection (because the *fis* does not represent a group with a fixed geographical location).

Whether or not Palmer and Palmer's ancestral tradition theory is substantially different from kin or group selection, it still has to clear the same hurdles as any theory explaining altruism. Primarily, the theory must provide an evolutionary mechanism that is robust to the universal threat to altruism: mutants who ignore rules promoting altruism and can therefore invade and prosper at the expense of the rule-followers. If it is in the interest of the clan but not individual members of the clan to altruistically sacrifice for the sake of the ancestral lineage, what prevents mutants resistant to the idea of *besa* from ignoring the tradition? Only a psychological predisposition to parental loyalty, or extremely well-policed cultural norms, would prevent the breakdown of *besa* as an honored tradition. And if either psychological or cultural mechanisms maintaining *besa* do exist, some other evolutionary mechanism must be maintaining these biological or cultural characteristics. The problem with Palmer and Palmer's theory is that it requires additional evolutionary mechanisms to maintain its own mechanism (high-fidelity trans-generational adherence to the prescripts of *besa*).

I do not doubt that in many cases vertical transmission of cultural ideas has occurred with reasonable fidelity across many generations. Palmer and Palmer's (2015) theory explaining the existence of *besa* predicts that the idea has been transmitted faithfully from parent to offspring for generations; interestingly, other evolutionary theories explaining *besa* might not require such fidelity. Uncovering historical evidence that *besa* has indeed been transmitted faithfully from parent to offspring for generations would provide some support for this theory.

The strongest evidence for *besa*-inspired altruism is accounts of Albanian protection of Jews from the Nazis. But by cultural definition – as well as genetic relatedness – Jews were outside of the integrated inter-breeding *fis* of Albanians, so at best this example of *besa* is applied in a manner that runs counter to the theory that *besa* serves to motivate altruism amongst a large, inter-breeding cultural group. That *besa* as a cultural idea has evolved to be applied so widely argues against its role as a means of promoting altruism within the *fis*.

Palmer and Palmer appeal to parent-offspring conflict to explain why parents would gain advantage by passing on the tradition of *besa* to their offspring. As a kind of explanation this could make sense, as it has been shown that parents can use manipulation to advance their own genetic fitness over the fitness of their offspring (Kapheim *et al.* 2015). However, it is not entirely clear what benefit parents derive from promoting the tradition of *besa*, as what it potentially fosters is altruism by offspring directed at distant kin; why such altruism is in the interest of parents needs to be better clarified. If inclusive fitness cannot explain this ancestor manipulation of descendants, what does?

Do the infrequent acts of extreme altruism that *besa* can promote increase the inclusive fitness of earlier ancestors? Possibly. Palmer and Palmer (2015) demonstrate in earlier work that a combination of inter-clan marriage and clan loyalty can create a very extensive in-group at which altruism can be aimed (for Albanians, the *fis*). It sounds as though the concept of the *fis* is ripe for genetic investigation: how related are individuals who identify as part of a *fis*? I don't doubt that such investigation would confirm that a *fis* is composed of many individuals who are only very distantly related; thus, I doubt genetically-assaying relatedness would resurrect kin selection as a sole explanation of *besa*-inspired behaviors. But just as it is important to quantify that *besa* compels costly – and therefore altruistic – behaviors, it is important to use available tools to establish that the affiliation with a *fis* cannot be explained simply based on kinship.

Which brings us full circle to the question of whether current evolutionary theory can explain *besa* as a form of altruism. Is the model of Palmer and Palmer really outside of the current toolkit of evolutionary theory? If the altruism required by adhering to *besa* is really the result of parental manipulation of descendants, then we can appeal to inclusive fitness as the explanation for this tradition. If inter-marriage between clans serves to integrate less-related individuals, then *besa* that compels altruism aimed at one's *fis* is really just a form of cultural group selection; if inter-clan marriages and adherence to *besa* are adaptive traditions, we would expect groups that maintain these traditions to outcompete groups with different traditions. Evolutionary theory's existing toolkit seems more than up to the job of explaining the existence of *besa*, especially if we include additional mechanisms that maintain social norms (*for example*: punishment, social partner choice, reputation).

What does seem novel to me in the tradition hypothesis forwarded by Palmer and Palmer is the combination of culturally-transmitted altruism-promoting norms, clan identity, and frequent inter-group mating. While I think that the mechanism they suggest can be understood by appealing to either inclusive fitness or multi-level selection, the details of their mechanism are interesting and potentially novel. The process by which humans have increased the scale of their societies seems intricately tied to various forms of social integration, and Palmer and Palmer nicely point out one scenario by which this social integration can emerge and compel altruistic behavior within a larger, weakly-related clan. I do not believe that group selection – especially cultural group selection – requires geographical location. For humans, groups can form so long as there are markers of identity and opportunities for exchange of altruism; human groups compete even within integrated societies. Palmer and Palmer's theory seems to me to portray an important but particular kind of group selection.

At this point their model of social integration via cultural tradition is a verbal and visual model. What they have proposed desperately begs for more sophisticated modeling that can properly simulate the fitness effects of inter-clan marriage and the cultural transmission of *besa*. Intuition about the actual dynamic behavior of mental or verbal models is notoriously bad: this is why evolutionary biologists build mathematical or agent-based models. It is possible that *besa* could be better understood through such modeling efforts.

Palmer and Palmer have illuminated an intriguing cultural practice and suggested an intriguing mechanism for its evolution. But before *besa* can better help us understand the nature of human altruism, we need to gather more evidence that *besa* actually compels altruistic behavior (and which clarifies at whom

that altruistic behavior is generally aimed). If *besa* does compel costly behavior, understanding the cultural evolution of the *besa* tradition requires rigorous modeling.

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How Universality Can Help Us Better Understand Evolutionary Explanations about Self-Sacrifice

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Although the authors discussed self-sacrificing focused on *Besa* and *Kanun* in the Albanian tradition, it is not uncommon among various other cultures or different times in human history. One of the highest levels of sacrifice – risking one’s life to save the life of a stranger or even enemy – has been also widely found across regions and times. However, this does not mean that we can easily encounter self-sacrificing people anywhere at any time. These people are rare but from many different cultures. For instance, as Palmer and Palmer mentioned about Albanian rescuers of Jews in World War II practicing *Kanun* (self-sacrificing), there were also people in many European countries (including Belgium, France, Netherlands, and Poland to name a few) who willingly took life-threatening risks to save the lives of Jewish people (See The International School for Holocaust Studies, 2016).

More recently, we have also heard the stories of heroes or heroines who first tried to help others escape when natural disasters hit or serious accidents occurred and were killed in the process. More specifically, in my doctoral research project studying South Koreans’ conceptions of “a moral person,” one respondent selected his moral exemplar as a young Korean man who lost his life while trying to save a drunken Japanese man who fell on the train tracks in a subway station in Tokyo, Japan (See Reitman, 2001). Considering the hostile relationship between Korea and Japan, we can easily understand that a Korean’s sacrifice to save a Japanese person’s life would be considered very surprising, and in turn, could be regarded as exemplary moral behavior.

If sacrificing one’s life for the sake of others has been found in various cultures, we can conclude that the ethical code of *Kanun* is the Albanian version of widespread moral virtue, self-sacrifice. However, I agree that the Albanian ways of practicing *Kanun* appear to be unique; how seriously it has been highlighted (they make an oath, *Besa*, to bind themselves to the promise), how much it has been emphasized (as the highest ethical code), and how long and widely it has been pursued (it has been their cultural tradition) all

indicate that they execute *Kanun* most seriously in many cultures of the world. However, if we were to seek evolutionary explanations of self-sacrificing (*Kanun*), keeping our focus on the universal aspects of the phenomena would be more helpful. Note that evolutionary theories, generally speaking, have tried to explain behavioral outcomes of the entire human species, not a single culture. Then, what kind of statement sounds more plausible: (1) an evolutionary outcome is only applicable for one tribe or culture, or (2) a universal behavioral tendency can be the results of an evolutionary process. Moreover, from an evolutionary point of view, all people living on the earth now are the offspring of forefathers who survived the evolutionary selection process, broadly defined. Any evolutionary explanation, therefore, should be applicable for similar behaviors of any groups of people in the world.

Palmer and Palmer's evolutionary solution to the puzzle is persuasive and brilliant, but one big question still remains: Why have only a small number of people shown the behavior? As the authors also mentioned, not all Albanians who know *Kanun* and practice *Besa* actually take actions accordingly. Because those greatly altruistic people are rare, they appear to be morally outstanding, remembered by many others for a long time, and becoming moral exemplars for someone else. If they are so sporadic, is it still legitimate for us to claim that we, as humans, have sacrificial genes programmed in ourselves throughout the evolutionary process?

One day in June of 2015, an elderly man fell on the train tracks at a subway station in South Korea. Three young men instantly ran down onto the tracks and saved the old man's life and survived. When they were asked what made them instantaneously put themselves in life-threatening situation, they answered, "it seemed like an instinct. Before I could think or decide anything, my body seemed to immediately react like that when I saw the old man on the tracks." An immediate bodily reaction to take risks can be evidence showing that we might have been genetically coded to be altruistic and self-sacrificing. It is human nature to be deeply moved and angered by a picture of the dead body of a 3-year-old Syrian boy washed upon the shore after an unsuccessful attempt to escape his country threatened by war and violence. Looking at the scenes of people suffering from famine and disease, we tend to take actions like donating our money, energy, and time to help and save them in any possible way. Naturally being concerned about the survival of others is a common behavioral pattern of the human beings.

In conclusion, it is safe to say that humans more frequently exhibit more sacrificial characteristics than we may have thought. Many people may be ready to practice *Kanun* in their own ways if any situation requires them to do so. This understanding of universal characteristics of self-sacrifice would make the evolutionary explanations about it from Palmer and Palmer more appreciable and plausible. We are self-sacrificing human beings who have been programmed to behave so throughout the history of our species.

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Palmer's and Palmer's Reply to Comments

We are very pleased to see that, as anticipated in our paper, most of the reviewers' comments consist of arguments in favor of one or more of the conventional evolutionary explanations of altruism as a solution to the puzzle of traditional ethical codes prescribing seemingly unfit acts of self-sacrifice.

Wilson, predictably, finds our explanation “highly improbable” because he finds such codes easily explained by group (i.e., multi-level) selection. We have no hope of dissuading him, or his followers, from that position. We will only point out that a crucial, but rarely recognized, tactic in Wilson’s group selection explanations is his recasting of whatever actual human behavior needs to be explained into “a group” phenomenon regardless of the inaccuracy of such a label. Given that any imaginable category of individuals can be referred to as if it was a group, this subtle tactic can give the unskeptical reader the impression that group selection is a plausible of explanation of any imaginable human behavior. In this case, Wilson uses his first sentence to recast the very ungroup like categories of individuals referred to in our paper (e.g., the categories of individuals referred to by the Albanian term *fis*) into a very group like “moral community.” This recasting then becomes essential to his conclusion: “1) A norm such as *besa* is not a puzzle. It is the nature of morality that individuals are expected to subordinate their self-interest to the interest of their *moral community*” (our emphasis). We propose that if, and only if, such recasting in group terms is accepted, do all explanations of altruism become equivalent with, and *a priori* examples of, group selection.

Turning to Wilson’s more specific criticisms, he is correct in pointing out that, due to length restrictions, we provided only one citation (Cronk 1999) to support our claim that there was a time in human existence “when all individuals were consistently co-dependents” (which we assume is Wilson’s misquotation of our statement that there was a time when “all individuals consistently were co-descendants”). For the evidence upon which our assertion is based we direct interested readers to the extensive ethnographic examples cited in Palmer et al. (2016). We were far more puzzled by Wilson’s assertion that we do not provide an alternative pattern of behavior proposed to have proved less successful than traditional parental manipulation. Not only does all of the evolutionary literature on parental manipulation imply a comparison of the evolutionary success of parents who manipulate their offspring in certain ways with those who do not, this comparison is explicit in our many statements that individuals who influenced their descendants in certain ways “would have been favored over individuals who did not.”

In contrast to Wilson’s assertion that the entire logic of our paper is flawed because the concept of alternative evolutionary explanations of altruism has been rejected, Lopes and Shackelford refer to our paper as a “reasonable, *alternative*, evolutionary explanation” (our emphasis). These authors focus primarily on the question, anticipated in our paper, of whether or not actual instances of unfit altruism are anything more than rare aberrations resulting from the general human tendency to seek the rewards that can be garnered from building a reputation for heroism. Thus, they question the proportion of Albanians protecting Jews during the Holocaust, compared to those who had the opportunity to do so but chose not to risk their lives and their families. Further, they suggest that those who did protect Jews did so to reap the rewards of heroism. However, evidence does not support either of these hypotheses. Although Sarner’s (2007) claim that “one hundred percent of Jews in Albania [were] rescued from Holocaust” may be an exaggeration, there is actually very little, if any, evidence of Albanians choosing to turn Jews over to the Nazis instead of assisting them (Nidam-Orvieto & Steinfeldt, n.d.). The seeking of a heroic reputation is also hard to apply to the actions of the Righteous Among the Nations in any nation because the chances of reaping such benefits were greatly outweighed by the potential costs of rescuing Jews during the Holocaust.

Crespi brings up the very important point that just as parental manipulation consists of “conflict” between the interests of the parent and offspring, traditional parental manipulation consists of conflict between ancestors and descendants. Indeed, this is why the article presenting our mathematical formula to calculate the multigenerational consequences of traditional parental manipulation (Coe et al. 2010) calculates these for different outcomes of this conflict.

Jensen raises two important points. First, he provides a clear example of the assumption that one or more

of the conventional evolutionary explanations *must* somehow account for traditional ethical codes, even when this does not appear to be the case: “If inclusive fitness cannot explain this ancestor manipulation of descendants, what does?” Our answer, which we admittedly failed to expound upon sufficiently in this particular paper, is that even when traditional parental manipulation reduces the inclusive fitness of an individual offspring, it can increase the number of descendants over many generations and “natural selection can be most accurately measured over a large number of generations than in terms of the number of surviving children or grandchildren produced” (Alexander, 1974, p. 346; West-Eberhard, 1975, p. 29; Dawkins, 1982, p. 184). This is what leads to our “conclusion that selection would have favored individuals who were most successful at influencing the social behavior among the most distant generation of their descendants.” Jensen also calls for the need to model how traditional parental manipulation could increase the number of descendants over many generations. We are in full agreement with this position, and invite Jensen, and other readers, to help us perform such modelling. In particular, we solicit potential ways to model the evolutionary success of alternative cultural traditions that measures evolutionary success over large numbers of generations, and conceives of selection taking place between individuals and avoids preconceived notions of selection taking place within or between groups. Until skeptics of our approach produce such models demonstrating that our explanation is inaccurate, the absence of models neither strengthens nor weakens our hypothesis.

Finally, we are also in full agreement with Kim’s statement that the plausibility of our hypothesis would be greatly increased if it could account for all of the seemingly puzzling evolutionary codes of self-sacrifice that represent a “universal behavioral tendency,” instead of only accounting for the Albanian code of ethics and the concept of Besa. Indeed, we attempted to emphasize that Besa is only used as an example of a universal behavioral tendency. We apologize for not making this point clearer, and we thank Kim for drawing attention to the species-typical scope of the puzzle our paper presents to evolutionary theory.

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Fight with/for the Right: An Analysis of Power-politics in Arundhati Roy's *Walking with the Comrades*

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Abstract

The terms 'Maoist' and 'Naxalite' directly bring into one's mind the image of a man with a gun in one hand and a sickle on the other. However, a generalization of casting them as "terrorists" is one thing that one must surely question. What prompts them to take up their arms and set out to kill outsiders and destroy what we proudly flaunt as 'government's property'? Is it a form of unjustified protest or a justified resistance? In a country, that is stated to be with over 421 million people living in a more impoverished state than all of sub-Saharan Africa, stated a report that was published as a part of research in 2010 at Oxford University, what can happen if there is a threat to basic livelihood. With the advent of the so called *Corporate takeover* of the natural resources in the forests there is no doubt that the tribals in that area are afraid to lose even the limited resources that are in their control. Arundhati Roy is a writer who has always traversed the territory of the *downtrodden*, either in her most glorified, Booker-winning fiction, *The God of Small Things* or her non-fiction works such as *Listening to Grasshoppers: Field Notes on Democracy*, *The Algebra of Infinite Justice*, *Power Politics* etc. A political activist and an environmentalist, she has dealt with issues of those whom we seldom give a second thought. This particular paper explores her standpoint through *Walking with the Comrades* which is a reflection of the social, political and most importantly the economic undertones of the government's action in the contemporary context and the reaction/rebellion/resistance produced by the *other* side. The article discusses in detail the experiences of the author in Dantewada, Chhattisgarh as mentioned in the text and through her words analyse the situation of the tribals who are in constant fight for their right with the government.

Keywords: Maoist; Naxalite; Corporate takeover; Government; Terrorists

The Indian Constitution, the moral underpinning of Indian democracy, was adopted by Parliament in 1950. It was a tragic day for tribal people. The Constitution ratifies colonial policy and made the state custodian of tribal homelands. Overnight it turned the entire tribal population into squatters on their own land. It denied them their tradition rights of forest produce, it criminalized a whole way of life. In exchange for the right to vote it snatched away their right to livelihood and dignity.

Arundhati Roy, *Walking with the Comrades*

Literature has usually been a platform where ideas and ideologies are infested, investigated, intersected and explored in their sheer simplicity or utmost complexity. But for someone like Arundhati Roy, literature has probably been a source of strength and survival. Such is her belief in the content that she writes that she rejected an award from India's academy of letters because she opposes the government's policies. Gelder (Gelder, 2006) mentions that in her letter to Sahitya Akademi, she said that she did not want to accept a prize from a body linked to the government. In almost all her works, one finds a common thread of thought i.e. to highlight the plight of the marginalised. Whether *The Algebra of Infinite Justice*, *Public Power in the Age of Empire*, *Listening to Grasshoppers* etc., her focus is to reflect on how a powerful or-

ganization uses its might to straightjacket the underprivileged, and when these people from the periphery fight back, then they are labelled as “terrorists”. Specifically in *Public Power in the Age of Empire*, Roy shows a similarity between the way the governments of the US and India work: they portray a kind of illusion of democracy. There is no rule of the people; rather the whole election system is a sham which actually does not give the people any real alternative to choose. The agenda of the nation is set to meet the vested interest of the people in power or the foreign capitalists rather than meeting the needs of the people. She points out that if the government doesn’t listen to the people when they use Gandhian method of non-violence, then they are left with no alternative but to be “Gandhians with Guns”. Similarly, in her book, *Listening to Grasshoppers: Field Notes on Democracy*, Roy notes that there is a kind of correlation between the rise of Hindu Nationalism and the American “War on Terror”. Therefore, in most of her works, including *Walking with the Comrades*, she says that whenever there is talk of progress or development it is time to worry for the common people. Roy asks, almost rhetorically, “Armed with...history is it reasonable to worry about whether a country that is poised on the threshold of “progress” is also poised on the threshold of genocide?” (Roy, 2009).

In such a state, there is always a tussle of the so called “Us vs. *them*” between the two sections of society: the public and the people in power. While it can never be crystal clear what is absolutely justified, both sections strive to make their point. The dominant group uses all its might either to bring *the other* into their fold or they exterminate them. In such a case, most of the times, people in power use their intellectual power to impress them and economical power to suppress the masses. One can obviously think of French critic Michel Foucault who writes that power creates knowledge by which he meant that there are no objective truths in the world, only subjective views which are “constructed” by the use of influence and instructions. Such is the discourse of powerful people in society that whatever they say or write becomes the mighty truth that cannot be negated and the ones who negate are considered to be violating the law. In the same line of thought, French writer, Louis Althusser writes about the way the government tries to control the mind and body of its people. He says that in order for a government to continue its power it needs a tool and the tool has two aspects: a. Repressive State Apparatus (RSA) and; b. Ideological State Apparatus (ISA). In the former instance, writes Althusser, the government uses physical force in order to subjugate the working class so that the ruling class remains at the top. The latter is more subtle as it belongs to the private spheres of the people, like schools, colleges, religious institutions etc. Even here, force is used, but it is a kind of psychological force that is used to bring the people down to their knees and make them do what the ruling class wants them to do. The working class is being trained to think of themselves as inferior and hence the need for the ruling class to guide them emerges, thus, increasing the difference between the classes (Edgar and Sedgwick, 2002). Therefore, the society in which we live, the rules and norms that are present and are considered to be “normal” are the values of the dominant groups and that these rules and norms help the dominant group to control the others, as the marginalised are not considered to be under the embrace of “normalcy” (Lechte, 2001). People who subscribe to the ideas of the dominant group then are supposedly not “harmful”, but those who do not follow the ideologies of the ruling group are *the other* and therefore considered “harmful”.

Walking with the Comrades, published in 2009 by Penguin Books, is a true reflection of her conviction towards the Maoist movements. She refers to them as “Patriot of a kind” and adds that their patriotism is very complicated. According to her, the whole world has been intently watching the poor tribal people of Chhattisgarh, Orissa, Jharkhand and Lalgarh (West Bengal, India) and nowhere in the world have movements (against corporate invasion) been so big, beautiful and successful (Roy, 2010). However, it cannot be further analysed before giving a brief background of the tribals in India. In 1964, the Communist Party Marxist (CPM) split from the Communist Party of India (CPI) because of the difference in the extent of their using revolutionary politics. The CPM was very active in parliamentary politics and they desisted from armed struggle. In the 1967 elections they formed a coalition government in West Bengal with the Bangla Congress. This act of forming the government led to a crack in the party. Members of the party, especially the younger ones, who were influenced by the Chinese Cultural Revolution, blamed the top

party members and its leaders of shaking hands with the Parliamentarians. They were, in a sense, accused of betraying the revolution and the whole ethos of their political party. The demand of these separated members was of an immediate armed peasant revolution in rural areas, so that this reformation extends, slowly but surely, to all parts of India. Therefore, they launched this peasant uprising in the small “Naxalbari” area of North West Bengal. The immediate reaction from the CPM leaders was the removal of these separated members, because they were indulging in, according to CPM leaders, left-wing adventurism. These breakaway leaders were from then onwards called Naxalites (Chandra, 1989). Therefore, the term broadly refers to various groups of people. As Katoch writes:

The term ‘Maoist’ has now become part of the Indian lexicon. It refers to people in an organisation which has as its goal the overthrow of India’s constitutional structure through force and the establishment of a dictatorship on the lines enunciated by Mao Zedong in China. The term Naxalite is also used for the Maoist as the movement originated in the Naxalbari block of Siliguri subdivision in Darjeeling district of West Bengal. The social base of the movement varies in different states. At some places, it comprises peasants with small or nil landholdings and to lesser extent, middle peasants. At others, it consists of tribals. At still others, it is an amalgamation of the above, along with other marginalised sections of society. In caste terms, the base of the movement consists of lower and intermediate castes. This applies to the Hindu as well as Muslim communities. The leadership of the movement is largely from the upper castes and classes and to a large extent is Andhra Pradesh centric. To most of the common people who form part of the movement, the term Naxalite has come to represent a movement or struggle for basic rights. The testimonies convey an anti-system sentiment and suggest that the Naxalites have a fair idea of the important components of their struggle for basic rights as well as knowledge of their opponents—the government machinery, landlords, upper classes, big business houses and the like. In their self-identity, therefore, the Naxalites clearly see themselves as individuals who have chosen a path which clashes with the existing order. (Katoch, 2012)

Commentating upon the totality of the effort put by men and women both against the tribal revolution, Roy writes that there are many women who take part in this revolt against the government policies. They carry a gun in one hand and their child in the other. Shoulder to shoulder they fight alongside the men. The number of women in the tribal army, here is equal, if not more, than men. She says that the *Krantikari Adivasi Mahila Sangathan* has now 90,000 enrolled members and it could possibly be the largest women’s organization in the country (Roy, *Walking with the Comrades*, 76). One can quote the structure of the Indian army here. According to a report, “Women officers in the Indian army, navy and air force constitute only 3.3, 3.9 and 10.4 percent of the officer cadre respectively” (IANS, 2012).

The situation worsened after the Economic Reforms of 1991, “Liberalization, Privatization and Globalization (LPG)”, in which it was promised that millions of dollars would be invested in India, which would bring about a radical change in the whole Indian economic system. India, it was promised, would have “inclusive development” – bringing people from all walks of life. There is no doubt that several industries have been established, jobs have been created, economic growth has taken place but the essential question still remains the same: at what/whose expense? Where have these industries been located? On whose land have they been set up? These are the kinds of questions that have raised a furor whenever they were asked. Economic growth has taken place but what about development? Whenever there is talk of “development” governments often tend to quote our Gross Domestic Product rate and try to evade the real implication of the question. It was this issue of finding out about “development”, or rather an opposition to it by the tribals which made Roy take up her jungle journey. She wanted to find out the reasons as to what turned the oft-shy tribals into “the single biggest internal security challenge ever faced by our country” (Singh, 2010). She wanted to get first-hand experience of these people, without the lens of prejudice and rhetoric of the government and the media.

In the initial part of *Walking with the Comrades*, Roy tells us that “the area controlled by the Maoists, is the place the police call “Pakistan”. Pakistan generally has a negative connotation for the people of India. That is why killing these so-called “Pakistanis” will not lead to too much of a prick in the conscience; rather one may even be elated in eliminating them. She also brings to our notice terms like “infestation and disease and pests”, which automatically implies something not appropriate for the growth of Indian society and hence as necessary to eliminate. Referring to her visit to Dantewada, in Chhattisgarh, she says, is an oxymoron: “In Dantewada the police wear plain clothes and the rebels wear uniforms. The jail superintendent is in jail. The prisoners are free” (Roy, *Walking with the Comrades*, 2). The world which she notices is “up-side down, inside-out” (Roy, *Walking with the Comrades*, 2). The significance of it lies in the fact that these people do not wish to give to the ways of the government. According to them, government is a puppet in the hands of the multinational corporations who want them to function according to their profit making and market capturing rules and regulations. She also points out that whenever the government talks about bringing the tribals into the mainstream, it is an alarming concern for this sham of India’s “progress” comes at the cost of the displacement of thousands of tribals. There is a huge amount of resources being employed just to brainwash common civilians into believing that indeed these tribals are wild, savage beasts. The areas occupied by them are “Maoist-infested”, which implies disease or pests. “Diseases must be cured. Pests must be exterminated”, writes Roy (Roy, *Walking with the Comrades*, 11). She quotes the announcement of the then Chief Minister from the *Bhartiya Janata Party*, Raman Singh who said that “as far as his government was concerned, villagers who did not move into camps would be considered Maoists” (Roy, *Walking with the Comrades*, 52). So, even if you are an innocent citizen, just staying in the village, which has been infested with this Maoist disease, it is equivalent to being a terrorist.

She also writes that Israel’s Mossad is training 30 high-ranking Indian police officers in the techniques of targeted assassinations, to render the Maoist organisation “headless”. There’s talk in the press about the new hardware that has been bought from Israel: laser range-finders, thermal imaging equipment and unmanned drones, so popular with the US army. She says that these are the perfect weapons to use against the poor (Roy, *Walking with the Comrades*). Many observers suggest that the character of war is changing rapidly. One of the most prominent schools of thought focuses on Revolution in Military Affairs (RMA). This concept came into the limelight after the victory of America in the 1991 Gulf War. The highly advanced military technology and doctrine appeared to give the USA a piece of cake victory. These “laser range-finders, thermal imaging equipment and unmanned drones” which Roy talks about is a part of this RMA. It makes the killings almost effortless. But it must also be emphasized that in post-conventional insurgency phases in Iraq and Afghanistan, the asymmetry has produced guerrilla style conflict against the technological superiority of the coalition forces. Techniques such as guerrilla warfare and terrorism, which in earlier historical periods were employed as minor elements of a larger conventional strategy, are now being used as strategies in their own right (Baylis, 2011). And this is the strategy of the Maoists too. They are using these same strategies in this asymmetric warfare. Roy writes:

The antagonists in the forest are disparate and unequal in almost every way. On one side is a massive paramilitary force armed with the money, the firepower, the media, and the hubris of an emerging Superpower. On the other, ordinary villagers armed with traditional weapons, backed by a superbly organized, hugely motivated Maoist guerrilla fighting force with an extraordinary and violent history of armed rebellion. (Roy, *Walking with the Comrades*, 22)

She further highlights the fact that many multinational corporations, in the name of CSR- Corporate Social Responsibility, either construct a school, or a hospital to show that they care for the civilians, but this one act of good is counter balanced by ten massive acts of evil. For every life which the hospital saves, they help in exterminating hundreds, notes Roy. Unlike the way the government functions, which has its power relations set in a hierarchy, where the top person knows everything about everyone, like a Panopticon, the tribals don’t function like that. Roy writes, “there is an economy of information...Nobody is sup-

posed to know everything” (Roy, *Walking with the Comrades*, 22). This is probably what Foucault meant when he said “dispersion of power” i.e. to loosen it up.

In any case, in the ideology of “Us vs. Them”, and “either/or” many people lose their lives for no valid reason. There is hardly any news about hundreds of people, especially children who are dying due to lack of proper nutrition. Women are unable to breastfeed their children for they themselves are undernourished. Their metabolism has been very badly affected and their monthly periods have either been altered or they don’t have their menstrual periods. Men can’t go to the market and women aren’t allowed to buy even a little extra. Medicines are hardly given. All the subsidized food items are placed strategically near the police stations, which makes it more than difficult for the tribals to purchase them. It is because of such exercise of soft power that these tribals are getting disappointed and frustrated day by day. In this power struggle, even the innocent villagers are not taken into confidence.

...there’s malaria, osteoporosis, tapeworm, severe ear and tooth infections and primary amenorrhoea – which is when malnutrition during puberty causes a woman’s menstrual cycle to disappear, or never appear in the first place. There are no clinics in this forest...No doctors. No medicines. (Roy, *Walking with the Comrades*, 106)

In the same context, an observation by Bruce Hoffman, an expert in the field of terrorism and insurgency is worth citing. In his seminal book, *Inside Terrorism*, he states that language plays a very important role in determining the acts of violence. It is through the medium of language that we construct mental images and see the world. And since language is not neutral our perception of the world and the people in it can also never be neutral. There has to be a biased approach and it cannot be ignored. Terms like “demons”, “monsters”, “beasts”, “wild”, “uncultured”, etc. denote a negative image in the mind. So, when one has to exterminate them, then by the usage of such terms they are degraded to the status of animals so that our conscience does not feel guilty in killing them; because we are not killing humans; that is the main idea behind it, we are, rather, removing the excess that are not required (Hoffman, 2006).

Commenting upon the core issues of conflict between the Naxals and Government, Katoch writes, “The resource rich places attract large corporations (both public and private) also because of poor execution of laws and inadequate accountability in administration (Katoch, 2012). As a matter of fact, the moment government comes to know of any resource rich land, it tries to flex its hard power (use of military force) as well as soft power (use of psychological tactics) in order to acquire the land. Whosoever comes in between, they are labelled as “Naxals” or “left-wing terrorists”. Roy points out that the government has signed Memoranda of Understanding worth trillions of dollars with multinational corporations because of the amount and value of mineral and natural resources present in these tribal areas. She writes, “There are reports of bauxite deposits – three million tonnes – that a company called Vedanta has its eye on” (Roy, *Walking with the Comrades*, 74). Particularly in this case, the government had to find a way to acquire these resources and they were probably under enormous pressure to come up with a new plan. The plan was named Operation Green Hunt. The Indian government has announced a war against them. Almost 200,000 paramilitary was deployed along with the army. Roy points the irony of the situation when she writes: the Indian army of the world’s largest democracy is going to fight the poorest people of the world; and she also reflects upon the role of media mostly run by the advertising money of huge companies, which either dismiss the whole thing as “terrorism” or ignore it (Roy, 2012). This was the physical side of their master plan; the other side of their metanarrative was to deal with them psychologically. It was “affectionately called WHAM – Winning Hearts and Minds” (Roy, *Walking with the Comrades*, 58).

Though there are positive and logical interventions as far as the Constitution of India is concerned, there are various acts such as the “Forest Rights Act”, the “Tribal Rights Act”, the “Tribal Bill”, and the “Tribal Land Act” which protect the rights of the Scheduled areas and their rights over the natural resources in and on their lands, but these are brazenly disobeyed by the government itself. The result is that the tranquil-looking forest has transformed itself as military camp now. People know words like Cordon and

Search, Firing, Advance, Retreat, Down, Action! To harvest their crops, they need the PLGA to do a sentry patrol. Going to the market is a kind of military operation. The markets are full of *mukhbirs* (informers) from their villages whom the police have lured with money. We're told there's a *mukhbir mohalla* (informers' colony) in Narayanpur where at least 4,000 *mukhbirs* stay. The men can't go to market anymore. The women go, but they're watched closely. If they buy even a little extra, the police accuse them of buying it for Naxals. Chemists have been instructed not to let people buy medicines except in very small quantities. Low-price rations from the Public Distribution System (PDS), sugar, rice, kerosene, are warehoused in or near police stations, making it impossible for most people to buy. Such is the sordid state of affairs described that one fails to think of a solution. In a country like India, where not only the resources but also the population is enormous, striking a fine balance between the two seems more than difficult in the contemporary context. India is a diverse country and this uniqueness is to be kept in mind while making attempts to homogenize the people, i.e., treating all the villagers, who by chance live in the same village where Maoists live, as terrorists will further alienate the common people.

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ANNOUNCEMENTS

The *ASEBL Journal*, fully peer-reviewed and indexed in the MLA International Bibliography and Ebsco Host database, is usually published yearly in January. On occasion there might be a special issue. If you are interested in the journal, please visit the blog (About tab) for complete information, mission, goals, aims and scope: www.asebl.blogspot.com You may contact the editor at publisher@ebibliotekos.com, with ASEBL in the subject line, but do so only after you have reviewed the About tab, please. Sister site: www.ebibliotekos.com

Third Moral Sense Colloquium most likely late Spring early Summer 2017. Announcement, information, and details will appear on the ASEBL blog at some point in 2016.