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Implicit Puritanism in American moral cognition

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ABSTRACT

Three studies provide evidence that the judgments and behaviors of contemporary Americans are implicitly influenced by traditional Puritan-Protestant values regarding work and sex. American participants were less likely to display traditional values regarding sexuality when implicitly primed to deliberate, as opposed to intuition and neutral primes. British participants made judgments reflecting comparatively liberal sexual values regardless of prime condition (Study 1). Implicitly priming words related to divine salvation led Americans, but not Canadians, to work harder on an assigned task (Study 2). Moreover, work and sex values appear linked in an overarching American ethos. Asian-Americans responded to an implicit work prime by rejecting revealing clothing and sexually charged dancing, but only when their American cultural identity was first made salient (Study 3). These effects were observed not only among devout American Protestants, but also non-Protestant and less religious Americans.

The United States of America is a country—like all other countries—bound inexorably to its roots. Today, a wide variety of societal achievements (economic power) as well as stumbling blocks (discord in interracial relations) can be traced to events in the last four hundred years of American history. The present article is based on the premise that the roots of the America we currently know are firmly planted in the soil of some of the earliest and most influential Americans—a zealous group of Puritan-Protestants, who intended to create an inherently spiritual nation, envisioning it as a land of purity and spiritually righteous people (McNeil, 1954; Tocqueville, 1840/1990; Weber, 1904/1958).

Numerous scholars have argued that since the inception of the first New England colonies, both Protestant work values (views on work and salvation articulated by John Calvin), and the pursuit of piety through sexual purity, have been at the forefront of American culture (Landes, 1998; Sanchez-Burks, 2002). This primacy is abetted by links between the two systems of belief. A disdain for worldly sexual pleasure complements norms against spending hard earned capital.

The present research suggests the implicit influence of traditional values regarding work and sex still lingers in American minds (Sanchez-Burks, 2002, 2005; Uhlmann, Poehlman, & Bargh, 2009). Sanchez-Burks (2002) demonstrated that consistent with the Protestant work ethic, American Protestants are less spontaneously attentive to relational cues in work settings than Catholics, and Uhlmann et al. (2009) reviewed evidence of American moral exceptionalism in the domains of individualism and traditionalism. Here we argue that Americans are implicitly (and distinctly, relative to members of other cultures) affected by traditional Puritan values, such that the ethics of sexual purity are closely tied to the ethics of work and labor (Poehlman, Uhlmann, & Bargh, 2010). Because we view these implicit feelings regarding work and sexuality as stemming in part from American's Protestant-Puritan heritage, we refer to them (admittedly rather broadly) as manifestations of *implicit Puritanism*.

Our empirical predictions are based on America's cultural history (McNeil, 1954; Tocqueville, 1840/1990; Weber, 1904/1958) and theories of implicit social cognition (Dijksterhuis & Bargh, 2001; Greenwald & Banaji, 1995). However, although grounded in prior scholarship on the roots of American culture, any links drawn between the present studies and events in American's early history are admittedly speculative and theoretical rather than concrete and empirical. Our findings have a more concrete empirical basis in prior psychological research on implicit cognition.

America's unique cultural history

Almost as a rule, wealth and democracy engender secular, less traditional values (Inglehart & Welzel, 2005). Because Western European countries with Protestant roots industrialized and became wealthy prior to other cultures, they were also the first to secularize and are today among the world's *least* traditional societies (Norris & Inglehart, 2004). This contrasts sharply with the United States, which remains deeply religious and traditional in key respects. Data from the World Values Survey indicates that 96% of contemporary Americans

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believe in God, compared to 68% of Germans, 72% of the British, 53% of Swedes, 83% of the Swiss, 69% of the Norse, 62% of the French, 71% of Belgians, 69% of the Danish, and 73%, 83%, and 60% of survey respondents in Luxembourg, Finland, and the Netherlands, respectively (Inglehart, Basáñez, Díez-Medrano, Halman, & Luijkx, 2004). Seventy-five percent of Americans believe in the devil, compared to less than a third of respondents in most historically Protestant Western European countries (Inglehart et al., 2004). More than half of contemporary Americans are fundamentalists who believe the universe was created less than 10,000 years ago (Harris, 2006). As Wald (1987) points out, over half of Americans say that religion is extremely important to them personally (i.e., a maximum of "10" on a ten-point scale), but based on economic development alone, the prediction would have been that only *five percent* of Americans would see religion as so central to their lives.

One reason for this disparity (although by no means the only one) is America's unique cultural heritage as a nation founded, to a significant degree, by Puritan-Protestants fleeing religious persecution. A self-selection process, in which especially devout Protestants left England to settle in the New World, may help explain the persistent prominence of religion in American life (Bellow, 2003; Tocqueville, 1840/1990). While the early English settlers were followed by others pursuing economic goals, it was arguably the devout Protestants who laid the foundation of American culture. Because religiously devout settlers got in on the "ground-floor" of a new society, they seem to have exerted a sizeable influence over what eventually became the American creed. Persistently high rates of religiosity in turn help explain why contemporary Americans report such surprisingly traditional values regarding work and sexuality on international surveys (Baker, 2005; Inglehart & Welzel, 2005).

We therefore view American distinctiveness as driven by the *interactive* effects of history and culture on cognition. Many of the earliest Americans came from especially devout subcultures of Europe, which together with socio-historical and geographic factors such as religious persecution in Europe and the isolation of the New World, contributed to the development of the unique, heavily religious culture of early America. As a result later events such as the Industrial Revolution (which many scholars have argued was itself heavily impacted by Protestantism; Landes, 1998; McNeil, 1954; Norris & Inglehart, 2004; Weber, 1904/1958) secularized the U.S. to a lesser extent than other historically Protestant Western countries. Our studies are based on the premise that this course of events has further shaped present-day American religiosity, and further made it distinct from that of other cultures. Of course, our theory by no means argues the influence of the early Protestant-Puritans operates to the exclusion of other important historical and culture factors, such as the use of religion to rationalize slavery.

Implicit social cognition

Although the present predictions rely in part on theorizing regarding American's distant historical past, they find a strong empirical basis in contemporary research on implicit social cognition. Recent empirical advances indicate that many of our social judgments are determined by causes far removed from awareness (Dijksterhuis & Bargh, 2001; Epstein, 1994; Greenwald & Banaji, 1995; Haidt, 2001; Nisbett & Wilson, 1977; Wegner & Bargh, 1998; Wilson, 2002). People evaluate social targets not only at an explicit (deliberative and conscious) level, but also at an implicit (intuitive and automatic) level.

The term *implicit* is used to refer to cognitions that are intuitive, spontaneous, effortless, unintentional, uncontrollable, and/or unconscious (Bargh, 1994; Greenwald & Banaji, 1995; Wegner & Bargh, 1998; Wilson, 2002). However it is rare for all of these characteristics to occur together (Bargh, 1994). In the present article, we use the term implicit to refer to cognitions that are intuitive, spontaneous, effortless, and which do not require a conscious intention on the part of the social perceiver in order to occur. But the social perceiver is in many cases consciously aware of her/his cognition (e.g., negative affective responses to individuals perceived as lazy).

Importantly, implicit and explicit attitudes can diverge sharply, and implicit attitudes are highly sensitive to the cultural context (Devine, 1989). Implicit mental processes are often based on simple associations, which are readily learned from the environment (Olson & Fazio, 2001). As a result, even individuals who do not consciously endorse prevailing cultural attitudes nonetheless seem to internalize them at an implicit, intuitive level.

For example, individuals who consciously reject gender stereotypes nonetheless exhibit an implicit association between the concepts *Male* and *Career*, along with *Female* and *Family* (Nosek, Banaji, & Greenwald, 2002). Without drawing any moral comparison between religion and social stereotyping, we suggest that traditional American religious values similarly influence the judgments and behaviors of contemporary Americans. Because most Americans are religious, and religion is further a central feature of American culture and public life (Baker, 2005), we further predict that Catholics, other non-Protestants, and even individuals who are not religious are susceptible to the implicit influence of America's Puritan-Protestant heritage.

Our argument is not that American culture is religious only at an implicit level. Rather, we argue that because American culture is explicitly religious, even less religious individuals often absorb such values implicitly. This is based in part on prior research indicating both children and adults implicitly absorb their local culture (Markus & Kitayama, 1991; Nisbett, Peng, Choi, & Norenzayan, 2001; Sperber, 1985). Consistent with these ideas, the social intuitionist model (Haidt, 2001) proposes that moral judgments and behaviors are often intuitive rather than reasoned, and culturally socialized rather than individually chosen.

Another key feature of implicit attitudes and beliefs is that they obey the principle of cognitive balance (Greenwald et al., 2002; Heider, 1958). Heider's Balance Theory (1958) proposes that attitudes towards multiple targets shift to remain consistent with each other. For example, if Larry likes Sue, and Sue likes folk music, Larry's attitudes towards folk music should shift in a positive direction to remain consistent (i.e., achieve balance) with his positive attitude toward Sue. Recent empirical investigations indicate implicit attitudes likewise exhibit cognitive balance (Greenwald et al., 2002). For example, to the extent women implicitly associate themselves with the category *Female*, and associate the category *Female* with *Humanities* (as opposed to *Math*), they are significantly more likely to associate themselves with *Humanities* than with *Math*.

This leads to the prediction that Americans implicitly link traditional values regarding work and sex (Poehlman et al., 2010). According to our theorizing, as a consequence of America's cultural heritage, not only sexuality, but also hard work falls into the moral/religious domain. Historically, both sex and work values are closely linked to American cultural identity (Landes, 1998; McNeil, 1954; Tocqueville, 1840/1990; Weber, 1904/1958). These common links with morality, divine salvation, and cultural identity may bind work and sex morality into an overarching American ethos. If so, among Americans, implicitly priming work values should activate traditional sex values and vice versa. Consistent with this idea, reading about a restrictive dress code led American participants to avoid spending hard earned capital through conspicuous consumption (Poehlman et al., 2010). An implicit link between work and sex morality also led to memory errors, such that Americans falsely remembered sexually promiscuous individuals as lazy and vice versa. Comparison samples of participants from Canada and China did not exhibit these effects.

The present research

The present studies investigated the influence of traditional work and sex values on the judgments and behaviors of contemporary

Americans. Study 1 tested the hypothesis that American participants would be less likely to exhibit traditional values regarding sex in a deliberative mindset. Study 2 examined whether implicitly priming words related to divine salvation would lead Americans, but not Canadians, to perform better on an assigned work task. Study 3 sought to provide further evidence of an implicit link between work and sex morality in American moral cognition, and to directly demonstrate the role of American cultural identity in such effects. More specifically, this study examined whether implicitly priming the ethic of hard work would lead bicultural Asian-Americans to reject revealing clothing and sexually charged dancing, but only when their American cultural identity was first made salient.

Study 1

Study 1 tested the hypothesis that Americans intuitively condemn sexual promiscuity, and further that their intuitive judgments about sex are more traditional than their deliberative judgments. Americans and a comparison sample of British participants were implicitly primed with words related to intuition, deliberation, or neutral concepts using a scrambled-sentence task (Srull & Wyer, 1979). These primed concepts were designed to put participants in either an intuitive, deliberative, or baseline mindset. Subsequently, participants read about a young woman who revealed to her boyfriend that she was either promiscuous or a virgin. We expected that American participants primed with deliberation would report relatively less negative evaluations of the sexually promiscuous target (relative to the virgin) than American participants primed with words related to intuition or neutral words. Based on prior survey results indicating their low levels of religiosity and rejection of traditional attitudes (Inglehart et al., 2004), British participants were expected to exhibit comparatively liberal attitudes towards sexuality regardless of the prime condition.

Method

Fifty nine American students at Yale University and 259 British students at Oxford (mean ages = 19 and 20, respectively) who were passing through a public area agreed to take part in a brief survey. The study employed a 2 (nationality: American or British) × 3 (prime condition: deliberation, intuitive, or neutral) × 2 (target promiscuity: virgin vs. promiscuous) mixed factorial design. The first two variables were between subjects factors and the third a within subjects factor.

Participants were primed using a scrambled-sentence task (Srull & Wyer, 1979). For each of the 12 scrambled sentences, participants were presented with five words—four of which comprised a viable sentence—in a nonsense order. They were instructed to unscramble these words to make a viable sentence (while ignoring the one word that did not belong). In the deliberation prime condition, 8 of the 12 scrambled sentences contained a word relevant to deliberation: *control*, *deliberately*, *brain*, *rational*, *objective*, *logic*, *thoughtful*, and *reasoning*. In the intuition prime condition, 8 of the 12 scrambled sentences contained a word relevant to intuition: *intuition*, *emotional*, *feelings*, *automatic*, *inclinations*, *feels*, *instincts*, and *hunch*. In the neutral prime condition, the scrambled sentences contained neutral words (e.g., *gallons*, *chair*).

Participants next reported how much social respect a woman deserved who had 1) not yet had sex with anyone because she wanted to wait until she is married or 2) had sex with five men, who were either one night stands or purely sexual relationships. The scenarios describing the virgin and promiscuous target were both administered to all participants. The scenarios were completed in counterbalanced order, which had no effect on the reported results. Participants were asked to make their respect judgments on three different dimensions: their own degree of respect for the woman, the extent to which the woman's boyfriend should respect her, and the extent to which the woman deserved to respect herself (1 = *do not respect at all*, 9 = *respect very much*). These ratings were combined to form a scale of overall respect for each social target ($\alpha = .92$).

To examine whether the priming manipulation had any effects on participants' mood, they subsequently completed the Positive and Negative Affect Scale (PANAS; Watson & Clark, 1988). Next, a funneled debriefing (Bargh & Chartrand, 2000) was administered, composed of three questions designed to assess participants' awareness of the influence of the prime and their theory about how the prime may have influenced their responses.

Finally, participants reported their religion, the extent to which they considered themselves a religious person (1 = *not at all religious*, 7 = *very religious*), their political orientation (1 = *very liberal*, 7 = *very conservative*), and their gender, age, parental income, and the education level of their most highly educated parent. Seventy-nine percent of Americans self-identified as liberals, 4% as moderates, and 17% as conservatives; the respective percentages for British participants were 56%, 18%, and 26%.

Results and discussion

Priming deliberative thinking reduced the extent to which Americans condemned sexual promiscuity, while British participants were largely unaffected by the primes. With respect to scores as the dependent variable, we conducted a 2 (nationality) × 3 (prime condition) × 2 (target promiscuity) repeated-measures ANOVA, where the first two factors were treated as between subjects variables and the third factor as a within subjects variable. A reliable three-way interaction emerged between nationality, prime condition, and target promiscuity, $F(2, 308) = 4.49$, $p = .012$. The cross-cultural difference in responses to the primes remained significant controlling for variables such as religion, religiosity, political orientation, gender, age, parental income, and parental education.

The nature of the interaction can be seen in Fig. 1. When looking at American participants, we clearly see that differences in respect for the virgin vs. promiscuous target are largest in the intuitive and neutral prime conditions (Cohen's $d = 1.76$ and 1.63, respectively) and considerably smaller in the deliberate prime condition ($d = 0.29$). A 3 (prime condition) × 2 (target promiscuity) repeated-measures ANOVA revealed a significant interaction, $F(2, 308) = 6.42$, $p = .002$, confirming that differences in participants' ratings for the two social targets varied by priming condition. For Americans differences in respect were attenuated in the deliberative prime condition ($M = .62$, $SD = 3.40$), when compared with the intuitive ($M = 3.26$, $SD = 2.79$) and neutral prime ($M = 3.31$, $SD = 3.37$) conditions. Further tests revealed a significant difference between the deliberative and

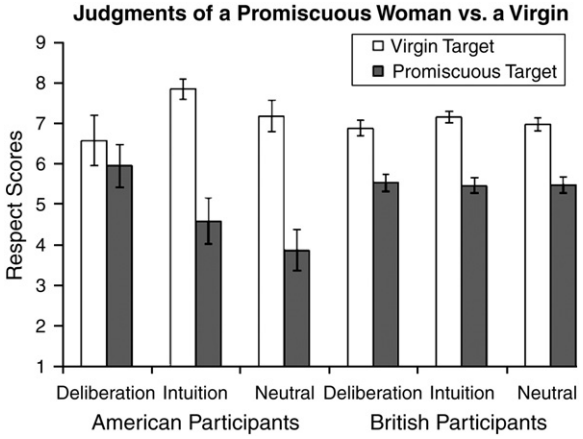

Fig. 1. American and British participants' respect for the virgin vs. promiscuous woman in the deliberation prime, intuition prime, and neutral prime conditions. Higher numbers indicate relatively greater respect. Error bars represent standard errors.

intuitive conditions, $t(308) = 3.11$, $p = .002$, as well as the deliberative and neutral conditions, $t(308) = 3.24$, $p = .001$, but not between the intuitive and neutral conditions, $t(308) < 1$. There were no effects on mood ($Fs < 1$), and no participants thought they had been influenced by the sentence unscrambling task. Further, all significant effects remained statistically significant when Protestants ($N = 16$) were removed from the analysis.

Fig. 1 also shows a considerably different pattern for British participants—these participants were relatively insensitive to priming condition, and differences in respect for the promiscuous target and virgin across the three conditions were less sizeable ($d = 0.74$, 1.09, 0.93 for the deliberative, intuitive, and neutral conditions). A 3 (priming condition) × 2 (target promiscuity) repeated-measures ANOVA did not find a reliable interaction, $F(2, 308) < 1$, confirming that differences in respect were not reliably different across the three priming conditions.

Moderator analyses

We also examined whether Protestants and especially religious or conservative participants were more likely to exhibit the effects of the priming manipulation. In other words, we tested whether religious denomination (Protestant vs. non-Protestant), religiosity, or political orientation moderated the key priming effect. Both the three-way interaction between nationality, prime condition, and potential moderator and the lower order interaction between prime condition and potential moderator are of interest.

This was done through the use of ANOVA for the religious denomination item and regressions for the religiosity and political orientation items. For the regressions, categorical items were dummy coded (American participants and the neutral prime served as the reference groups) and continuous items were mean-centered. For ease of analysis and exposition, we use the difference score between the virgin and promiscuous target as the dependent variable, rather than treat the two targets as a repeated-measures variable. Each potential moderator variable was analyzed separately (i.e., religion, religiosity, or politics).

First, we asked if Protestant participants were more likely than non-Protestants to show an effect of the primes, and whether any further interaction with participant nationality was present. However, no reliable 3-way interaction emerged between participant nationality, priming condition, and religious denomination, $F(2, 299) = 1.72$, $p = .18$. There was also no significant two-way interaction between priming condition and religious denomination, $F(2, 299) = 1.49$, $p = .23$.

Next, we looked at political orientation as a potential moderator. Again, no reliable 3-way interaction emerged between nationality, deliberation prime (vs. neutral), and political orientation, $b = -.51$, $t(289) = 0.71$, $p = .48$, or 3-way interaction between nationality, intuitive prime (vs. neutral), and political orientation, $b = 0.26$, $t(289) = 0.49$, $p = .63$. In addition, no significant 2-way interaction emerged between the deliberation prime (vs. neutral) and political orientation, $b = -.19$, $t(295) = 0.85$, $p = .40$, or between the intuitive prime (vs. neutral) and political orientation, $b = .07$, $t(295) = 0.32$, $p = .75$.

However, we did find a significant 3-way interaction between nationality, deliberation (vs. neutral), and religiosity, $b = -1.01$, $t(296) = 2.35$, $p = .02$, and marginally significant 3-way interaction between nationality, intuitive prime (vs. neutral), and religiosity, $b = -.69$, $t(296) = 1.74$, $p = .08$. These three-way interactions suggest that religion may have interacted differently with prime condition for American and British participants. To unpack these interactions, we examined American and British participants separately. However, we found no reliable 2-way interactions between prime condition and religiosity for either American or British participants, all $ps > .10$. Collapsing across American and British participants, there was also no significant 2-way interaction between priming condition and religiosity, either when comparing deliberation prime vs. neutral, $b = -.05$, $t(302) = 0.26$, $p = .80$, or intuition prime vs. neutral, $b = 0.08$, $t(302) = .48$, $p = .63$. Thus, clear evidence did not emerge that relatively religious participants (either American or British) responded significantly differently to the primes than less religious participants.

Overall, Study 1's regressions reveal relatively little evidence that individual differences in religion, religiosity, and political orientation significantly moderated our key priming effects. We address this issue at greater length in the General discussion.

In sum, implicitly priming concepts related to deliberation (relative to neutral concepts and concepts related to intuition) led American participants to exhibit less negative responses to a promiscuous woman. British participants were less likely than Americans to display a bias against the promiscuous woman, and reported similar attitudes across the three prime conditions. These results provide evidence that Americans have intuitive gut feelings about sex that are more in line with their religious heritage than are their deliberative judgments.

Study 2

Perhaps the most unique aspect of traditional Protestant beliefs is the link made between work and divine salvation. The influential Protestant theologian John Calvin believed that material success revealed that the individual was among God's chosen. While Protestants eventually did away with Calvin's doctrine of predestination, this emphasis on work as a source of divine salvation remained. Unlike religions such as Catholicism, which sanctioned the accumulation of capital by the faithful, Protestantism promoted it. Non-Western cultures also did not share this ideological belief in the relation between material success and spiritual righteousness (Fukuyama, 1995; Landes, 1998).

In Study 2, American and Canadian participants were implicitly primed with either words related to divine salvation or equally positive but non-religious words. We expected that American participants primed with salvation would subsequently perform better on an assigned work task. Contemporary America's unusual status as a devoutly religious Protestant country led to the prediction that participants from Canada, a comparatively secular culture, would not respond to the salvation prime by working harder.

As pointed out by Seymour Martin Lipset, one of the foremost scholars of American culture, differences between the attitudes and beliefs of Americans and Canadians provide some of the strongest evidence of American distinctiveness (Lipset, 1990, 1996). The United States and Canada are neighboring North American countries, and three-quarters of the population of Canada is concentrated within 100 mi of the U.S.–Canada border (National Geographic Atlas of the World, 2004). Differing responses on a work task among American and Canadian participants primed with divine salvation would therefore provide compelling evidence that American attitudes towards work are special and distinctive.

Although Canada and the U.S. share a border and common history as European colonies, there are reasons to expect Canadians will not exhibit some of the implicit Puritanism effects we hypothesize for Americans. French and Catholic influences have shaped Canadian culture to a far greater extent than the U.S. (Christie & Gauvreau, 2010; Noll, 1992). Canada further lacks the waves of early Puritan immigration that impacted the American colonies so heavily. Early Canadian colonists came in pursuit of economic goals, not religious ones (Lipset, 1990). Although most modern day Canadians do espouse some religious faith, far fewer are truly devout than in the U.S., church attendance is very low, and fundamentalism is rare (Christie & Gauvreau, 2010; Inglehart et al., 2004). Religion is further dramatically less prominent in Canadian culture and public life than in America (Christie & Gauvreau, 2010; Lipset, 1990; Noll, 1992). For instance, Canadian politicians rarely mention their faith, in sharp contrast to their U.S. counterparts, for whom religious appeals are practically mandatory.

Thus, while Canada is not an entirely secular society, it is considerably more so than America. Moreover, that Canada remains somewhat religious makes for a more conservative test of our hypothesis.

Method

One hundred eight American and 207 Canadian adults (mean ages = 31 and 35, respectively) who were passing through public parks in New York State and Ontario, Canada, respectively, agreed to take part in a brief survey. Participants were primed using a sentence unscrambling task (Srull & Wyer, 1979), either with words related to salvation (i.e., *heaven*, *salvation*, *almighty*, *redeem*, *angel*, *righteous*, *saved*, and *god*) or non-religious words pre-tested as equal in valence. After receiving the sentence unscrambling manipulation, participants were presented with an anagram task in which they were asked to make as many 4-or-more letter words out of 4 different words as they could. To frame it as a work task, the anagram portion of the study was described to participants as "a word task for you to work on."

Previous research suggests that anagram performance is a valid operationalization of work (Chartrand, Dalton, & Fitzsimons, 2007). One relevant study examined ways in which people react negatively to other people nagging them to work hard. Participants primed with the name of a significant other who nagged them to work hard responded by performing *worse* on an anagram task (Chartrand et al., 2007). This suggests that participants perceive anagram tasks as a type of work task—had they viewed the anagram task as irrelevant to the issue of working hard, then their performance on the anagrams should have been unaffected by the primes. Moreover, it suggests participants viewed the anagrams as a work task even at a relatively implicit level, since they reacted in this way even though the name of the significant other was primed subliminally.

After the anagram task, participants completed the PANAS and funneled debriefing measures, and reported their religion, religiosity, political orientation (measured only for American participants due to an experimenter error), gender, age, income, and education level. 61% of Americans self-identified as liberals, 25% as moderates, and 14% as conservatives.

Results and discussion

American participants, but not Canadian participants, worked harder when they were primed with salvation. Using anagram performance as the dependent variable, a 2×2 between subjects ANOVA found a reliable interaction between participant nationality and priming condition, $F(1, 312) = 4.05$, $p < .05$. The cross-cultural difference in responses to the salvation primes remained significant controlling for demographic characteristics such as religion, religiosity, gender, age, income, and education.

As shown in Fig. 2, American participants primed with salvation words solved more anagrams ($M = 16.65$, $SD = 12.74$) than did participants in the neutral prime condition ($M = 12.37$, $SD = 8.20$), $t(312) = 2.45$, $p = .01$. There were no effects on mood ($Fs < 1$) and no participant thought they had been influenced by the sentence unscrambling task. The effect of the salvation prime remained statistically significant when all Protestants ($n = 14$) were removed from the analysis.

In contrast, no priming effect was found for Canadian participants: anagram performance in the salvation condition ($M = 10.25$, $SD = 7.36$) was not reliably different from performance in the neutral prime condition ($M = 10.15$, $SD = 7.71$, $t(312) < 1$.[1]

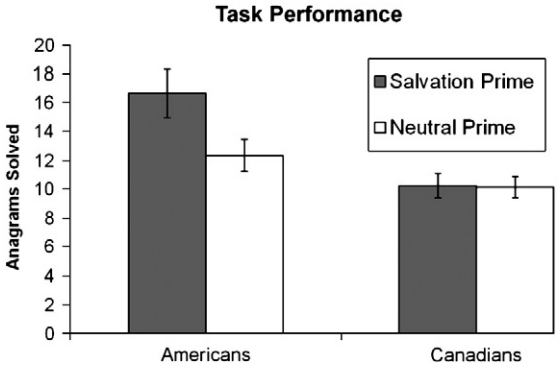

Fig. 2. American and Canadian participants' anagram performance in the salvation and neutral prime conditions. Numbers indicate the total number of anagrams solved. Error bars represent standard errors.

Moderator analyses

As in Study 1, we also examined whether our findings were moderated by religious denomination (Protestant vs. non-Protestant), religiosity, or political orientation. The analyses were similar to those used in Study 1, with ANOVA used to test moderation for religious denomination (Protestant vs. non-Protestant) and regressions for the religiosity and political orientation items.

Similar to Study 1, we found no evidence that religious denomination moderated the results, with no significant 3-way interaction between participant nationality, prime, and religious denomination, $F(1, 300) = 1.35$, $p = .25$, or 2-way interaction between prime and religious denomination, $F(1, 300) = 0.03$, $p = .86$.

We also failed to replicate the 3-way interaction with religiosity that was found in Study 1, with no significant 3-way interaction between participant nationality, prime, and religiosity, $b = .41$, $t(293) = 0.35$, $p = .73$. However, a marginally significant 2-way interaction did emerge between priming condition and religiosity, $b = -1.03$, $t(297) = 1.77$, $p = .08$. This marginal 2-way interaction indicates that collapsing across American and Canadian participants (i.e., the entire sample), religiosity marginally moderated the effects of the salvation prime in this study. Follow-up analyses indicated that although less religious participants responded to the salvation primes with improved performance on the anagram task, $b = 3.34$, $t(297) = 2.28$, $p = .02$, the priming effect did not reach statistical significance for relatively religious participants, $b = -.34$, $t(297) = 0.23$, $p = .82$. Although perhaps somewhat surprising, this pattern does directly contradict the notion that the priming effects we observe only occur among religious individuals. Given that the marginal 2-way interaction observed between religiosity and prime condition was not replicated in Studies 1 and 3, we avoid drawing strong conclusions.

The reader will recall that political orientation was only assessed for American participants. So the moderator analysis reported here only tests the interaction between priming condition and political orientation for American participants, rather than the 3-way interaction (between nationality, priming condition, and the moderator variable) that was conducted for religious denomination and religiosity. For American participants, we found a marginally significant interaction between priming condition and political orientation, $b = 2.30$, $t(99) = 1.71$, $p = .09$. An analysis of the simple slopes finds that "liberal" participants (1 standard unit below the mean) showed a large priming effect, performing better on the anagram task when primed with salvation, $b = 8.60$, $t(99) = 2.89$, $p = .005$. In contrast, "conservative" participants (1 standard unit above the mean) showed no reliable priming effect, $b = 1.41$, $t(99) = 0.48$, $p = .64$. This pattern of results runs contrary to the argument that the priming effects we observe only occur among politically conservative individuals. Because the marginally significant interaction observed between political orientation and

[1] Additional comparison samples of participants from Argentina, Germany, and Italy likewise evidenced no effect of the salvation prime on anagram performance, all $Fs < 1$. However, the sample sizes were small ($20 < Ns < 40$), precluding conclusive statistical tests.

prime condition was not replicated in Studies 1 and 3, we avoid drawing any firm conclusions.

In sum, American participants primed with salvation appeared to have worked harder on the anagram task, as suggested by the greater number of anagrams they solved. Also consistent with expectations, Canadian participants did not respond to salvation primes with improved performance on the task.

Study 3

We have argued that as a consequence of America's Puritan-Protestant heritage, not only sexuality, but also hard work falls into the moral/religious domain. While many major religious faiths condemn sexual promiscuity, Protestantism is distinct in its characterization of hard work as a moral and religious calling (Weber, 1904/1958). Historically, both work and sex values are closely linked with American cultural identity (Landes, 1998; McNeil, 1954; Tocqueville, 1840/1990; Weber, 1904/1958). Consistent with the principle of cognitive balance (Heider, 1958; Greenwald et al., 2002) these common links may bind work and sex morality into an overarching American ethos (Poehlman et al., 2010).

To control for the unmeasured demographic characteristics that can complicate interpretations of cross-cultural data, participants in Study 3 were bicultural Asian-American participants subtly primed with either their Asian cultural identity or their American cultural identity. Prior research shows priming the different identities of bicultural individuals activates associated cultural values and subtly shapes social judgments (Benet-Martínez, Leu, Lee, & Morris, 2002). Other studies demonstrate that culturally socialized implicit associations are malleable, shifting rapidly in response to contextual manipulations (see Gawronski & Bodenhausen, 2006, for a review). We therefore tested the hypotheses that 1) priming work would activate traditional sex values, but that 2) an American versus Asian cultural identity would moderate this effect. Bicultural Asian-American participants were asked to complete a questionnaire that highlighted either their Asian cultural identity or their American cultural identity (a manipulation developed by LeBoeuf, Shafir, & Bayuk, 2010). Next, participants were implicitly primed with either words related to work or neutral concepts. We hypothesized that priming work would lead bicultural Asian-American participants to reject revealing clothing and sexually charged dancing, but only when they were first led to think of themselves as American.

Method

One hundred and one bicultural Asian-Americans (mean age = 20) were recruited via social networking websites. Participants were mostly from homes where English was not the primary language spoken (25% English spoken at home, 75% another language). Over half of participants were of Korean ancestry (57%), with Chinese ancestry (25%) the only other Asian country beyond 5% representation. Consistent with prior work on biculturalism, we defined a bicultural Asian-American as an American of Asian ancestry born in an Asian country (Benet-Martínez et al., 2002). Participants had on average spent 14.59 years in the United States and left their country of birth at the age of 5.

The study employed a 2 (Asian cultural identity vs. American cultural identity activated) × 2 (work prime vs. neutral prime) between subjects design. First, participants completed an ostensive consumer survey designed to highlight either their Asian cultural identity or their American cultural identity. Participants were asked to list their favorite American (or Asian) movie, food, historical monument, song, and holiday (LeBoeuf et al., 2010).

Second, participants completed a scrambled sentence task designed to implicitly prime either work or neutral concepts. In the work prime condition, 8 of the 12 scrambled sentences included words related to work (i.e., *work*, *job*, *employed*, *worked*, and *labor*). In the neutral prime condition, the scrambled sentences contained words pre-tested as equivalent in valence to the work-related words (i.e., *chair*, *market*, *gallons*, *curtain*, and *house*).

Third, participants responded to two vignettes about sex norms interspersed among theoretically irrelevant vignettes. In the first sex norms scenario, a school principal canceled prom because of too much sexually charged dancing. In the second sex norms scenario, a school instituted a conservative dress policy prohibiting revealing clothing. Participants indicated whether they agreed with the actions taken by the principal and the school (1 = *strongly disagree*, 9 = *strongly agree*). Responses to the two sexuality related vignettes were correlated ($r = .65$) and averaged. (Results were the same when each scenario was examined separately.)

Finally, participants reported demographic information including their religion, religiosity, gender, age, political orientation, primary language spoken at home, and nation of ancestry. 41% of participants self-identified as liberals, 36% as moderates, and 23% as conservatives. 30% of participants reported relatively low levels of religiosity (i.e., marked 1–3 on a seven point scale), 15% indicated moderate religiosity (i.e., marked the scale midpoint of 4), and 56% reported relatively high religiosity (i.e., marked 5–7). In terms of specific religious faith, 60% identified themselves as Protestants, 12% as Catholics, 7% as Buddhists, 1% as Jewish, 1% as an unspecified faith, 9% as agnostics, and 8% as atheists. Participants' education level was moderately high: 12% had a high school degree or less, 65% some college, 20% a college degree, and 2% a graduate degree. Slightly more than half (57%) of participants were male.

Results and discussion

Consistent with our hypothesis, Asian-American participants primed with their American identity (but not with Asian identity) were most likely to endorse sexually-conservative policies if they had also been primed with work concepts. Using support for sexually-conservative policies as the dependent variable, a 2 (identity prime) × 2 (work prime) ANOVA revealed a significant interaction, $F(1, 97) = 4.51$, $p = .04$. As shown in Fig. 3, participants primed with their American identity were more likely to support policies prohibiting revealing clothing and provocative dancing when primed with work concepts ($M = 5.68$, $SD = 1.35$) compared to neutral concepts ($M = 4.07$, $SD = 1.66$), $t(97) = 3.12$, $p = .002$. Paralleling the results of Studies 1 and 2, this effect remained significant even after removing Protestant participants from the analysis.

In contrast, bicultural Asian-Americans who were asked questions which activated their Asian cultural identity showed no difference in their attitudes regarding revealing clothing and sexually charged

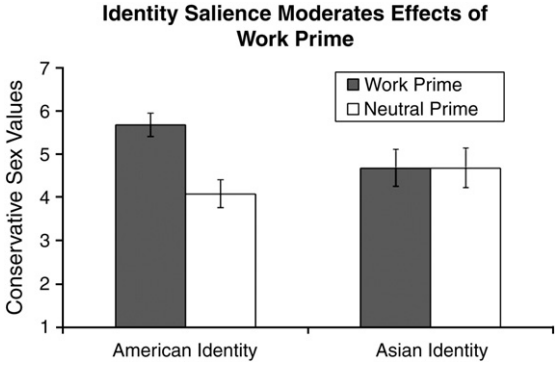

Fig. 3. Asian-American participants' judgments of restrictive sexual policies after receiving either an American or Asian identity prime, and then a work prime or neutral prime. Higher numbers indicate approval of sexually restrictive policies. Error bars represent standard errors.

dancing between the work prime and neutral conditions ($M = 4.74$, $SD = 2.13$; $M = 4.71$, $SD = 2.21$, respectively), $t(97) < 1$.

Moderator analyses

Paralleling Studies 1 and 2, we further examined whether religious denomination (Protestant vs. non-Protestant), religiosity, or political orientation moderated the results. Again, this was done similar to before, either by ANOVA (for the religious denomination item) or by regression (for the religiosity and political orientation items).

None of the three variables moderated the earlier results. There was no significant three-way interaction found between identity prime, work prime, and religious denomination, $F(1, 91) = 0.00$, $p = .98$, or two-way interaction between work prime and religious denomination, $F(1, 91) = 0.60$, $p = .44$. There was no three-way interaction found for identity prime, work prime, and political orientation, $b = 0.18$, $t(87) = 0.29$, $p = .77$, or two-way interaction between work prime and political orientation, $b = 0.12$, $t(95) = 0.43$, $p = .67$. Finally, there was no three-way interaction found for identity prime, work prime, and religiosity, $b = -.05$, $t(91) = 0.15$, $p = .88$, or two-way interaction between work prime and religiosity, $b = 0.12$, $t(95) = 0.66$, $p = .51$. Thus, these analyses revealed no evidence that individual differences in religion, religiosity, and political orientation moderated our key priming effects.

In sum, implicitly priming the ethic of hard work led bicultural Asian-American participants to condemn revealing clothing and sexually charged dancing, but only when their American cultural identity had been made salient. This provides direct evidence that American work and sex values are linked (at least in part) by virtue of their mutual association with the American cultural identity. However, further empirical research is needed to directly assess whether the American moralization of work helps explain this phenomenon.

An alternative explanation for the results of Study 3 is worth addressing. One might argue that in America the workplace is a relatively conservative environment with established gender protections and barriers to sexual harassment. However, in many Asian countries, women are still very under-represented in the workplace, hold predominantly low-status positions, and are more likely to be sexualized in the workplace. That the average American workplace has more gender-friendly and sexually-conservative standards compared to many Asian nations may be what is being primed when thinking about American culture in a work context.

However, there are several reasons to doubt that this alternative explanation can fully account for the findings of Study 3. First, the scenarios involved censure of consensual sexualized behaviors, specifically sexualized dancing and revealing clothing. Banning such acts seems more consistent with sexual Puritanism (and Study 1, in which American participants condemned a promiscuous woman), than with gender-friendly norms and barriers to sexual harassment. Second, and most importantly, this alternative hypothesis cannot account for our finding that Canadians (in contrast to Americans) do not seem to exhibit an implicit link between work and sex values (Poehlman et al., 2010). For Canadians, priming work does not appear to lead to the endorsement of conservative sex values or vice versa. It would be difficult to argue that American culture is more gender egalitarian than Canadian culture—in fact, cross-cultural studies suggest a difference in the opposite direction (Hofstede, 2001; Inglehart et al., 2004).

General discussion

The present studies shed new light on the underpinnings of American moral cognition and identify noteworthy differences between the United States and several comparison cultures. Specifically, they provide evidence that traditional work and sex values continue to implicitly shape the judgments of contemporary Americans. Study 1 showed that American participants were less likely to display traditional values regarding sexuality when implicitly primed with deliberation, relative to American participants assigned to the neutral prime or intuition prime conditions. In contrast, British participants exhibited comparatively liberal values toward sexuality regardless of prime condition. Study 2 demonstrated that subtle priming of the concept of divine salvation led Americans, but not Canadians, to perform better on an assigned work task. Moreover, among Americans, work and sex values appear implicitly linked. Study 3 found that bicultural Asian-American participants responded to an implicit work prime by rejecting revealing clothing and sexually charged dancing, but only if their American cultural identity was first made salient. The latter finding directly demonstrates the role of American cultural identity in the implicit link between work and sex morality (Poehlman et al., 2010), while controlling for demographic characteristics that can complicate interpretations of cross-cultural data.

Implicit Puritanism among non-Protestant and less religious Americans

As predicted based on prior work on implicit social cognition, which indicates that most members of a culture implicitly internalize prevailing attitudes (Greenwald & Banaji, 1995; Haidt, 2001), not only devout American Protestants but even non-Protestant and less religious Americans exhibited effects associated with traditional work and sex values. This is consistent with the argument that America's Puritan-Protestant tradition has powerfully shaped the intuitive morality of American culture. According to our theorizing it is American culture, and not necessarily personal devotion to a particular religion, that underlies these phenomena.

A limitation of this finding is that it relies on null effects—specifically, a lack of evidence that religiousity and religion moderate the relevant priming effects. Absence of evidence is not proof of absence, and methodological issues could potentially obscure the true relationship between religiosity, religion, and implicit cognitions regarding work and sexuality. One immediate concern is potentially low statistical power. However a small meta-analysis of both the present three studies and half a dozen others indicates that political orientation, religiosity, and religion do not significantly moderate implicit Puritanism effects (Poehlman et al., 2010).

Another possibility—and one that cannot be ruled out by the present studies—is that alternative measures of our individual difference variables might produce significant moderator effects. The political orientation and religiosity measures used in the present studies are both widely used in national and international surveys and correlate highly with more lengthy measures of the same constructs (Hill & Hood, 1999; Robinson, Shaver, & Wrightsman, 1999). That said, future work should use a variety of alterative measures, especially lengthy inventories with subscales assessing different components of religiosity, to explore the generality of these findings.

The "take home" conclusion we would like to leave the reader with—a conclusion not dependent on accepting the null—is that when our samples are restricted to categorically non-Protestant Americans, significant priming effects still emerge. Non-Protestant Americans condemn a promiscuous woman significantly less when primed to deliberate, perform significantly better on a work task when primed with salvation, and are significantly more likely to endorse restrictive sexual norms when primed with hard work. This finding lies at the heart of our theoretical story, and is based on the presence of significant empirical effects, not their absence.

Although we are convinced that non-Protestant Americans exhibit the implicit influence of traditional work and sex values, we do not rule out the possibility that certain devout American Protestants are even more likely to do so. Notably, American Protestants and Catholics exhibit some fascinating differences in spontaneous workplace norms (Sanchez-Burks, 2002, 2005), such that American Protestants prefer

workplace relations to be impersonal, while American Catholics favor a workplace in which personal relationships are emphasized. Although the present findings and those of Sanchez-Burks (2002) may at first appear to contradict one another, this is not necessarily the case. One notable difference between Sanchez-Burks' empirical investigations and ours is that he carefully pre-selected individuals from specifically Calvinist Protestant denominations, namely Presbyterians and Methodists. In contrast, we relied on convenience samples of undergraduates and laypersons varying greatly in choice of faith, Protestant denomination, and level of religiosity. It could be that while Americans in general implicitly conform to Puritan-Protestant values, certain devout American Protestants are especially likely to do so (as suggested by Sanchez-Burks, 2005).

Implicit racial prejudice may serve as an illustrative example. Individuals who are explicitly prejudiced against Black Americans exhibit significantly greater implicit prejudice than explicitly unprejudiced individuals (Cunningham, Preacher, & Banaji, 2001; Nosek, 2005). But at the same time, many individuals who consciously reject racial prejudice nonetheless exhibit implicit biases against Black Americans. Without drawing any moral comparison between prejudice and religion, a similar pattern may hold when it comes to moral judgments relevant to America's Puritan-Protestant heritage. When the values of carefully selected American Protestants from Calvinist denominations are compared with those of carefully selected American Catholics, significant differences in moral cognitions will likely emerge. Yet at the same time, many Catholic, non-Calvinist, non-Protestant, and non-religious Americans display intuitive moral judgments consistent with traditional Puritan-Protestant values. We leave the resolution of this important issue to future research.

More limitations and directions for future research

The present studies included only comparisons between the responses of American, British, and Canadian participants. Much more research is needed comparing Americans' implicit moral cognitions with those of members of other Western and non-Western cultures.

Another critical remaining issue is whether one must be an American to exhibit effects consistent with implicit Puritanism, or whether exposure to American culture (e.g., via the mass media) is sufficient. Perhaps a Russian primed with divine salvation would respond by working harder, had they watched enough American television and movies over the course of their life. Indeed, work on prime-to-behavior effects demonstrates it is not necessary to be a member of a stereotyped group to behave in accordance with a primed stereotype. For instance, college students primed with stereotypes of the elderly walked more slowly as they left the laboratory (Bargh, Chen, & Burrows, 1996). However, other work suggests membership in the primed group can facilitate priming effects (Wheeler, Jarvis, & Petty, 2001), suggesting that even if an identity as an American is not necessary for implicit Puritanism effects, it likely helps a great deal. Moreover, it seems unlikely there are very large percentages of Russians, Mexicans, or even Canadians who both match the degree of exposure to American media of the typical American child (Comstock & Paik, 1991; Robinson, Jacobson, & Godbey, 2000), and relatively rarely expose themselves to the media of their own country, such that they lack strong countervailing intuitions. Further, the behavior and reactions of everyday community members are likewise critical to imparting American values, something non-Americans would not be party to. Research shows that people implicitly assimilate to the attitudes of individuals they have positive everyday interactions with (Sinclair, Lowery, Hardin, & Colangelo, 2005). At the same time, identifying with a group (in this case, Americans) facilitates the adoption of implicit attitudes associated with that group (Greenwald et al., 2002). All of these provide reasons to doubt implicit Puritanism can be readily elicited in non-Americans. That said, given the work noted earlier by Bargh and colleagues, it would be highly premature to rule this possibility out, and we leave it as a critical (and extremely interesting) avenue for future research.

Future research should also seek to identify those circumstances in which an individual's personal religious faith is more likely than her/his broader culture to shape her/his implicit cognitions. We argue, based on more general principles of implicit social cognition, that the influence of a person's broader culture is strongest at an implicit level. Further, this influence can be more powerful than that of a person's explicitly endorsed beliefs (e.g., their personal religious faith). Although not ruling out the possibility of interactions with personal religion, we primarily predict the main effect of a person's broader culture with regard to implicit moral cognitions, rather than country by personal religion interactions. The data from the present studies, along with half a dozen other experiments we have conducted on this topic (Poehlman et al., 2010) are consistent with our theory. For example, American Protestants and non-Protestants exhibit implicit cognitions consistent with their religious heritage, and Canadian Protestants and non-Protestants display comparatively secular implicit cognitions. However, it seems possible that individuals from extremely religious subcultures of secular cultures, especially those with limited exposure to the broader culture, will exhibit specifically Protestant or Catholic implicit cognitions. Further, in devoutly religious societies with an even split between members of different faiths and no historically dominant religion, individuals' implicit cognitions may adhere closely to their personal faith. We leave this as another fascinating question for future empirical work.

Future work should further assess an association between work and sex morality more directly. For example, in a lexical decision task (Wittenbrink, Judd, & Park, 1997), words such as *chastity* and *monogamy* may facilitate words such as *work* and *job*. One could also use an illusory correlation paradigm (Hamilton & Gifford, 1976) to show that Americans overestimate the frequency with which words related to sexual conservatism and hard work co-occur. Individual difference in such associations may moderate some of the prime-to-behavior effects observed here, especially those in Study 3.

Finally, as noted earlier, there are significant limitations as to what can be concluded about American culture from these studies. Our studies constitute psychological rather than historical research. The psychological claim justified by these studies is that contemporary Americans exhibit striking and unusual implicit associations involving religion, hard work, and conservative sexual norms. Our predictions are driven by the theory that these associations stem from America's Protestant-Puritanism heritage, but our data do not directly test this specific historical thesis. Laboratory experiments such as ours have the virtue of isolating causal relationships between variables (e.g., religious cognition and hard work), and as such complement other scholarship on American culture, but cannot validate more speculative historical claims.

Conclusion

The unique cultural history of the United States has continuing implications for present-day moral cognition. The judgments of contemporary Americans appear to implicitly reflect traditional Protestant-Puritan values regarding sexuality and hard work. This is true not only of devout American Protestants, but also non-Protestant and less religious Americans. Such effects testify to the power of history and culture to shape the feelings, judgments, and behaviors of individual members of that culture. As noted earlier, there are important differences demonstrated in prior research between American Protestants and non-Protestants in domains like workplace norms and moral cognitions (Cohen & Rozin, 2001; Sanchez-Burks, 2002). The present results do not imply that there are no differences in the judgments of Protestants and non-Protestants. What they do

show is that one does not have to be an American Protestant to exhibit judgments and behaviors consistent with traditional Puritan-Protestant values—one may only have to be an American.

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