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Gender, Race, and Risk Perception: The Influence of Cultural Status Anxiety

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Abstract

Why do white men fear various risks less than women and minorities? Known as the “white male effect,” this pattern is well documented but poorly understood. This paper proposes a new explanation: cultural status anxiety. The cultural theory of risk posits that individuals selectively credit and dismiss asserted dangers in a manner supportive of their preferred form of social organization. This dynamic, it is hypothesized, drives the white male effect, which reflects the risk skepticism that hierarchical and individualistic white males display when activities integral to their status are challenged as harmful. The paper presents the results of an 1800-person survey that confirmed that cultural worldviews moderate the impact of sex and race on risk perception in patterns consistent with status anxieties. It also discusses the implication of these findings for risk regulation and communication.

Gender, Race, and Risk Perception: The Influence of Cultural Status Anxiety

Fear discriminates. Numerous studies show that risk perceptions are skewed across gender and race: Women worry more than men, and minorities more than whites, about myriad dangers — from environmental pollution to hand guns, from blood transfusions to red meat (Bord & Connor, 1997; Brody, 1984; Davidson & Freudenburg, 1996; Flynn et al., 1994; Gutteling & Wiegman, 1993; Jones, 1998; Kalof et al., 2002; Mohai & Bryant, 1998; Satterfield et al., 2004; Steger & Witt, 1989; Stern et al., 1993).¹

To date, no compelling account has been offered of why risk perceptions vary in this way. It is not convincing to suggest that women and minorities have less access to, or understanding of, scientific information about risk. Sex and race differences persist even after controlling for education. Indeed, sex variance exists even among scientists who specialize in risk assessment (Barke & Slovic, 1997; Kraus et al., 1992; Slovic, 1999).

Also unsatisfying is the suggestion that women are more sensitive to risk because of their role as caregivers. This argument not only fails to explain variance across race, but also cannot account for the relative uniformity of risk assessments among women and African-American *men*, who presumably are no more socially or biologically disposed to be caring than are white men (Flynn et al., 1994).

Women and African-Americans feel less politically empowered than white men and have less confidence in government authorities. These perceptions might incline them to feel more vulnerable to dangers generally. Research shows that such attitudes do play a role, but that both sex and race continue to predict risk perceptions even after these factors are taken into account (Satterfield et al., 2004).

¹ Relatively few studies have examined the risk perceptions of distinct minority groups relative to one another. However, one study has found that Taiwanese-American males, like white American males, rate health and technology risks to be low relative to white females, Taiwanese-American females, and African-Americans and Mexican-Americans generally (Palmer, 2003). Finucane *et al.* (2000b) also found that Asian males are more akin to white American males in their perception of certain risks.

In this paper, we consider a new explanation. Previous studies have found that race and sex differences in risk perception can be attributed to a discrete class of highly risk-skeptical white men, who make up around one-third of the white male population (Flynn et al., 1994). The distorting influence of this seemingly fearless group of men on the distribution of risk perceptions has been referred to as the “white male effect” (Finucane et al., 2000b). Research also has shown that these men are more likely to hold certain anti-egalitarian and individualistic attitudes than members of the general population (Finucane et al., 2000b; Palmer, 2003). This finding suggests that the white male effect might derive from a congeniality between hierarchical and individualistic worldviews, on the one hand, and a posture of extreme risk skepticism, on the other.

We tested this hypothesis with a survey based on the cultural theory of risk perception (Douglas & Wildavsky, 1982; Rayner, 1992). Our findings strongly support the conclusion that the white male effect is an artifact of variance in cultural worldviews: Sex and race *per se* did not influence risk perception among the members of our large and broadly representative sample; rather these characteristics influenced risk perception only in conjunction with distinctive worldviews that themselves feature either sex or race differentiation or both in social roles involving putatively dangerous activities.

Indeed, the results of this study complicate the conventional account of who is best described as *fearful* and who *fearless* in this setting. The effect of cultural worldviews on risk perception suggests that individuals are disposed selectively to accept or dismiss risk claims in a manner that advances the status of their cultural group. It is natural for individuals to adopt a posture of extreme skepticism, in particular, when charges of societal danger are leveled at the activities on which their own status depends. The *insensitivity to risk* reflected in the white male effect can thus be seen as the mirror image of the *status anxiety* that afflicts hierarchical and individualistic white males in contemporary American society.

But white individualistic and hierarchical males are hardly alone. Other groups, including women and African Americans as well as white men holding egalitarian and solidaristic worldviews, also suffer from status anxieties that generate distinctive patterns of risk perception. Indeed, the function risk regula-

tion plays in adjudicating competing claims for esteem helps to explain why the highly technical problems it addresses tend to provoke such impassioned and divisive political conflict (Slovic, 1999).

Our study makes it possible to chart the impact of culturally grounded status anxieties on a variety of risk perceptions. We begin with a discussion of the theory that informs the study. We then present an overview of the study itself, followed by more detailed accounts of its design, its results, and its practical implications for the regulation and communication of risk.

Culture, Risk, and Status Anxiety: Theoretical Background

We propose that variance in risk perceptions — across persons generally, and across race and sex in particular — reflects status competition among groups that subscribe to opposing cultural worldviews. This proposition derives from the convergence of two theories: Joseph Gusfield's (1968, 1986), on the role of status conflict in politics; and Douglas and Wildavsky's (1982), on the role of culture in risk perception.

Political Conflict as Status Competition

Gusfield's theory starts with the premise that individuals care not only about their material needs but also about their status — “the approval, respect, admiration or deference [they] . . . command[] by virtue of [their]. . . imputed qualities” (Gusfield, 1986, p. 14). The status a person garners, he argues, is contingent on cultural norms, which designate who is entitled to respect and deference and how they must act to earn the same. Such norms, however, are perpetually contested across subgroups that subscribe to opposing cultural ethics. Accordingly, the status enjoyed by those who subscribe to dominant cultural norms is threatened by the potential ascendancy of rival ones, the broader societal acceptance of which would redistribute prestige.

The status anxieties² of opposing cultural groups generates a distinctive form of symbolic political conflict. Traditionally dominant groups and emergent challengers alike mobilize to secure (or block) governmental action that “glorifies the values of one group and demeans those of another” — thereby “enhanc[ing] the social status of . . . the affirmed culture” at the expense of the one “condemned as deviant” (Gusfield, 1968, pp. 57-59). Important historical examples include battles over temperance and civil rights, (Gusfield, 1986); contemporary ones include the ongoing battles over capital punishment (Stolz, 1983), gay rights (Balkin, 1997), and hate crime laws (Jacobs & Potter, 1998).

Most of these policy struggles are more than symbolic, yet their behavioral consequences are often relatively small and highly ambiguous. Only the power of such policies to “express the public worth of one subculture’s norms relative to those of others” (Gusfield, 1968, p. 58) convincingly explains the selection of these issues rather than more clearly consequential ones for dispute, the polarized stances opposing cultural groups take on them, and the immense energy those groups expend in trying to determine their resolution. Fueled by culturally grounded status anxieties, “The struggle to control the symbolic actions of government is often as bitter and fateful as the struggle to control its tangible effects” (Gusfield, 1986, p. 167).

Culture and Risk Perception

Douglas and Wildavsky (1986) maintain that cultural norms shape individual attitudes toward putative dangers. Cultural norms have this effect in part because they inform moral judgments of “what dangers should be feared most” and “what risks are worth taking” (Douglas & Wildavsky, 1982, p. 6). But just as important, cultural norms enter into the cognitive and social processes by which individuals identify which dangers and risks are genuine. “Dangers are selected for public concern according to the strength and direction of social criticism” (Douglas & Wildavsky, 1982, p. 7). It is much easier to believe

² We use the concept of “status anxiety” in the manner that Gusfield (1986) and his expositors have used it to characterize the motivations associated with a certain type of mass political or social movement (see generally Balkin, 1997; Hunt, 1999). The same usage appears in Hofstadter (1955), on whom Gusfield drew heavily (Voss-Hubbard, 1999). Neither Hofstadter nor Gusfield attempted to connect these motivations with concrete psychological states within individuals. As we take up in the Discussion section, there are a number of cognitive and social mechanisms through which cultural worldviews might influence risk perception, and we propose additional research to identify with precision which ones in fact do.

that what's noble is benign, and what's base dangerous, than vice versa. Moreover, if one has any doubt, one is likely to trust the word of those who share one's values—and who are similarly predisposed to believe that activities are risky or safe, beneficial or deleterious, depending on their conformity to cultural norms.

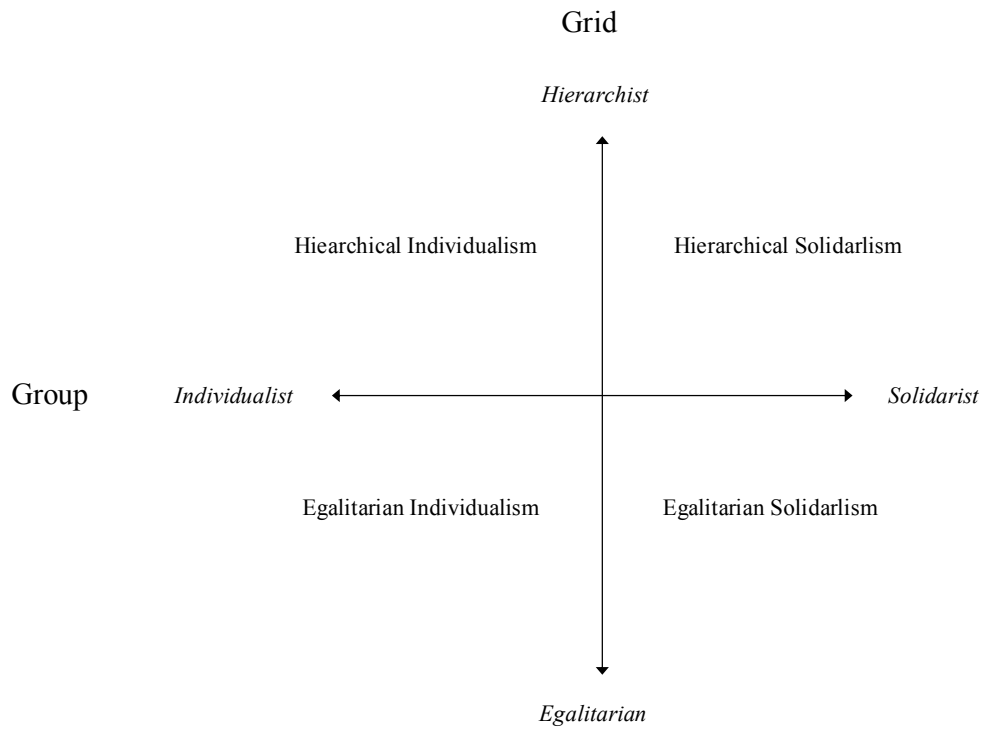
Douglas and Wildavsky, like Gusfield, depict cultural norms as contested. Using Douglas' (1970) “group-grid” typology, the cultural theory of risk classifies competing sets of norms, or “worldviews,” along two cross-cutting dimensions (Figure 1). The group dimension represents the degree to which “the individual's life is absorbed in and sustained by group membership” (Douglas, 1982, p. 202). Those with a low group or *individualistic* orientation expect individuals to “fend for themselves and therefore tend to be competitive”; those with a high group or *solidaristic* worldview assume that individuals will “interact frequently . . . in a wide range of activities” in which they must “depend on one another,” a condition that “promotes values of solidarity” (Rayner, 1992, p. 86). The grid dimension measures the pervasiveness and significance of social differentiation within a worldview. Persons who have a high grid or *hierarchical* orientation expect resources, opportunities, respect and the like to be “distributed on the basis of explicit public social classifications, such as sex, color, . . . holding a bureaucratic office, [or] descent in a senior clan or lineage” (Douglas, 1985, p. 6). Low grid orientations value “an *egalitarian* state of affairs in which no one is prevented from participating in any social role because he or she is the wrong sex, or is too old, or does have the right family connections” and so forth (Rayner, 1992, p. 86).

Within any community, according to this theory, discrete groups of like-minded persons can be expected to form within the interior of each quadrant demarcated by the group and grid typology (Douglas, 1982; Thompson, Ellis, & Wildavsky, 1990). Thus, although worldviews can be compared independently along each dimension (“hierarchy vs. egalitarianism,” “individualism vs. solidarism”), conflicts are likely to be particularly sharp among outlooks that combine different features of both (e.g., “hierarchical individualism vs. egalitarian solidarism,” or “hierarchical solidarism vs. egalitarian individualism”).

One matter about which there is likely to be such conflict is risk regulation. Persons who are relatively egalitarian and solidaristic are naturally sensitive to environmental and technological risks, the re-

Figure 1

Group-Grid "Worldview" Typology



duction of which justifies regulating commercial activities that produce social inequality and legitimize unconstrained self-interest. Those who are more individualistic predictably dismiss claims of environmental risk as specious, in line with their commitment to the autonomy of markets and other private orderings. So do relatively hierarchical persons, who perceive assertions of environmental catastrophe as threatening the competence of social and governmental elites (Douglas & Wildavsky, 1982; Wildavsky & Dake, 1990).

On its surface, the dispute is over competing claims of threats and dangers. But because the positions people take reflect and reinforce their cultural worldviews, disputes over environmental risks are in essence “the product of an ongoing debate about the ideal society” (Douglas & Wildavsky 1982, p. 36). Building on Douglas’s and Wildavsky’s work, numerous empirical studies have shown that cultural worldviews do indeed powerfully explain variance in individual perceptions (lay and expert) of various types of environmental and technological hazards (Dake, 1991; Ellis & Thompson, 1997; Gyawali, 1999; Jenkins-Smith & Smith, 1994; Jenkins-Smith 1996; Marris *et al.*, 1998; Peters & Slovic, 1996; Steg & Sievers, 2000; Slovic *et al.*, 1999; Poortinga *et. al.*, 2002; Wildavsky & Dake, 1990).

Risk Conflict as Political Status Competition

There is an obvious affinity between Gusfield’s theory of politics and Douglas and Wildavsky’s theory of risk perception. Insofar as the clash between cultural worldviews animates political disputes over risk-regulation, those disputes will take the form symbolic status competitions. Hierarchs and egalitarians, individualists and solidarists, can all be expected to respond to claims of risk in a way that affirms their group norms and denigrates their adversaries’. More specifically, individuals who belong to one cultural group can be expected to be receptive to claims of danger directed at activities that underwrite the status of an opposing cultural group, whose members, to protect their own status, can be expected to form attitudes of extreme skepticism toward those same claims.

From this perspective, it would be perfectly natural to expect variance in risk perceptions across sex and race. Insofar as hierarchical, egalitarian, individualistic, and solidarist worldviews correlate with

demographic characteristics, we should expect to see demographic variation in risk perception, at least until individuals' cultural worldviews are taken into account.

But even once worldviews are controlled for, we might still see race or sex differences of a distinctively cultural nature. Particular sets of cultural norms are likely to feature sex and race differentiation in the social roles that confer status. This is especially likely to be so for high-grid or hierarchical norms, which explicitly tie obligations and entitlements, goods and offices, to conspicuous and largely immutable characteristics such as "kinship, race, gender, age, and so forth" (Rayner, 1992, p. 86). As a result of such role differentiation, status-conferring activities are likely to vary for men and women, and of whites and minorities. If this is so, the occasion for status-advancing forms of risk-skepticism or risk-receptivity will vary across sex and race, too, depending on whose status—men's or women's, whites' or African-Americans'—is being underwritten (or undermined) by a putatively dangerous activity.

This general hypothesis is fortified by an ample ethnographic literature that chronicles status anxiety in contemporary society. Changes wrought by economic development and egalitarian social movements have provoked frustration and resentment, as well as organized counter-movements, on the part of individuals who subscribe to traditional, hierarchical norms. The sites of such discontent, however, are clearly sex specific. For women, the location of status anxiety is primarily domestic: Women who have dedicated themselves to mastering family roles, including motherhood, sense that they have been eclipsed in social esteem by women who successfully occupy professional roles (Luker, 1984; Ginsburg 1989). For men, the locations of status anxiety are more diffusely distributed: They bridle at the perceived denigration of competitive and stratified modes of organization within the workplace, and at the creeping homogenization of male and female household responsibilities; they bemoan the perceived decline of respect afforded to traditionally male-dominated institutions such as industry and the military; and they fret about building hostility toward prototypically male pastimes such as hunting and contact sports (Hochschild 1990; Newman 1999; Faludi, 1999). Because the settings in which men and women experience status anxiety vary, status-protective risk perceptions will vary for men and women as well.

Overview of the Current Study

We have suggested a theory that connects variance in risk perception to culturally grounded status competition. If this account is correct, risk perception can be expected to vary across individuals of diverse cultural orientations in a manner supportive of the cultural outlooks to which they subscribe. In addition, risk perceptions can be expected to vary *within* cultural groups: Men and women, whites and blacks, will form different attitudes toward risk if *either* differences in cultural worldviews strongly correlate with these characteristics *or* particular cultural worldviews prescribe sexual or racial differentiation in social roles relating to putatively dangerous activities.

We designed a study to test these hypotheses. As discussed in more detail in the Method section, a telephone survey was administered to a large and broadly representative national sample. We measured the subjects' cultural worldviews using two independent scales: "Solidarism-Individualism," which was designed to reflect the "group" dimension of the Douglas typology; and "Egalitarianism-Hierarchy," which was designed to reflect the "grid" dimension. We also gathered information on various other individual characteristics that might potentially influence risk perceptions. It was anticipated that these measures would be used as independent variables in data analysis. For dependent variables, the survey instrument elicited evaluations of three types of risks pertinent to our hypotheses: environmental risks, gun risks, and abortion risks.

Environmental Risk Hypotheses

Perceptions of environmental danger are the central phenomena of inquiry for the cultural theory of risk and are well-known to reflect race and sex variance. We hypothesized, consistent with Douglas and Wildavsky (1982), that relatively hierarchal and individualistic respondents would be the least concerned with environmental risks, whereas egalitarian and solidaristic respondents would be the most concerned.

We also hypothesized that differences in how environmental risks are rated by men and women and by whites and blacks would derive from variance along the grid or Egalitarianism-Hierarchy dimen-

sion of cultural outlook. Within a hierarchical worldview, women are primarily assigned to domestic roles, men to public ones within civil society and within the government. Accordingly, to the extent that assertions of environmental risk are perceived as symbolizing a challenge to the prerogatives and competence of social and governmental elites (Douglas & Wildavsky, 1982), it is *hierarchical men* (particularly white ones) who have the most status to lose, and who are thus most likely to form an extremely dismissive posture toward asserted risks.

For persons of an individualist orientation, market roles are likely to be seen as status-conferring for both men and women, and for both whites and minorities. Accordingly, there should be minimal sex or race variance among individualists, who are likely to be uniformly skeptical about assertions of danger directed at commercial activities. Nor should there be sex or race variance among persons of a relatively egalitarian or solidaristic worldview, for whom concern about the danger of commercial activities is likely to be ubiquitous.

Gun-Risk Hypotheses

The gun-control debate can be framed as one between competing risk claims. Control proponents argue that too little control increases the risk of gun violence and accidents (e.g., Cook & Ludwig, 2000), whereas control opponents argue that too much control risks depriving innocent persons of the ability to defend themselves from violent criminals (e.g., Lott, 2000).

We hypothesized that which of these risks individuals find more important would turn on their cultural orientation. Persons of hierarchical and individualistic orientations should be expected to worry more about being rendered defenseless because of the association of guns with hierarchical social roles (hunter, protector, father) and with hierarchical and individualistic virtues (courage, honor, chivalry, self-reliance, prowess). Relatively egalitarian and solidaristic respondents should worry more about gun violence because of the association of guns with patriarchy and racism and with distrust of and indifference to the well-being of strangers (Kahan & Braman, 2003a).

It is well documented that men and whites view guns more favorably than do women and African-Americans (e.g., Smith, 2000). We hypothesized that these disparities, too, would derive from differences in cultural orientation. The social roles that guns enable and the virtues they symbolize are stereotypically *male* roles and virtues (Buckner, 1994). Moreover, “in the historic system of the South, having a gun was a white prerogative,” making gun ownership an enduring “symbol of white male status” in particular (Hofstadter, 1970, p. 84). Accordingly, it is individualistic and hierarchical white males who have the most status to lose by regulation of guns and who should therefore form the most skeptical attitude about asserted gun risks. There should not be significant sex or race variation, we predicted, among individuals who are relatively egalitarian and solidaristic, who should uniformly rate gun risks as serious.

Abortion-Risk Hypotheses

We selected the health risk posed by abortion to test the generality of the hypothesized influence of cultural status anxiety on risk perceptions. Hierarchical and individualistic white men are not the only cultural subgroups facing threats to their status. Hierarchical women are experiencing a similar challenge as norms conferring status on women who successfully occupy professional roles have come to compete with and perhaps overtake traditional patriarchal norms that assign status to women for occupying domestic roles. This, according to Luker (1984), is the status conflict that informs political dispute over abortion, the free availability of which is thought to symbolize the ascent of egalitarian and individualist norms over hierarchical ones that celebrate motherhood as the most virtuous social role for women.

Conforming their factual beliefs to their cultural commitments, relatively hierarchical individuals, we predicted, would see abortion as more risky than persons who are relatively egalitarian and individualistic. Moreover, because they are the ones who lose the most from abortion’s symbolic denigration of motherhood, *hierarchical women*, we anticipated, would be the most receptive of all to the claim that abortion is dangerous. We predicted that *egalitarian women*, and particularly *egalitarian individualistic women*, would see abortion as safe, in line with their commitment to norms that confer status on women who master professional roles.

Method

Participants and Procedure

The sample consisted of 1,844 United States residents 18 years of age or older. Subjects were contacted in a nationwide, random-digit-dial telephone survey conducted between June and September, 2004. To facilitate investigation of racial variance in risk perception, the sample contained an African-American oversample of 242 persons. Overall, there were 519 white male subjects, 707 white female subjects, 153 black male subjects, and 254 black female subjects. The mean age was 39. The average interview length was approximately 21 minutes. Conservatively estimated, the survey response rate was 42%, and the cooperation rate was 59%, which means that roughly six-in-ten of those identified as eligible respondents completed the survey.³

Measures

Reliability and descriptive statistics for principal measures appear in Table 1.⁴

Demographic, personality, and political characteristics. In addition to soliciting respondents' sex, race, and age, the survey collected data on other individual characteristics that have been found to correlate with risk perceptions. These include demographic characteristics such as education level, household income, religious affiliation, and the type of community in which respondents grew up (assigned the variable label RURAL_CHILD) and currently reside (RURAL_ADULT). They also include a general predilection for risk taking, which we measured with a two-item "sensation-seeking" scale (SENSE-SEEKING) that has been shown to be a strong and reliable predictor of individuals' propensity to engage in personally hazardous behavior (Stephenson *et al.*, 2003). Because political opinions might also be

³ We used the American Association for Public Opinion Research response rate version RR3 and cooperation rate COOP1. RR3 estimates what proportion of contacts with unknown dispositions were, in fact, eligible for the survey. Full specification of these formulae is available at <http://www.aapor.org/pdfs/newstandarddefinitions.pdf>, and the estimation procedures are available on request from Northwest Survey & Data Services. The survey collected various types of data. We discuss here only those data pertinent to this study.

⁴ All analyses were conducted in SPSS 12. However, we avoided use of SPSS's missing data options (von Hippel, 2004). Instead, missing data were imputed through multiple imputation with Stata using the MICE (multivariate imputation by chained equations) module (Royston, 2004). Analyses of the resulting data sets were combined and analyzed based on the formulae presented in King *et al.* (2001), and Rubin (1987).

Table 1

Alpha Reliabilities, Means, and Standard Deviations for Principal Study Measures

Measure	No.		Min	Max	<i>M</i>	<i>SD</i>
	Items	α				
Egalitarianism-Hierarchy	16	.81	1	5	2.38	.47
Solidarism- Individualism	16	.77	1	5	2.70	.33
Environmental Risk Perception	3	.72	1	5	3.10	.62
Gun-Risk Perception	8	.87	1	5	2.62	.61
Abortion-Risk Perception	1	--	1	5	2.63	.87
Sense-Seeking	2	.73	1	5	1.29	.55
Conservative	2*	--	1	7	4.25	2.03
Democrat	1	--	1	5	3.17	1.05
Female	1	--	0	1	.57	.49
Black	1	--	0	1	.22	.42
Age	1	--	18	95	48.66	16.99
Income	1	--	1	9	5.27	2.80
Education	1	--	2	9	5.60	1.66
Catholic	1	--	0	1	.21	.41
Protestant	1	--	0	1	.41	.49
Rural Adult	1	--	0	1	.17	.38
Rural Childhood	1	--	0	1	.23	.42

* One item measuring party identification and another measuring strength of affiliation were combined to form a single composite measure.

thought to influence attitudes toward risk, respondents were asked to characterize their political views on a conventional seven-point ideology scale (CONSERVATIVE) ranging from “extremely liberal” to “extremely conservative.” They also identified their party affiliation, if any, and rated its intensity on a 5-point scale (DEMOCRAT) ranging from “strong Republican” to “strong Democrat.”

Cultural worldviews. The survey contained 32 worldview items (see Appendix), consisting of statements to which respondents indicated their level of agreement or disagreement on a four-point scale. Item development consisted of the adaptation of items used in previous studies (including Dake, 1991; Ellis & Thompson, 1997; Jenkins-Smith 1996; Peters & Slovic, 1996), as well as the creation of new items based on focus-group discussions and survey pretesting.

The statements were intended to form (and did form) two discrete and reliable scales: Solidarity-Individualism and Egalitarianism-Hierarchy. The Solidarity-Individualism scale measured concern for individual versus collective interests (e.g., “The government should do more to advance society’s goals, even if that means limiting the freedom and choices of individuals”), as well as how responsibility for meeting individual needs should be allocated between individuals and the community (e.g., “Too many people today expect society to do things for them that they should be doing for themselves”). The Egalitarianism-Hierarchy scale measured attitudes toward group stratification (e.g., “We have gone too far in pushing equal rights in this country”) and toward deviance from dominant norms and roles (e.g., “It’s old-fashioned and wrong to think that one culture’s set of values is better than any other culture’s way of seeing the world.”). We computed continuous worldview scores (INDIVIDUALISM and HIERARCHY) by averaging the items for each scale, with high scores indicating a more individualistic and a more hierarchical orientation, respectively.

Within our sample, worldviews varied significantly along demographic lines. As reflected in Table 2, white respondents were significantly more hierarchical and individualistic than African-American ones. White males were the most hierarchical and individualistic of all. Notably, sex variation was confined to whites; there was no significant difference in the worldview scores of African-American men and women on either scale.

Table 2

Worldview Scores for Demographic Groups

	Hierarchy	Individualism
	<i>M (SD)</i>	<i>M (SD)</i>
White Men	2.55 _a (.48)	2.80 _a (.36)
White Women	2.40 _b (.49)	2.69 _b (.33)
Black Women	2.18 _c (.34)	2.60 _c (.25)
Black Men	2.18 _c (.33)	2.57 _c (.28)

Distinct alphabetic subscripts indicate significant differences ($p < .01$) between groups within a given column.

Table 3

Percentage of Demographic Groups Holding Specified Worldviews

	Hierarchical		Egalitarian.	
	Individ.	Solid.	Individ.	Solid
White Male	49%	19%	13%	20%
White Female	31%	22%	18%	29%
Black Male	8%	14%	19%	58%
Black Female	11%	18%	22%	50%

To facilitate analysis, we also assigned individual respondents to cultural groups. We thus designated respondents as either “Hierarchs” or “Egalitarians,” and as either “Individualists” or “Solidarists,” depending on the relationship of their scores and the median score on each scale. Consistent with the expectation that coherent groups tend to form in the quadrants delineated by the group-grid framework (Douglas, 1982; Thompson, Ellis, & Wildavsky, 1990), we classified respondents as either “Hierarchical Individualists,” “Hierarchical Solidarists,” “Egalitarian Individualists,” or “Egalitarian Solidarists” depending on where their scores lie in relation to the median scores of both scales.

Table 3 identifies the percentages of various demographic groups that fall into these categories. White men were strikingly hierarchical and individualistic: Nearly half of them (49%) qualified as Hierarchical Individualists. In contrast, 58% of African-American men, and 50% of African-American women can be characterized as Egalitarian Solidarists. White women were more evenly divided along both worldview dimensions.

Environmental risk perceptions. The survey solicited evaluations of three putative environmental risks: nuclear power generation, global warming, and environmental pollution generally (see item wording in Appendix). Participants rated their perception of these risks on a four-point scale based on how strongly they agreed or disagreed that the risk in question was serious. Responses were averaged to form a single environmental-risk perception scale, with higher scores indicating greater concern about environmental risks.

Gun risk perceptions. Those involved in the gun debate disagree about the relative magnitude of the risks associated with insufficient and excessive regulation of guns. Accordingly, to test their perceptions of these competing risks, respondents indicated their level of agreement or disagreement with opposing statements about the impact of guns in either promoting or undermining personal and societal safety. Because risk evaluations are also frequently qualitative and not just quantitative in nature (Slovic et al., 1979), respondents were also asked to react to opposing “dreadedness” items: One asked them to relate how disturbing they found the prospect that they or a loved one might be injured or killed as a result of insufficiently strict gun control laws; the other asked them to relate how disturbing they found the

prospect that overly strict gun control laws might interfere with their use of firearms to defend themselves or loved ones from attack. Finally, two opposing items measuring respondents overall attitudes to gun control were included. Responses were averaged into a single gun risk perception scale, with higher scores indicating the view that gun ownership is dangerous to both owners and society and a lower score the view that gun ownership makes both owners and society as a whole safer (see Appendix).

Abortion risk perception. We measured respondents perceptions of the risk of obtaining an abortion by asking them to state the strength of their agreement or disagreement with the proposition, “Women who get abortions are putting their health in danger.”

Statistical Methods and Power

We anticipated performing a series of statistical analyses for each type of risk perception. Preliminary analysis would consist of the comparison of group means to determine the distribution of risk perceptions across demographic and cultural groups. The primary analyses would consist of multivariate regression tests aimed at measuring the influence of cultural worldviews on risk perceptions controlling for other influences.

To test the hypothesized cultural specificity of race and gender variance, we anticipated using multivariate regression analysis to determine whether gender and race interact with cultural worldviews and the extent to which such interactions explain the white male effect. Accordingly, we constructed a series of interaction variables: FEMALE_x_H and FEMALE_x_I, which were computed by multiplying respondents’ sex scores by their HIERARCHY and INDIVIDUALISM scores, respectively; BLACK_x_H and BLACK_x_I, which were computed by multiplying respondents’ race scores by their HIERARCHY and INDIVIDUALISM scores, respectively; and BLACK_x_FEMALE, which was computed by multiplying their sex and race scores. We also constructed a set of dummy variables to be used to measure the extent to which sex and race variation within the sample as a whole could be attributed to the extreme views of particular groups. These included D_HIERWHITEMALE, which was coded “1” for white male Hierarchs and “0” for all other respondents; D_INDWHITEMALE, which was coded “1” for white male Individualists and “0” for all other respondents; D_INDMALE, which was coded “1” for male

Individualists of all races and “0” for all other respondents; and D_HIERFEM, which was coded “1” for female Hierarchists and “0” for all other respondents.

Because we hypothesized that sex and gender variance would be culture specific, we anticipated testing for the *absence* of significant demographic variance after appropriately controlling for cultural worldviews and related interaction effects. Our sample of 1844 respondents had sufficient statistical power to detect small effect sizes (*e.g.*, $r = .10$) at a significance criterion of .01 in all anticipated multivariate regression analyses (Cohen, 1988). Accordingly, nonsignificance findings in these analyses are not properly attributed to Type II error. Subsample size varied considerably for group means comparisons, but was generally sufficient to detect moderate effect sizes ($d \geq .5$) at a two-tailed significance level of .05. Power calculations are noted when considerably smaller subsamples yield nonsignificant results of interest.

Results

Environmental Risk

Means analyses. As reflected in Table 4, environmental-risk perceptions displayed the expected “white male effect.” Whites of both sexes rated environmental risks as less serious than did African Americans. White men viewed them as the least serious of all. Sex variance was significant among whites but not among African-Americans.

Environmental risk perceptions also displayed the anticipated relationship with cultural worldviews. Egalitarians and Solidarists were uniformly (and significantly) more concerned about environmental risks than were Hierarchs and Individualists (Table 4). The least concerned were Hierarchical Individualists, and the most concerned were Egalitarian Solidarists.

When risk-perceptions were examined for groups defined by combinations of demographic characteristics and cultural worldviews, the “white male effect” turned out to be highly culture specific (Table 5). African American male Egalitarian Solidarists reported the most concern with environmental risk. However, there was no significant, difference between their score and the score of any other Egalitarian

Table 4

Environmental Risk Perception by Demographic and Cultural Groups

	<i>M (SD)</i>		<i>M (SD)</i>
White Men	2.83 _a (.67)	Hierarchical Individualists	2.80 _a (.67)
White Women	3.13 _b (.58)	Hierarchical Solidarists	3.06 _b (.59)
Black Women	3.31 _c (.49)	Egalitarian Individualists	3.23 _c (.62)
Black Men	3.33 _c (.51)	Egalitarian Solidarists	3.35 _d (.56)

Distinct alphabetic subscripts indicate significant differences ($p < .01$) between groups within a column.

Table 5

Environmental-Risk Perception by Combinations of Demographic Characteristics and Cultural World-views

	Hierarchical		Egalitarian	
	Individ.	Solid.	Individ.	Solid.
	<i>M (SD)</i>			
White Male	2.61 ^a _a (.65)	2.80 ^b _a (.61)	3.10 ^c _a (.65)	3.23 ^c _a (.57)
White Female	2.90 ^a _b (.60)	3.07 ^b _b (.58)	3.28 ^c _b (.58)	3.35 ^c _a (.52)
Black Male	3.21 ^a _c (.54)	3.33 ^a _c (.57)	3.25 ^a _{a,b} (.53)	3.38 ^a _a (.50)
Black Female	3.31 ^a _c (.55)	3.27 ^a _c (.47)	3.30 ^a _{a,b} (.53)	3.34 ^a _a (.52)

Distinct superscript notations indicate significant differences ($p < .05$) between groups across rows; distinct subscript notations indicate significant differences ($p < .05$) between groups within columns.

Solidarist group including white male Egalitarian Solidarists. There was also no sex variance among Egalitarian Solidarists. In contrast, among Hierarchal Individualists, sex and race disparities were pronounced. These patterns conform to the hypothesized relationship between the “white male effect” and the congeniality of extreme risk skepticism to hierarchical and individualistic white men.

Multivariate regression analyses. To disentangle the impact of cultural worldviews from other influences, we performed a series of multivariate regression analysis as reported in Table 6. Model 1 includes as explanatory variables numerous individual characteristics — including race, sex, age, household income, tastes for risk taking, and political ideology and affiliation — that were expected to affect environmental risk perception. Model 2 adds the cultural worldview scales. Their inclusion increased overall explanatory power by nearly 30%. Each worldview variable, moreover, was significant and had the predicted sign: The more hierarchical and less egalitarian respondents’ worldviews became, the less seriously they took putative environmental risks; the more individualistic and less solidaristic their worldview, the less concerned they were.

Model 2 is also suggestive of the contribution that cultural worldviews make to explaining demographic variance in risk perception. Indeed, the significant influence of being African-American on risk perception disappeared once cultural orientation was taken into account. In other words, race variance in environmental risk perceptions was attributable to the disproportionately egalitarian and solidaristic worldviews of African-Americans

Sex remained a significant predictor after cultural worldviews were taken into account. This result, however, risks obscuring a more subtle relationship between sex and cultural orientation. Our hypothesis was that the influence of sex on environmental-risk perception is an artifact of differentiation in roles specific to a hierarchical cultural orientation. The regression reported in Model 2 could mask such an effect because it assesses the impact of sex on environmental risk perceptions when cultural worldviews are held constant at their means (Aiken & West, 1991). If sufficiently large, sex variation specific

Table 6

Environmental-Risk Perception Regression Models

Model	1	2	3	4
FEMALE	.14**	.11**	-.39*	.03
BLACK	.05*	.02	.02	.02
AGE	-.10**	-.08**	-.08**	-.09**
INCOME	-.02	-.01	-.01	-.01
EDUCATION	-.02	-.08**	-.08**	-.04
SENSE-SEEKING	-.03	-.02	-.02	-.02
CONSERVATIVE	-.19**	-.06	-.05*	-.16**
DEMOCRAT	.26**	.18**	.18**	.24**
INDIVIDUALISM		-.09**	-.12**	
HIERARCHY		-.27**	-.33**	
FEMALE_x_I			.25	
FEMALE_x_H			.24**	
D_HIERWHITEMALE				-.21**
Adjusted R ²	.21**	.27**	.27**	.24**

Note. $N = 1844$. The dependent variable in each model is perceived environmental risk. Coefficients are standardized beta weights. * $p \leq .05$, ** $p \leq .01$.

only to persons of a hierarchical orientation could produce the misleading appearance of a generalized sex effect within the whole sample.

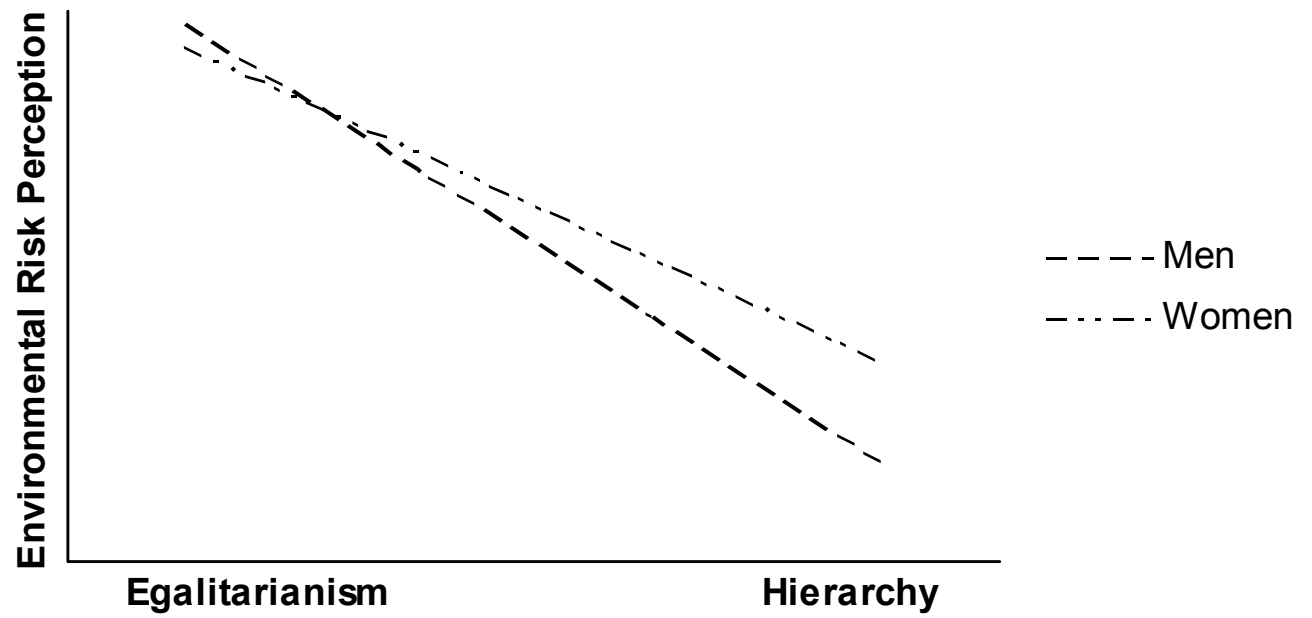
Accordingly, we examined whether the impact of sex on environmental risk perceptions was, in fact, conditional on individuals' cultural orientations. Model 3 (Table 6) adds the sex-culture interaction variables. The significance of FEMALE_x_H shows that there was an interaction between sex and Egalitarianism-Hierarchy. In other words, variance along this dimension of worldview did *not* exert the same influence on men's and women's respective perceptions of environmental risk. Rather, as the positive coefficient associated with FEMALE_x_H conveys (Aiken & West, 1991), women discounted environmental risk *less* than men as their respective orientations became more hierarchical. Consistent with our hypothesis, the nonsignificance of FEMALE_x_I ($p = .09$) suggests that the impact of a progressively individualistic worldview on environmental risk perception cannot be confidently said to differ by sex.

Figure 2 graphically displays the culture specificity of sex variation in environmental risks. Using separate multivariate regression formulae for male and female respondents, the figure shows that both tended to display less concern for environmental risk as they became more hierarchical. But the curve for men slopes downward more steeply. In other words, men's and women's respective perceptions of risk progressively diverged as their outlooks became increasingly hierarchical. By the same token, as men's and women's worldviews became more egalitarian, their perceptions of environmental risk progressively converged and eventually intersected.

Model 4, the final regression model in Table 6, evaluates the contribution that white hierarchical males made to the sex and race variance observed in the sample as a whole. To the basic regression analyses reflected in Model 1, Model 4 adds a dummy variable for white hierarchical males. As a result, the coefficient for FEMALE in Model 4 represents the impact of being female, and the coefficient for BLACK the impact of being African-American, on the environmental risk perceptions of *all male Egalitarians* (individualistic as well as solidaristic) and *all women* (irrespective of cultural orientation), holding all other influences constant (Aiken & West, 1991; Hardy, 1993). Those coefficients were not significant.

Figure 2

The Interaction of Sex and Egalitarianism-Hierarchy in Environmental-Risk Perception



This result confirms that sex and race variation within the sample as a whole was, as hypothesized, attributable in its entirety to the extreme risk skepticism associated with being a white male Hierarch.

Gun Risks

Means analyses. Consistent with the “white male effect,” white males viewed guns as less dangerous than anyone else (Table 7). African-American women were significantly more concerned about the dangers of gun risk than any other group. African-American men and white women held comparable views.

There was also marked cultural variation in gun risk perceptions (Table 7). Across cultural groups, individuals of hierarchical and individualistic orientations saw guns as substantially (and significantly) safer than did those of egalitarian and solidaristic ones. The gap between Egalitarian Solidarists and Hierarchical Individualists was especially striking. We hypothesized such patterns based on the positive meanings gun express in relation to hierarchical and individualistic norms and the negative meanings they express in relation to egalitarian and solidaristic norms.

Sex variation again turned out to be culture specific. As reflected in Table 8, the persons most likely to see guns as safe were white male Hierarchical Individualists, who viewed guns as significantly less dangerous than did female Hierarchical Individualists. The most likely to see guns as dangerous were white Egalitarian Solidarists; there was no significant sex variation among Egalitarian Solidarists of either race. We hypothesized such patterns on the ground that guns are integral to male social roles within hierarchical and individualistic ways of life, but are alien to the social roles of both men and women who participate in egalitarian and solidaristic ways of life.

The relationship between gun risk perceptions, cultural worldviews, and race were also generally consistent with our hypotheses. Based on ethnographic accounts of the status-conferring properties of gun-ownership for whites, we had predicted that a disposition toward hierarchy would influence whites, but not African Americans, to see guns as safe. And in fact, among hierarchal groups, there were large and statistically significant difference between the views of white men, who tended to see guns as safe,

Table 7

Gun-Risk Perception by Demographic and Cultural Groups

	<i>M (SD)</i>		<i>M (SD)</i>
White Men	2.38 _a (.69)	Hierarchical Individualists	2.26 _a (.62)
White Women	2.64 _b (.47)	Hierarchical Solidarists	2.59 _b (.49)
Black Men	2.71 _b (.58)	Egalitarian Individualists	2.69 _c (.56)
Black Women	2.81 _c (.41)	Egalitarian Solidarists	2.94 _d (.54)

Distinct alphabetic subscripts indicate significant differences ($p < .05$) between groups within a column.

Table 8

Gun-Risk Perception by Combinations of Demographic Characteristics and Cultural Worldviews

	Hierarchical		Egalitarian	
	Individ.	Solid.	Individ.	Solid.
	<i>M (SD)</i>			
White Male	2.05 ^a _a (.59)	2.42 ^b _a (.53)	2.56 ^b _a (.66)	3.05 ^c _a (.58)
White Female	2.42 ^a _b (.56)	2.65 ^b _b (.54)	2.75 ^b _b (.53)	3.06 ^c _a (.52)
Black Male	2.59 ^{a,b} _{b,c} (.57)	2.54 ^{a,b} _b (.23)	2.44 ^a _a (.46)	2.73 ^b _b (.48)
Black Female	2.77 ^a _c (.47)	2.83 ^a _c (.31)	2.83 ^a _b (.50)	2.80 ^a _b (.42)

Distinct superscript notations indicate significant differences ($p < .05$) between groups across rows; distinct subscript notations indicate significant differences ($p < .05$) between groups within columns.

and blacks (male and female), who tended to see guns as dangerous. One intriguing surprise, however, was that black Egalitarian Individualists viewed guns as significantly less dangerous than black male Egalitarian Solidarists and than any black female group. This result suggests that the individualistic, stereotypically male roles and virtues associated with guns might not be the sole preserve of whites of an individualistic orientation.

Multivariate regression analyses. We again used a series of multivariate regression analyses to test both the contribution of cultural worldviews relative to other individual characteristics and the interaction between worldviews and such characteristics (Table 9). Models 1-3 enter independent variables in steps to assess their independence and relative explanatory power. Model 1 shows that sex and race both predicted the perception that guns are dangerous, whereas Protestantism, a taste for risk-taking, residing in a rural environment and growing up in one all predicted the perception that guns are safe. Model 2 adds political ideology and party affiliation: Not surprisingly, conservatism predicted the belief that guns are safe, while Democratic party affiliation predicted the belief that guns are dangerous. Indeed, the effect sizes of these variables were relatively large and eroded the explanatory power of certain other variables, including race.

Model 3 adds the cultural worldview variables. As predicted, egalitarian and solidaristic worldviews predicted the belief that guns are dangerous, while hierarchical and individualistic worldviews predicted the belief that guns are safe. Together the worldview measures added roughly 50% to the explanatory power of the model. Their inclusion in the model reduced the explanatory power of various other independent variables, notably conservatism, which was no longer significant.

Intriguingly, race reemerged as a weak but significant influence in Model 3. But its sign had flipped, indicating that being African-American weakly predicted the perception that guns are *safe* once cultural orientation was taken into account. Because it stands the effect of race observed in Model 1 on its head, this result strikingly confirms that racial variance overall derived from the disproportionate commitment of African-Americans to egalitarian and solidaristic worldviews.

Table 9

Gun-Risk Perception Regression Models

Model	1	2	3	4	5	6	7
FEMALE	.24**	.22**	.17**	-.46**	.24**	.22**	.01
BLACK	.09**	.00	-.05*	-.89**	.09**	.00	-.04
PROTESTANT	-.13**	-.06**	-.04*	-.03	-.13**	-.06**	-.06**
AGE	.02	.01	.06**	.05**	.02	.01	.04
INCOME	.02	.04	.06**	.06**	.02	.04	.05*
EDUCATION	.19**	.16**	.08**	.06**	.19**	.16**	.15**
SENSE-SEEKING	-.07**	-.08**	-.07**	.08**	-.07**	-.08**	-.07**
RURAL_ADULT	-.10**	-.09**	-.07**	-.07**	-.10**	-.09**	-.08**
RURAL_CHILD	-.10**	-.08**	-.06**	-.07**	-.10**	-.08**	-.07**
DEMOCRAT		.19**	.08**	-.06**		.19**	.16**
CONSERVATIVE		-.21**	-.05	-.04		-.21**	-.18**
INDIVIDUALISM			-.26**	-.31**			
HIERARCHY			-.29**	-.39**			
FEMALE_x_I				.36*			
FEMALE_x_H				.27**			
BLACK_x_H				.50**			
BLACK_x_I				.34			
D_HIERWHITEMALE					-.21**	-.12**	-.15**
D_INDWHITEMALE						-.16**	
D_INDMALE							-.20**
Adjusted R ²	.16**	.27**	.40**	.42**	.29**	.30**	.31**

Note. $N = 1844$. The dependent variable in each model is perceived run risk. Coefficients are standardized beta weights. * $p \leq .05$, ** $p \leq .01$.

Model 4 tests for significant interactions between demographic characteristics and cultural worldviews. The significant and positive sign of FEMALE_x_H confirmed that as respondents' worldviews became progressively more hierarchical, male respondents formed a more extreme perception of the safety of guns than did female ones. This result is consistent with our hypothesis that sex variance in gun-risk perceptions is culture specific. So was the significant and positive coefficient of FEMALE_x_I, which suggests that as respondents' worldviews became progressively more individualistic, men likewise formed a more extreme perception of gun safety.

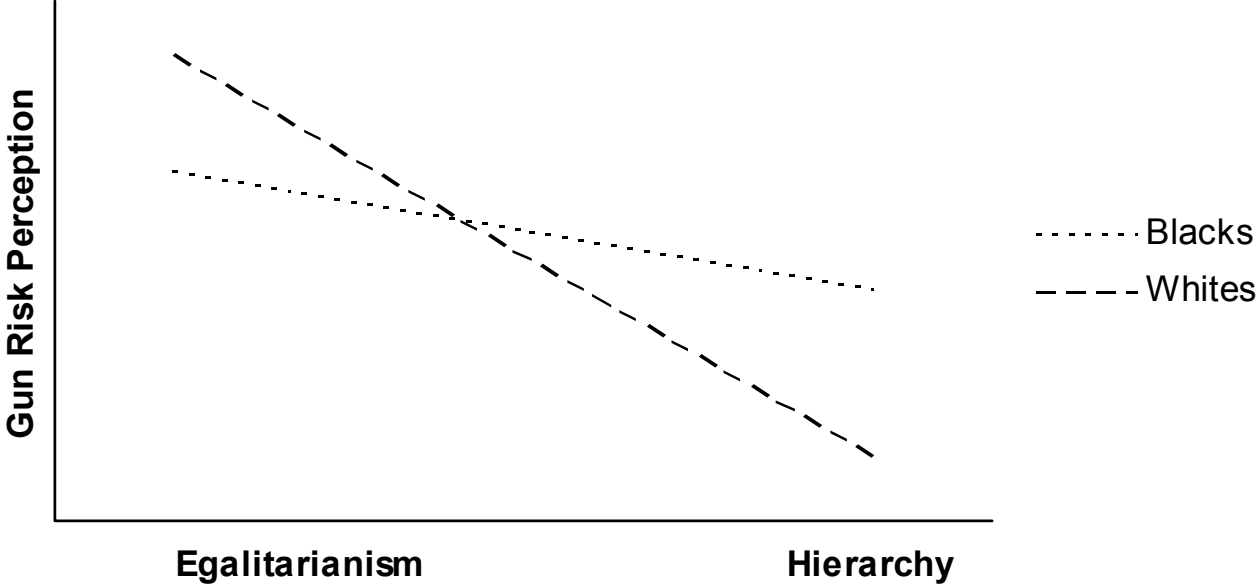
BLACK_x_H also was significant. Its positive sign indicates that African-American respondents were less influenced to perceive guns as safe as their worldviews became more hierarchical. This is not surprising, given the highly racialized connotations of hierarchical norms supportive of gun possession. BLACK_x_I, however, was nonsignificant ($p = .06$). This result furnishes some additional evidence that African-Americans are not completely impervious to the influence that individualism exerts in moderating perceptions of gun danger.

The nature of these interactions are more readily understood when they are graphically displayed. Figure 3 plots the gun risk perceptions of whites and African-Americans (using separate regression formulae for each) in relation to their predicted HIERARCHY scores. The curve for whites slopes steeply downward, indicating that a disposition toward hierarchy powerfully induced risk skepticism among whites. The curve for African-Americans slopes downwards but much more gently. In other words, variance among African-Americans along the Egalitarianism-Hierarchy dimension of worldview had a relatively minor impact on their gun-risk perceptions.

As the slopes of the curves suggest, the perceptions of African-American and white respondents converged as the two groups became progressively more egalitarian. Indeed, the curves ultimately cross over: That is, as whites and blacks became extremely egalitarian, African Americans displayed less concern about gun risks than whites did. This paradoxical effect, however, does not imply that egalitarianism somehow induced risk-skepticism among African Americans. As Figure 2 illustrates, the curve for Afri-

Figure 3

The Interaction of Race and Egalitarianism-Hierarchy in Gun-Risk Perception



can Americans still slopes downward as blacks' worldviews tend toward hierarchy. It merely slopes less steeply than does the curve for whites.

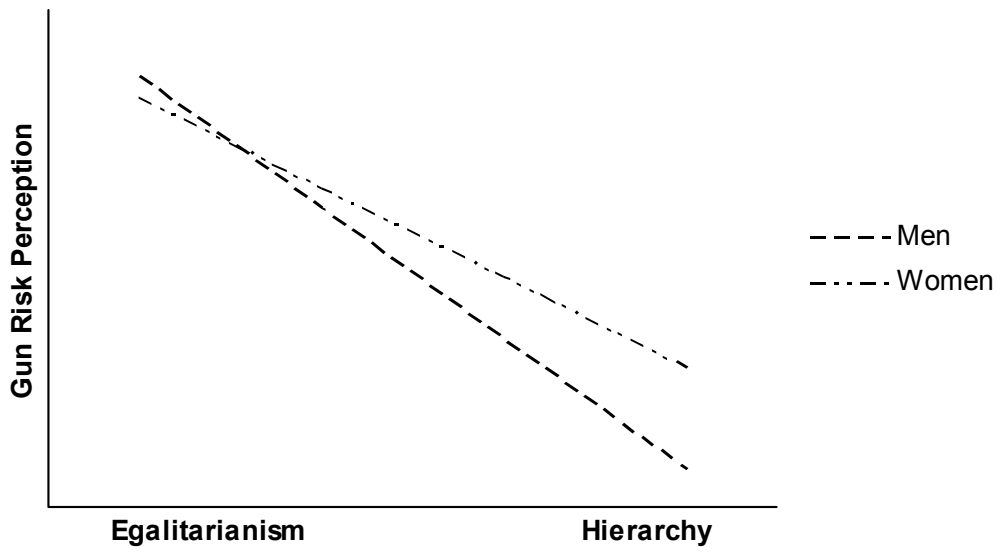
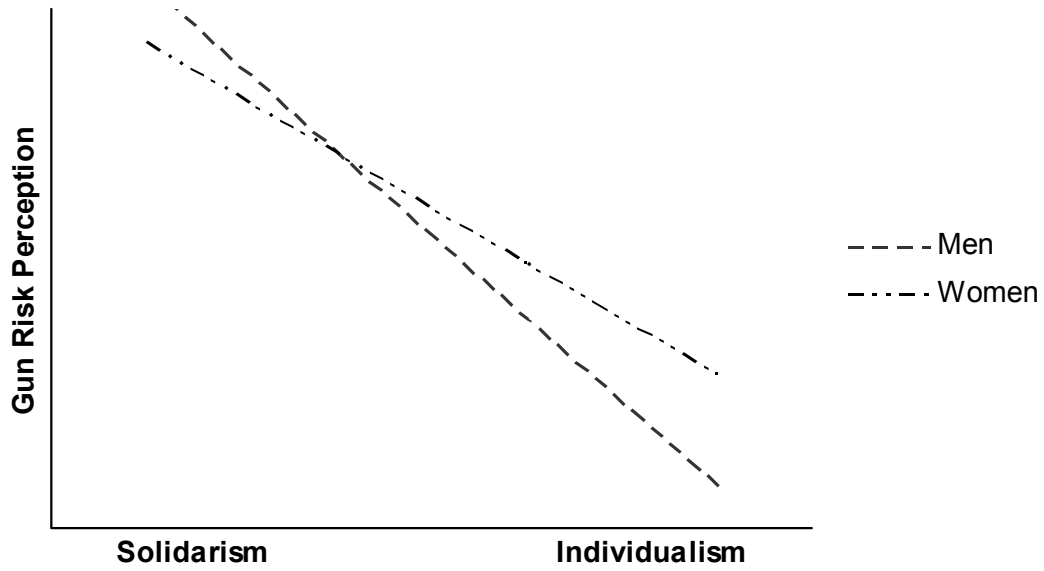
In sum, once cultural orientations are taken into account, it becomes impossible to say that African-American respondents perceived guns to be either more or less dangerous relative to white respondents. The appearance of any race effect whatsoever was a statistical figment of the extreme impact that being either a Hierarch or an Egalitarian had on whites.

To display the cultural specificity of sex variation, Figure 4 presents two graphs that plot the gun-risk perceptions of men and women (using separate regression formulae for each) as a function of their disposition toward hierarchy or individualism, respectively. In both graphs, the curves for men and women slope downward, indicating that male and female respondents alike became less concerned about gun risks as their worldviews became progressively more hierarchical or individualistic. In both cases, however, the curve for men slopes downward more steeply; this difference illustrates that relative to women, men became even more risk skeptical as their worldviews became more extremely hierarchical or individualistic. By the same token, as men and women became progressively more egalitarian and solidaristic, they converged in their assessments of the dangers of guns.

Models 5-7 in Table 9 include a series of dummy variables for white male Hierarchs, white male Individualists, and for male Individualists of all races. By adding these variables in steps, the source of sex variance can be identified with precision (Aiken & West, 1991; Hardy, 1993). The difference in men's and women's attitudes cannot be associated entirely with the gun-risk skepticism of either hierarchical white males, individualistic white males, or the two added together. This conclusion is reflected in the significance of FEMALE in Models 5 and 6. FEMALE becomes statistically *nonsignificant*, however, when both D_HIERWHITEMALE and D_INDMALE are included in Model 7. It was thus the extreme risk skepticism associated with being either a white male Hierarch or a male Individualist, black *or* white, that accounted for the sex variation observed within the sample as a whole.

Figure 4

The Interaction of Sex and Cultural Worldviews in Gun-Risk Perception



Abortion Risk

Means analyses. Demographic variance in evaluations of the health risk of obtaining an abortion displayed the familiar pattern. As shown in Table 10, white men were again less concerned than any other group. The difference in the abortion risk perceptions of African-American men and white women is not statistically significant. African-American women are the most concerned, although there is not a statistically significant difference between African-American women and African-American men.

But the pattern of cultural variance was distinctive. As reflected in Table 10, Hierarchal groups, which were least worried about environmental risks and gun risks, were the most worried about abortion risks. We predicted this result on the ground that hierarchical respondents would conform their perception of risk to their association of abortion with egalitarian and individualistic norms. These same associations, we predicted, would incline egalitarian and individualistic respondents to view abortion as relatively safe. That hypothesis too was borne out by the data: Egalitarian Individualists were the least concerned (although there was not a significant difference between their risk ratings and those of Egalitarian Solidarists).

The relationship between cultural worldviews and demographic characteristics was also striking. We hypothesized that hierarchical *women* would see the greatest danger in abortion, because their status is most dependent on the patriarchal norms that abortion rights appear to denigrate (Luker, 1984). As reflected in Table 11, among whites, female Hierarchs were indeed more concerned about abortion risks than male Hierarchs. White female Egalitarian Individualists, in contrast, were significantly less fearful than the mean member of the sample, and not significantly more fearful than male Egalitarian Individualists. We predicted such a result based on the stake egalitarian and individualistic women have in norms that confer status to individuals, male and female, who successfully master professional roles. There were also no significant difference in the risk perceptions of male and female Egalitarian Solidarists.

Unexpected, though, was the strength of the relationship between race and abortion risk perceptions (Table 11). Among hierarchical groups, there was no statistically significant difference in the perceptions of African Americans (male or female) and white females (although the power for this particular

Table 10

Abortion-Risk Perception by Demographic and Cultural Groups

	<i>M (SD)</i>		<i>M (SD)</i>
White Men	2.50 _a (.78)	Egalitarian Individualists	2.40 _c (.83)
White Women	2.62 _b (.87)	Egalitarian Solidarists	2.47 _c (.86)
Black Women	2.71 _{b,c} (.88)	Hierarchical Individualists	2.73 _b (.83)
Black Men	2.87 _c (.83)	Hierarchical Solidarists	2.93 _a (.77)

Distinct alphabetic subscripts indicate significant differences ($p < .05$) between groups within a column.

Table 11

Abortion-Risk Perception by Combinations of Demographic Characteristics and Cultural Worldviews

	Hierarchical		Egalitarian	
	Individ.	Solid.	Individ.	Solid.
	<i>M (SD)</i>			
White Male	2.55 ^a _a (.78)	2.77 ^b _a (.75)	2.19 ^c _a (.69)	2.32 ^c _a (.79)
White Female	2.88 ^a _b (.85)	3.03 ^a _{b,c} (.81)	2.31 ^b _{a,b} (.81)	2.23 ^b _a (.89)
Black Male	3.25 ^a _b (.47)	2.88 ^{a,b} _{a,c} (.70)	2.61 ^b _{b,c} (.83)	2.63 ^b _b (.89)
Black Female	3.05 ^a _b (1.03)	3.02 ^a _{a,c} (.79)	2.72 ^a _c (.91)	2.83 ^a _b (.77)

Distinct superscript notations indicate significant differences ($p < .05$) between groups across rows; distinct subscript notations indicate significant differences ($p < .05$) between groups within columns.

comparison, due to the small number of African-American Hierarchists, was sufficient to detect only relatively large effect sizes). More importantly, African-American Egalitarians, whether male or female, indisputably feared abortion risks more than their white counterparts. There was no significant difference between male and female African-Americans within any cultural group.

Multivariate regression analyses. Once more, we constructed a series of multivariate regression models to examine the relative power of, and interactions between, cultural worldviews and other influences. Consistent with our hypotheses, Model 2 in Table 12 shows that respondents became more concerned about abortion risks as their worldviews became more hierarchical, and less concerned as their worldviews became more individualistic. Together, the cultural orientation scales added approximately 17% to the explanatory power of the model. Both race and sex, however, remained significant predictors of higher levels of concern about abortion risks once worldviews were taken into account.

Model 3 investigates whether these sex and race effects are conditional on cultural worldview. FEMALE_x_H was statistically significant, confirming that sex interacted with Egalitarianism-Hierarchy. The positive coefficient associated with FEMALE_x_H indicated that, consistent with our hypotheses, as their respective worldviews became more hierarchical, female respondents became more concerned about abortion risks than did male respondents. Also consistent was the nonsignificance of FEMALE_x_I ($p = .12$): It cannot be said that female and male respondents discounted abortion risks to different extents as their respective worldviews became more individualistic. Likewise, neither BLACK_x_H, BLACK_x_I, nor BLACK_x_FEMALE was significant. It thus cannot be concluded with confidence that cultural worldviews or sex influenced the abortion risk perceptions of African Americans in our sample differently from how they influenced those of whites.

The culture-specificity of sex variation in abortion-risk perceptions is displayed graphically in Figure 5. This figure plots the influence of Egalitarianism-Hierarchy on the respective attitudes of men and women (using separate multivariate regression formulae for each). The curves for both men and women slope upward; however, the curve for women slopes more steeply, indicating that women's perceptions of the risk of abortion escalated more dramatically than men's as the two became progressively

Table 12

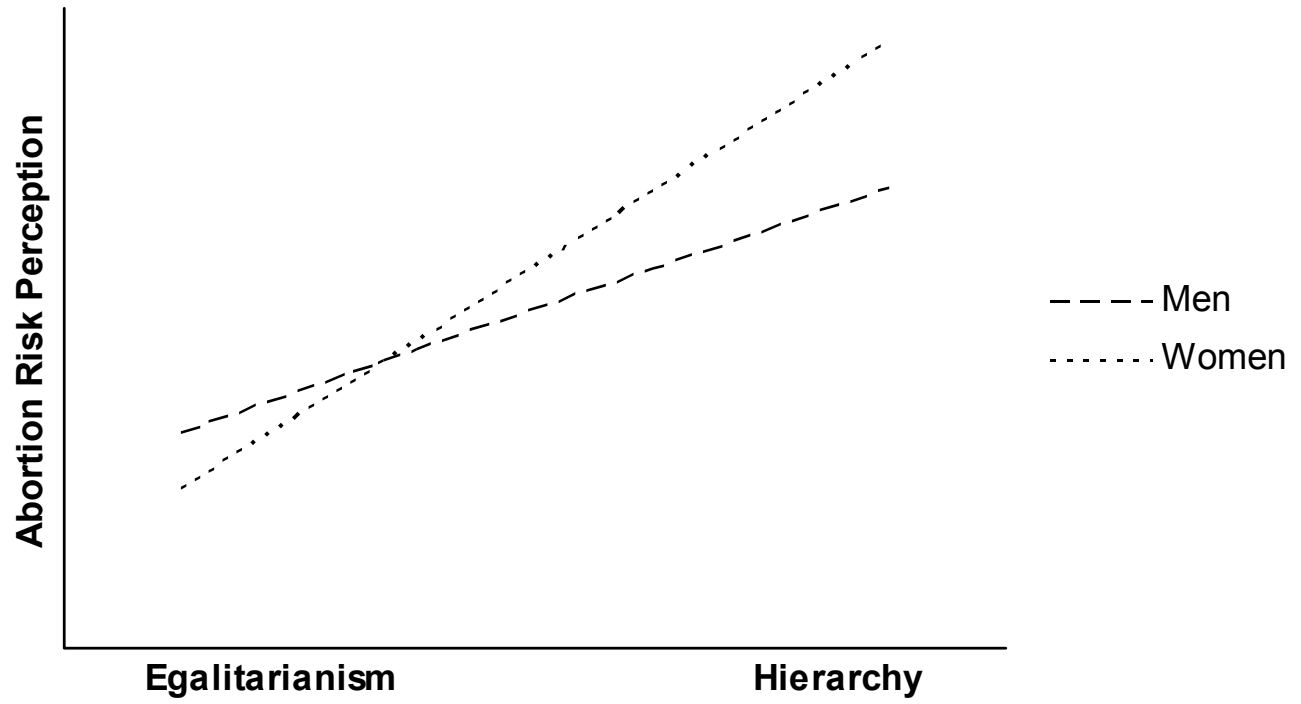
Abortion-Risk Perception Regression Models

Model	1	2	3	4
FEMALE	.05*	.06**	-.42*	-.02
BLACK	.16**	.17**	-.11	.17**
AGE	-.07**	-.07**	-.07**	-.07**
INCOME	-.11**	-.11**	-.04	-.11**
EDUCATION	-.12**	-.08**	-.11**	-.10**
CATHOLIC	.07**	.06**	-.08**	.07**
SENSE-SEEKING	-.05*	-.04	.06*	.23**
CONSERVATIVE	.26**	.18**	.18**	-.10**
DEMOCRAT	-.13**	-.08**	-.08**	-.05*
INDIVIDUALISM		-.12**	-.16**	
HIERARCHY		.24**	.19**	
FEMALE_x_H			.25*	
FEMALE_x_I			.22	
BLACK_x_I			.32	
BLACK_x_H			-.07	
BLACK_x_FEMALE			.04	
D_HIERFEM				.14**
Adjusted R ²	.18**	.21**	.21**	.19**

Note. $N = 1844$. The dependent variable in each model is perceived abortion risk. Coefficients are standardized beta weights. * $p \leq .05$, ** $p \leq .01$.

Figure 5

The Interaction of Sex and Egalitarianism-Hierarchy in Abortion-Risk Perception



more hierarchical. By the same token, as men and women became progressively more egalitarian, sex variation in abortion-risk perception dissipated and eventually disappeared.

A final regression analysis examines how much of the sex variance observed in the sample derives from the interaction between sex and Egalitarianism-Hierarchy. In Model 4 (Table 12), we added D_HIERFEM, the dummy variable for hierarchical women. In the resulting regression, the coefficient for FEMALE measured the impact that sex has on the abortion-risk perceptions of egalitarian women and all men, irrespective of cultural worldview, holding all other influences constant. As the table shows, FEMALE was nonsignificant. This result, consistent with our hypothesis, confirms that all of the sex-related variance in the sample was attributable to the extreme risk sensitivity associated with being a female Hierarch.

Discussion

Summary of Key Findings

Our study was designed to see if the “white male effect” could be linked to the impact of cultural worldviews on risk perceptions. The results strongly suggest that it can.

Each type of risk perception had the hypothesized relationship with cultural worldviews. Environmental risks concerned egalitarian and solidaristic respondents much more than they worried hierarchical and individualistic ones. Abortion risks, in contrast, distressed hierarchical respondents more than egalitarian ones, and were least disconcerting to persons who were both relatively egalitarian and relatively individualistic. Which type of gun risks alarmed respondents most also depended on cultural orientation: Respondents who were egalitarian and solidaristic in their views worried that there would be more gun accidents and crime if guns were not well regulated, whereas respondents who were hierarchal and individualistic worried that excessive regulation would undermine the ability of law-abiding persons to defend themselves from violent law-breakers.

Demographic variance in risk perceptions, we found, grew out of cultural variance. Sex affects risk perception only in conjunction with particular worldviews. Among persons who were relatively hier-

archical in their worldview, but not among persons who were relatively egalitarian, there were sharp sex differences in the estimation of environmental and abortion risks. Likewise, for gun risks, there was no sex disparity in the perceptions of Egalitarian Solidarists, whereas there were such differences among Hierarchical Individualists. It is only because sex variance was so pronounced among persons who hold either hierarchical or individualistic worldviews that there appeared to be a divergence in the risk perceptions of men and women in the sample as a whole.

Racial disparities were also highly dependent on culture. When cultural orientations were controlled for, African-Americans no longer displayed greater apprehension about either environmental risks or gun risks.

The impact of cultural worldviews is consistent with the hypothesized relationship between risk perception and status anxiety. In keeping with the association of gun ownership with hierarchical and individualistic norms, for example, respondents who held hierarchical and individualistic worldviews were predictably disposed to reject the assertion — leveled by their egalitarian and solidaristic rivals — that guns are dangerous. The respondents inclined to see guns as safest of all were hierarchical and individualistic *white men*. Their stance of fearlessness is convincingly attributable to status anxiety insofar as they are the persons who need guns the most in order to occupy social roles and display individual virtues within their cultural communities.

Status anxiety also generates the white male effect for environmental risk perception. All of the sex and race variance with respect to this attitude, we found, was attributable to white male Hierarchs. Their extreme risk skepticism makes sense under the cultural theory of risk perception, since their status is threatened by the indictment of societal and governmental elites implicit in the claim that commerce is hazardous (Douglas & Wildavsky, 1982). Hierarchical women are less threatened, and thus less risk skeptical, because their status is tied to domestic roles. Assertions of environmental risk should pose a status challenge to relatively individualistic persons, who equate success in the market with personal virtue. But as we hypothesized, because individualistic norms treat commercial and professional roles as status-enhancing for both men and women, an individualistic orientation disposed respondents to risk skepticism

without regard to sex. African-American men nor African-American women, being predominantly egalitarian and solidaristic, should not perceive a status threat from environmental risk claims. And indeed our data demonstrated that male and female African Americans were uniformly receptive to environmental risk claims — yet no more so than whites once cultural orientation was controlled for.

White hierarchical and individualistic males are by no means the only persons whose status anxieties translate into distinctive risk perceptions. Female hierarchs saw the most danger in abortion. We hypothesized that they would because abortion rights are perceived to denigrate norms that confer status on women for occupying domestic rather than professional roles. We also discovered an unexpected disposition among African-American men to see guns as safer as they become more individualistic. This finding suggests that black male individualists, like white male individualists, react defensively to assertions of danger directed at activities that are distinctively status-enhancing for men.

Race and Abortion

The primary anomalous finding was the strong relationship between race and abortion risk perception. Cultural worldviews have the hypothesized impact on African Americans as well as whites. Nevertheless, blacks see abortion as more dangerous than whites even after cultural orientation is taken into account.

Confronted with the persistent race effect on abortion attitudes, we conducted post-hoc analyses to see if our data might yield a clue as to its causes. Probing revealed that the impact of Egalitarianism-Hierarchy on abortion risk perceptions derived largely from a subcomponent of items that measured attitudes toward traditional gender roles (see EGAYMAR, HFEMININ, HTRADFAM, and HWMNRTS in the Appendix). These items were combined to form a Patriarchy scale ($\alpha = .68$).

Additional testing revealed that the power of egalitarian sensibilities to predict a high Patriarchy score was conditional on race. There was, in general, a moderate negative correlation ($r = -.28$, $p < .001$) between respondent's Patriarchy score and the strength of their agreement with a "radical egalitarianism" (ERADEQ) item: "We need to dramatically reduce inequalities between the rich and the poor, whites and

people of color, and men and women.” When Patriarchy was regressed on ERADEQ and BLACK, there was a significant interaction between the two. The positive coefficient associated with the interaction variable signified that African American respondents who espoused radical egalitarianism held *more* patriarchal attitudes than radical egalitarian respondents generally. In other words, as African-American respondents became more egalitarian they remained relatively committed to certain patriarchal attitudes that white respondents, as they became more egalitarian, repudiated.

These patriarchal attitudes, we surmised, would likely dispose African-American respondents to a greater sensitivity to abortion risks. This conclusion was supported by another regression analysis (Table 13). This analysis includes the new dummy variable D_BLACKPAT, for blacks whose Patriarchy scores exceeded those of the mean Egalitarian. In the resulting regression equation, the coefficient for BLACK represents the difference between the abortion risk perception of nonpatriarchal African-Americans and everyone else. As can be seen in Table 13, the coefficient for BLACK in such an analysis was nonsignificant. The race effect on abortion risk perceptions, then, can plausibly be attributed to the wedge that patriarchal attitudes drive between African Americans and white Egalitarians.

These results make it possible to connect the persistent race disparity in abortion risk perceptions to the distinctive status anxieties of African-Americans, male and female. Scholars have amply documented the behaviors that African Americans feel impelled to use to parry stigmatizing depictions of them (Braman, 2004). Research on “stereotype threat” finds that individual African Americans, to head off discriminatory treatment, will conspicuously disavow attitudes associated with their race (Steele & Aaronson, 1995, 2002). The “politics of respectability” refers to the collective tendency of African Americans to adopt certain socially conservative positions in order to rebut the perception that they are uncommitted to or “[in]capable of meeting the established moral standards of white middle-class Americans” (Kennedy, 1999, p. 17).

Such standards include conventional sexual and family norms: monogamy, sex only within marriage, the two-parent household. Prevalent racial stereotypes depict African-Americans as unfit to meet these expectations (Smith, 1990; Siegelman & Tuch, 1997). Thus, notwithstanding their egalitarian-

Table 13

Regression of Black Patriarchy Dummy on Abortion-Risk Perception

Model	1	2
FEMALE	.05*	.05*
BLACK	.16**	.09
AGE	-.07**	-.07**
INCOME	-.11**	-.11**
EDUCATION	-.12**	-.12**
CATHOLIC	.07**	-.05*
SENSE-SEEKING	-.05*	.07**
CONSERVATIVE	.26**	.26**
DEMOCRAT	-.13**	-.13**
BLACK_x_PAT		.07
Adjusted R ²	.18**	.18**

Note. $N = 1844$. The dependent variable in each model is perceived abortion risk. Coefficients are standardized beta weights.

* $p \leq .05$, ** $p \leq .01$.

ism—on the contrary, precisely because of it—African-Americans might affirm patriarchal norms as a means of fighting these stereotypes. In particular, because the relatively high rate of abortion among African-Americans reinforces the stigmatizing depictions of them as sexually irresponsible, the same interest in attacking racial stereotypes would explain why African Americans are more pro-life than whites who hold egalitarian values (Combs & Welch, 1982; Wilcox, 1990). Disposed by status-protective concerns to denounce abortion as immoral, African-Americans — like everyone else — form a view of the danger of abortion that that bolsters their cultural evaluation of it.

Although supported by our data, this account is certainly conjectural. The power of distinctive African-American status anxieties to explain racial variance in risk perception — particularly among individuals of a highly egalitarian worldview — is a matter that merits additional investigation.

Future Research: Mechanisms

Future studies also should also be conducted to confirm, and extend understanding of, the influence of cultural worldviews on risk attitudes. We have supported our central hypotheses by presenting evidence that risk perceptions are distributed across persons in patterns that are best explained by the shaping influence of cultural status anxieties. In addition to testing the theory on other classes of risks, future studies should identify the concrete social and cognitive processes through which this species of motivation operates.

The most likely candidate is affect. The visceral responses that putatively dangerous activities trigger have been shown to be the strongest and most robust predictors of perceived risk (Slovic, 2004; Finucane et al., 2000a). Because emotions are shaped by social norms (Nussbaum, 2001), we would anticipate that whether affective responses of this sort bear a negative or positive valence depends on one's cultural worldview.

Additional mechanisms might also mediate the impact of culture on risk perception. These include: *cognitive dissonance avoidance* (Festinger, 1957), which might incline individuals to resolve contested empirical claims in a manner compatible with their cultural identities (Sherman & Cohen, 2002);

biased assimilation (Lord, Ross & Leper, 1979), which might induce them to credit or discredit factual information in a manner supportive of their prior, culturally grounded views; *availability bias* (Tversky & Kahneman, 1973; Slovic, 1976), which might be expected to interact with worldviews if individuals are disposed more readily to take note of and recall instances of harm that comport with their culturally conditioned expectations (Kahan & Braman, 2003a); and various in-group and out-group dynamics, such as *naïve realism* (Robinson et al. 1995), *reactive devaluation* (Ross, 1995), and *group polarization* (Sunstein, 2001), which might motivate individuals to trust those who share their cultural allegiances and distrust those who do not when cultural groups disagree about risk. The interconnection between these processes and cultural worldviews is amenable to experimental study, which could corroborate the interpretation of the data offered in this paper and clarify which mechanisms are most responsible for explaining cultural variation in risk perception (Douglas, 1999).

Practical Implications

Our findings have important practical implications. The connection between risk perceptions and cultural worldviews should influence both the regulation and the communication of risk.

Risk regulation. Normally risk regulators use risk-benefit or related forms of analysis to evaluate hazardous activities and proposed measures for abating them (e.g., Revesz, 1999). When employing this approach, analysts often take as given public assessments of the benefits associated with putatively dangerous activities, as revealed in market transactions and other forms of private behavior (Viscusi, 1983). However, many analysts propose discounting public evaluations of the risks associated with such activities on the ground that those judgments are likely to be distorted by cognitive biases or errors to which experienced risk experts are less likely to succumb (e.g., Margolis, 1996; Sunstein, 2005).

Our study complicates this strategy for risk regulation. To start, the relationship between cultural worldviews and risk perceptions blurs the line between public assessments of the “risks” and “benefits” of putatively dangerous activities. The cultural theory of risk perception suggests that individuals conform their view of how dangerous an activity is to their moral assessment of it. Accordingly, when expert risk

regulators dismiss public estimations of various *risks* as uninformed, they can just as easily be understood to be discounting the *benefits* that individuals attach to activities by virtue of their cultural worldviews.

At the same time, our findings cast doubt on the usual assumption that regulators should always credit the value members of the public attach to hazardous activities. The law takes public estimations of the benefits of dangerous activities as given on the liberal democratic ground that no person's valuation of safety relative to other goals is entitled to more or less weight than anyone else's. But once the connection between risk perception and cultural worldviews is exposed, it becomes clear that individual tolerance of danger does not reflect a "safety" preference in any straightforward sense. In selecting some risks for attention and dismissing others as unimportant, individuals are, effectively, advancing one culturally partisan vision of the ideal society over others. It is unclear that risk regulation policy should be responsive to such demands. One might argue, for example, that the law should repudiate the low environmental risk evaluations reflected in the "white male effect" not simply because those evaluations are erroneous, but because they express inappropriate hierarchical and individualistic norms. Alternatively, one might oppose, say, the demand for stricter forms of gun control on the ground that it derives not from an acceptable desire for personal safety but from an illiberal desire to erect an egalitarian or solidarist orthodoxy in law. We take no position on these issues here; we merely draw attention to the normative complexities that a cultural theory of risk perception reveals.

Risk communication. The implications of our study for risk communication are more straightforward. The influence of cultural worldviews on risk perception demonstrates that it would be a profound mistake to assume that the simple ascertainment of empirical truth will lead to public enlightenment on various societal and personal risks. Where the activities associated with those risks are conspicuously emblematic of one cultural worldview or another, status concerns will induce individuals to credit or dismiss scientific information depending on its congeniality to their cultural norms.

This conclusion does not necessarily mean that it is impossible to educate the public about the risks of activities associated with cultural status competition. What it does imply is that information must be transmitted in a form that makes individuals' acceptance of it compatible with their core cultural com-

mitments. It is not enough that the information be true; it must be framed in a manner that bears an acceptable social meaning.

Indeed, professional risk communicators, particularly in the field of public health, are well aware of this point (see generally Kahan & Braman 2003b). They know that merely furnishing individuals with factual information has relatively little impact on the incidence of risky behavior such as smoking and unsafe sex (See, e.g., Stiffman et al., 1992; Goldman & Glantz, 1998). Much more effective are social-meaning campaigns that depict risk-taking as contrary to, and precaution-taking as compelled by, values and traits central to the self-definition of the persons involved (Goldman & Glantz, 1998; Buck et al., 2004; Hansen et. al., 2004).

Evidence of the sort we have presented in this paper will be highly useful to risk communicators intent on employing this type of social-meaning strategy. By identifying the cultural worldviews of those most disposed to reject certain claims of risk, our study would furnish the risk communicator with information relevant to crafting an appeal that makes acceptance of the desired conclusion compatible with the recipients' values.

Conclusion

Our aim in this paper was to investigate the origins of variance in risk perception, particularly racial and sex variance. The source of it, we hypothesized and our data confirmed, is culturally grounded status competition. As surmised by Douglas and Wildavsky (1982), individuals tend to conform their view of the risks of putatively dangerous activities — commerce and technology, guns, abortion — to their cultural evaluations of them. Variance in cultural worldviews thus generates symbolic political conflict (Gusfield, 1986) over risk regulation: Opposing groups (hierarchical and egalitarian, individualistic and solidaristic) compete to secure risk regulation that endorses the norms of their group and denigrates those of their cultural adversaries.

Similar dynamics explain sex and race disparities in risk perception. Different ways of life feature distinctive forms of sexual and racial differentiation in social roles involving putatively dangerous activi-

ties. Accordingly, men and women, whites and African-Americans, form distinct attitudes toward risk in a manner that protects from interference the activities on which their status depends while authorizing restriction of activities threatening to their status.

The data we have presented have important practical implications. Normatively, our data raise difficult questions about whether and how status-protective attitudes toward risk should be factored into the social-welfare calculus that guides risk regulators. Prescriptively, our data suggests the need for expressively sophisticated modes of risk communication, one that avoid status-protective resistance to public acceptance of empirically sound risk information.

Fear does discriminate. But it does so in a more even-handed way than had been previously realized. Women and minorities are more fearful of various risks. But the reason they are is that men (particularly individualistic and hierarchical white men) are more fearful of the *loss of status* that they would suffer were various risk claims to be credited in law. They are not the only ones, moreover, whose status anxieties impel extreme stances toward risk. This conclusion solves many long-standing puzzles about the nature and significance of variance in risk perception. But it also exposes many new ones.

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Appendix. Survey Items

All of the items shown below used a four-point response scale: 1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree.

*Cultural World View Items**1. Egalitarianism-Hierarchy Scale.* Items beginning with “E” are reversed.

HCHEATS	It seems like the criminals and welfare cheats get all the breaks, while the average citizen picks up the tab.
HEQUAL	We have gone too far in pushing equal rights in this country.
HFEMININ	Society as a whole has become too soft and feminine.
HREVDIS1	Nowadays it seems like there is just as much discrimination against whites as there is against blacks.
HREVDIS2	It seems like blacks, women, homosexuals and other groups don't want equal rights, they want special rights just for them.
HTRADFAM	A lot of problems in our society today come from the decline in the traditional family, where the man works and the woman stays home.
HWMNRTS	The women's rights movement has gone too far.
EDISCRIM	Discrimination against minorities is still a very serious problem in our society.
EDIVERS	It's old-fashioned and wrong to think that one culture's set of values is better than any other culture's way of seeing the world.
EGAYMAR	A gay or lesbian couple should have just as much right to marry as any other couple.
ERADEQ	We need to dramatically reduce inequalities between the rich and the poor, whites and people of color, and men and women.
EROUGH	Parents should encourage young boys to be more sensitive and less “rough and tough.”
EWEALTH	Our society would be better off if the distribution of wealth was more equal.
EXSEXIST	We live in a sexist society that is fundamentally set up to discriminate against women.

2. *Solidarism-Individualism Scale*. Items beginning with “S” are reversed.

IENJOY	People who are successful in business have a right to enjoy their wealth as they see fit.
IFIX	If the government spent less time trying to fix everyone’s problems, we’d all be a lot better off.
IGOVWAST	Government regulations are almost always a waste of everyone’s time and money.
IINTRFER	The government interferes far too much in our everyday lives.
IMKT	Free markets--not government programs--are the best way to supply people with the things they need.
INEEDS	Too many people today expect society to do things for them that they should be doing for themselves.
INEEDY	It’s a mistake to ask society to help every person in need.
IPRIVACY	The government should stop telling people how to live their lives.
IProfit	Private profit is the main motive for hard work.
IPROTECT	It’s not the government’s business to try to protect people from themselves.
IRESPON	Society works best when it lets individuals take responsibility for their own lives without telling them what to do.
ITRIES	Our government tries to do too many things for too many people. We should just let people take care of themselves.
SHARM	Sometimes government needs to make laws that keep people from hurting themselves.
SLIMCHOI	Government should put limits on the choices individuals can make so they don’t get in the way of what’s good for society.
SNEEDS	It’s society’s responsibility to make sure everyone’s basic needs are met.
SPROTECT	The government should do more to advance society’s goals, even if that means limiting the freedom and choices of individuals.
SRELY	People should be able to rely on the government for help when they need it.

Risk Perception Items

1. *Environmental Risks*

ENVIRON	Environmental pollution is a serious risk to public health in our country.
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GLOBWARM Global warming poses a serious danger for the future of our planet.

NUKES It is dangerous to live near a nuclear power plant.

2. *Gun Risks*

HOMEACC When people keep a gun in their home, there is a serious risk that someone will be accidentally shot.

HOMEDDEF Keeping a gun in the home is an effective way for those who live there to defend themselves from an intruder. (Reversed)

SOCSAFE The more guns there are in our society, the less safe our society becomes.

HANDCRIM Fewer people commit violent crimes when private citizens are allowed to carry concealed handguns. (Reversed)

DREAD1 I am very disturbed by the thought that I or my loved ones might be injured or killed because gun-control laws aren't strict enough.

DREAD2 I am very disturbed by the thought that gun-control laws might interfere with my ability to defend myself or my loved ones. (Reversed)

TOOMANY There are already too many restrictions on firearms in the U.S. (Reversed)

STRONGER I favor stronger gun control laws.

3. *Abortion Risks*

ABORTION Women who get abortions are putting their health in danger.