



Original Article

Is the relationship between pathogen avoidance and ideological conservatism explained by sexual strategies? [☆]



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ABSTRACT

Multiple recent studies report that measures of pathogen avoidance (e.g., disgust sensitivity) correlate with political ideology. This relationship has been interpreted as suggesting that certain political views (specifically, those views that are categorized as socially conservative) function to mitigate the pathogen threats posed either by intergroup interactions or by departures from traditional societal norms, which sometimes evolve culturally for anti-pathogen functions. We propose and test the alternative hypothesis that pathogen avoidance relates to conservatism indirectly via sexual strategies (e.g., relatively monogamous versus relatively promiscuous). Specifically, we argue that individuals who are more invested in avoiding pathogens follow a more monogamous mating strategy to mitigate against pathogens transmitted during sexual contact, and individuals following a more monogamous mating strategy adopt socially conservative political ideologies to support their reproductive interests. Results from three studies (N 's = 819, 238, and 248) using multiple measures of pathogen avoidance, sexual strategies, and ideology support this account, with sexual strategies fully mediating the relationship between measures of pathogen avoidance and conservatism in each study.

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1. Introduction

In recent years, political scientists and social, personality, and political psychologists have contributed to a growing field of Evolutionary Political Science (Lopez & McDermott, 2012). Investigations in this area have used insights from evolutionary psychology to better understand preferences for political leaders (Spisak, Grabo, Arvey, & van Vugt, 2014) as well as positions on politically relevant issues such as recreational drug use (Kurzban, Dukes, & Weeden, 2010), social welfare (Aarøe & Petersen, 2013), and progressive taxation (Petersen, Sznycer, Sell, Cosmides, & Tooby, 2013).

Attitudes toward discrete political issues often bundle into packages and vary along dimensions referred to as ideological liberalism versus conservatism. Political scientists and psychologists have argued that two primary dimensions underlie variation in ideology: 1) advocating for social change (left-wing) versus advocating for tradition (right-wing), and 2) advocating for equality between individuals and groups (left-wing) versus tolerating inequality (right-wing; for overviews, see Duckitt & Sibley, 2009; Jost, Glaser, & Sulloway, 2003; Jost, Federico, & Napier, 2009). Much of the research investigating how and why individuals vary along these dimensions has concluded that

ideological conservatism functions to generally neutralize or manage unpleasant sensations, such as those accompanying fear and uncertainty (Jost et al., 2003). Evolutionary approaches to ideology have similarly suggested that conservatism functions to neutralize threats, though they have emphasized specific, fitness-relevant threats rather than internally generated, phenomenological ones. We discuss two of these evolutionary perspectives here.

1.1. Pathogen avoidance and ideological conservatism

Researchers have suggested that certain elements of conservative ideology function at least in part to reduce individuals' exposure to infectious microorganisms (Terrizzi, Shook, & McDaniel, 2013; Inbar & Pizarro, 2014). For individuals who are more invested in avoiding pathogens, the reasoning goes, the putatively pathogen-mitigating aspects of right-wing ideologies make these ideologies more appealing. Most of the support for this account comes from studies reporting a positive relationship between political attitudes and individual differences in pathogen avoidance. These studies typically operationalize pathogen avoidance using self-report instruments that either (a) ask participants to report the extent to which they agree with statements such as "I do not like to write with a pencil someone else has obviously chewed on" (referred to as "germ aversion" or "contamination sensitivity"); or (b) ask participants the degree to which they would be disgusted by experiences such as "stepping in dog poop" (referred to as "disgust sensitivity"). A recent meta-analysis of studies using these methods suggests

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that the relationship between pathogen avoidance and conservatism is statistically robust and moderate in size, $r = .26$ (Terrizzi et al., 2013).

Multiple potentially pathogen-neutralizing aspects of conservatism have been proposed to explain this empirical relationship. One account suggests that interactions with outgroup members might pose a greater pathogen threat than interactions with ingroup members if outgroups carry – and are adapted to – pathogens from different ecologies (see Thornhill & Fincher, 2014, for an overview). Given that ingroup favoritism is a hallmark of ideological conservatism (Duckitt & Sibley, 2009), researchers have proposed that variation in conservatism in part results from variation in effort to neutralize the putative pathogen threats posed by intergroup interactions (Terrizzi et al., 2013). Another account points out that cultural evolution might favor traditions and rituals (e.g., in terms of hygiene or food preparation) that are adapted to neutralizing ecologically-specific pathogens (Billing & Sherman, 1998). Adherence to tradition – and advocating for others in the community to also adhere to tradition – might thus partially serve pathogen-neutralizing functions (Murray, Trudeau, & Schaller, 2011). Importantly, researchers favoring both of these explanations have suggested that only the *social* conservatism dimension (i.e., advocating for change versus favoring long-standing cultural traditions) reflects a pathogen avoidance strategy (Terrizzi et al., 2013). For example, Terrizzi, Shook, and Ventis (2010) suggest that favoring versus disfavoring the legality of stem cell research, abortion, and medical marijuana use reflects pathogen avoidance, whereas opinions regarding minimum wage, environmental protection, and government-funded health care do not.

These accounts are consistent with empirical results showing bivariate relationships between conservatism and pathogen avoidance. However, a growing body of theory and research on the behavioral immune system suggests that myriad aspects of human psychology and behavior might serve anti-pathogen functions (Schaller & Park, 2011; Thornhill & Fincher, 2014). This raises the possibility that there are alternative accounts that might explain the empirical relationship between pathogen avoidance and conservatism. Here, we present and test such an alternative explanation—that the relationship between measures of pathogen avoidance and conservatism reflects sexual strategies.

1.2. Pathogen avoidance and sexual strategies

The costs imposed by pathogens have shaped the evolution of several aspects of human sexuality and mate preferences (Tooby, 1982; Ridley, 1993; Tybur & Gangestad, 2011) including, potentially, orientation toward monogamous versus promiscuous sexual strategies (Schaller & Murray, 2008). Each new sexual partner presents a risk of exposure to novel pathogens, either those commonly categorized as “sexually transmitted” (e.g., chlamydia) or those that are transmitted via close physical contact, sexual or otherwise (e.g., influenza, tuberculosis). Indeed, across primate groups, those species with greater promiscuity also invest more energy in immune function, possibly to combat the pathogens transmitted during sexual contact (Nunn, Gittleman, & Antonovics, 2000). If the pathogen costs are greater than the benefits of multiple sexual partners (including increased reproductive output for males and increased offspring genetic diversity or quality for females; see Buss & Schmitt, 1993), then mating systems might evolve to be relatively monogamous (Loehle, 1995). Modeling simulations support this hypothesis, though they also suggest that, rather than leading to homogenous monogamy throughout a population, pathogen costs of sex can lead to increases in variability in monogamous versus promiscuous mating strategies, with some individuals favoring a pathogen-risky sexual strategy (non-monogamous) and others favoring a pathogen-risk-averse strategy (monogamous; Boots & Knell, 2002; Kokko, Ranta, Ruxton, & Lundberg, 2002).

Empirical investigations of humans are consistent with the idea that more pathogen-avoidant individuals adopt more monogamous mating strategies. For example, Murray, Jones, and Schaller (2013) found that the Germ Aversion subscale of the Perceived Vulnerability to Disease scale (Duncan, Schaller, & Park, 2009) relates negatively to short-term

mating orientation ($\beta = -.19$), meaning that individuals who are more avoidant of situations that are likely to transmit pathogens are also less open to sex outside of a long-term, committed relationship. Similarly, the sexual and pathogen factors of the Three Domain Disgust Scale (TDDS; Tybur, Lieberman, & Griskevicius, 2009) are moderately correlated ($\beta = .40$, as reported during instrument development), meaning that individuals who report being more disgusted by pathogen cues also report being more disgusted by a variety of sexual acts and situations outside of intercourse in a pair bond. Other research also indicates a relationship between pathogen avoidance and sexual attitudes (e.g., Olatunji, 2008; Duncan et al., 2009). Hence, the same operationalizations of pathogen avoidance used in investigations of the relationship between pathogen avoidance and conservatism (i.e., disgust sensitivity and germ aversion; see Terrizzi et al., 2013) also relate to sexual strategies. And, as it happens, recent research suggests that sexual strategies might also relate to conservatism for reasons apart from pathogen avoidance.

1.3. Sexual strategies and ideological conservatism

Individuals following relatively monogamous versus relatively non-monogamous mating strategies are helped or harmed by different social rules (Weeden, Cohen, & Kenrick, 2008; Weeden & Kurzban, 2013). Rules that allow or even facilitate promiscuous sexual behavior in the social ecology threaten the fitness interests of individuals following monogamous, high investment reproductive strategies. Men who invest heavily in a single pair-bond have more to lose (e.g., via cuckoldry) if the social ecology presents more opportunities for mate poaching via “non-traditional” activities that present opportunities for casual, extra-pair sex (e.g., drug use, parties, sexual exploration; Kurzban et al., 2010), and women who are highly dependent upon a pair-bonded male’s investment encounter similar threats in environments where promiscuous sexual behavior is condoned and partner resources might be reallocated from parenting effort to mating effort (Price, Scott, & Pound, 2014). Therefore, individuals following relatively monogamous mating strategies have a strategic interest in endorsing rules proscribing sexual promiscuity—rules that characterize many ideological aspects of social conservatism (Weeden & Kurzban, 2014).

Results from several studies are consistent with the sexual strategies hypothesis of conservatism. Using large U.S. samples, Weeden et al. (2008) and Kurzban et al. (2010) find that the causal path flows from sexual strategies to ideological conservatism rather than from ideological conservatism to sexual strategies. These empirical patterns do not appear to be unique to the United States.; indeed, they have been replicated in Japan, the Netherlands, and Belgium (Quintelier, Ishii, Weeden, Kurzban, & Braeckman, 2013). Further, data from the World Values Survey, which includes nearly 300,000 individuals from 90 countries, indicate that religiosity consistently relates to endorsement of rules that facilitate or interfere with sexual strategies (e.g., casual sex, prostitution, sexual infidelity), whereas it does not uniquely relate to endorsement of rules unrelated to sexual strategies (Weeden & Kurzban, 2013). In the United States, individuals living in communities in which females are more economically dependent on males find sexual promiscuity more wrong than individuals living in communities with greater sex egalitarianism (Price et al., 2014). Finally, Li, Cohen, Weeden, and Kenrick (2010) find that, in an American university sample, participants who view dating profiles depicting highly attractive members of their own sex (i.e., intrasexual competitors who could threaten investment in a monogamous mating strategy via mate poaching) endorse greater religiosity.

1.4. Do sexual strategies explain the relationship between pathogen avoidance and social conservatism?

There are, then, multiple possible explanations for the relationship between pathogen avoidance and social conservatism. We have

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