# Why Wear the Hijab? Social Functions of Traditional Islamic Female Coverings as Understood by Contemporary Muslim Women

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### **ABSTRACT**

The veil is one of the most visible and an often-controversial symbol of Islam for non-Muslims. The covering of women has become an increasingly provocative and controversial topic in Western nations in recent years. There are many perspectives from which these issues may be discussed. We use an integrative evolutionary framework to provide a better understanding of the origins and social functions of such customs, a perspective often neglected in the current debates. We argue that covering of women and other similar cultural practices originated largely to promote social cohesion and reduce male intra-sexual competition by reducing the salience of mating opportunities and male reproductive skew. We also conducted a survey of Muslim women to examine attitudes and beliefs related to our argument and current political debates. As predicted, the majority of participants felt that wearing the hijab (which covers one's hair but not one's face) reduces unwanted attention from men. Participants' self-reported religiosity and proportion of friends who are Muslim predicted wearing the hijab.

### **KEYWORDS**

Islam, Muslim, Veil, Hijab, Intra-sexual Competition, Evolutionary Psychology

As intercultural contact increases in the modern world and immigration patterns increase the demographic diversity of nations, differences in cultural practices have become more salient and sometimes lead to political controversy. For non-Muslims, the veil is the most visible and often the most controversial symbol of Islam (Murphy, 2009). An increasing proportion of Muslim women in Western nations are wearing hijabs, a scarf that covers the head, hair, neck, and ears but leaves the face uncovered (Ali, 2005; Read & Bartkowski, 2000). There is both academic and public political debate regarding the veiling of Muslim women as a form of subjugation (Read & Bartkowski, 2000), and many perspectives from which to view the covering of women: as related to human rights, cultural and religious tolerance, legal systems, etc. Jennifer Heath, editor of The Veil: Women writers on

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its history, lore, and politics, writes that "the veil has become a clichéd symbol for what the West perceives as Muslim oppression, tyranny, and zealotry – all of which have little to do with the real reasons why Muslim women veil," (Murphy, 2009, p. 13).

We believe that it would be useful to provide an understanding of cultural practices in an integrative evolutionary framework which combines knowledge of adaptations to ancestral selection pressures with historical and cultural context. We examine whether Muslim women's personal experiences regarding the hijab are consistent with the adaptive functions proposed by an evolutionarily-informed model. We are aware of the naturalistic fallacy of deriving values and proscriptions from evolutionary history and other properties of the natural world, and do not attempt to resolve political debates regarding these issues. Yet, we believe that a more thorough understanding may help generate a higher quality of discussion and even provide insight into one's own cultural practices regarding displays of sexuality.

### **Historical and Cultural Context**

The prophet Muhammad was born around 570 CE to a high social status family in the Arabian city of Mecca. Muhammad began a rapid period of military and political expansion that unified sparring tribes and in one century created an empire thought to be larger than any other in previous history (Donner, 1981). The ideological coherence and mobilization of the Islamic religion he founded is thought to be the primary factor in this rapid conquest (Donner, 1981). The cultural practices proscribed by Islam may also have contributed to the successes of political unification amongst pastoral tribes and the stability of male coalitions due to a reduction in conflict related to male mating competition, as discussed below.

Conservative, non-revealing clothing for women pre-dates the Islamic faith by thousands of years. It was a cultural feature of the Assyrian, Byzantine, and Persian Sasanian empires (Graeber, 2011; Keddie, 1991). Veiling, using clothing to conceal and cover the face, head, or entire body, was used in many forms across the ancient world (see Pazhoohi, Xygalatas, & Grammer, 2017) and was adopted by Judaic (Schiller, 1995), Christian (Karant-Nunn, & Wiesner 2003), and Islamic religious traditions (Keddie, 1991). Across ancient times, women's veiling was symbolic of piety, purity, and class, and there were often prohibitions keeping slaves and prostitutes from practicing it (Graeber, 2011). There are myriad cultural proscriptions for the public appearance of women in contemporary societies, and considerable variation even within the United States. For example, Orthodox Jewish communities require married women to cover their hair (Schiller, 1995).

There are two verses in the Quran which are typically used to justify the covering of women (Murphy, 2009, p. 17): Verse 24:31 "And say to the believing women That they should lower Their gaze and guard Their modesty; that they Should not display their Beauty and ornaments except What (must ordinarily) appear Thereof; that they should Draw their veils over Their bosoms;" and Verse 33:59, addressed to Muhammad and his family: "O Prophet! Tell thy wives and daughters And the believing women, That they should cast Their outer garments over Their persons (when abroad): That is most convenient, That they should be known (As such) and not molested." The Qur'anic passages refer to drawing a

curtain between women and unrelated men and wearing outer garments when women are outside of the household, rather than specific types of covering or areas to be covered. (Read & Bartkowski, 2000). As Islamic scholar and activist Ashraf Zahedi notes, these citations emphasize modesty and covering the bosom and neck; there is no specific mention of covering female hair or to a head veil (Murphy, 2009). There is a wide range in the types of female coverings in Islamic societies, from the now infamous Burqa of Afghanistan, which totally covers a woman from head to toe, to veils incorporating trendy modern fashions worn by young urban women.

### The Social Functions of Veiling

Mate guarding behaviors are a collection of tactics used to: 1) ensure sexual access to a mate; 2) prevent intrasexual competitors from gaining access to one's mate; and 3) prevent a mate from defecting from the mateship (Buss, 1988, 2002). Notably, the hadiths (second-hand reports of Muhammed's life) regarding the verses used to support the practice of veiling all depict the Qur'anic revelations on veiling as occurring in the context of events related to Muhammed's own personal mate guarding (See Read & Bartkowski, 2000). In fact, although the Surahs (24:31, 33:59) regarding veiling appear to be directed at women generally, because of the social circumstances in which these key Qur'anic passages were revealed, Islamic feminists argue that veiling was intended specifically for the wives of Muhammad, rather than for all women (Mernissi, 1991; Sherif, 1987).

Verse 33:59 explicitly notes that the purpose of female modesty in dress is to reduce male sexual attention. Consistent with this theme, women in Muslim countries often wear coverings to avoid sexual harassment and stares from men, especially in crowded public spaces (Murphy, 2009). There is also social pressure from women's husbands and male relatives, who assume that veiled women are also obeying Islam's prohibitions on dating and extramarital sex. Works geared towards acculturating women in covering traditions explicitly describe these as giving notice to men that the women are sexually unavailable and even suggest that women wearing western style (e.g., provocative) clothing such as short skirts are giving an open sexual invitation to men (e.g., Ismail, 2007). Other manuals are not shy about describing the intensity of male mating motivations; "the sexual desire in man is the strongest and most powerful after the desire for food. It is so strong and urgent that even in the absence of all temptation, it demands urgent satisfaction through sheer physical energy." (Siddiqi, 1947, p. 75).

The Quran also calls on men to be modest in Verse 24:30, and Verse 33:35 reveals that Allah has prepared "vast reward" for both "men who guard their modesty and women who guard their modesty" (Read & Bartkowski, 2000). However, there are no comparable practices of veiling for men. Men's sexual morality is rarely discussed, except in the context of women's temptations. In a revealing example of folk perspectives, during the Iranian revolution a conservative male writer stated that "it has been proven that the hair of a woman radiates a kind of ray that affects a man, exciting him out of the normal state," (Murphy, 2009, p. 19). Despite the misunderstanding of optic physics, the writer was apparently very aware of the salience of female sexuality in motivating men. Similar themes are

expressed by proponents of women's veiling, who argue that men are particularly vulnerable to corruption through casual sexual contact with women (Siddiqui, 1983). We find it notable that the theological and cultural justifications for women's veiling is based not in concern for women's behavior, but on the effect which viewing women has on men's behavior.

## An Evolutionary Framework for Understanding Cultural Regulation of Sexuality

Why would there be such greater concern for revealing women's bodies physically than for revealing men's bodies? Why would justifications of practices regulating women's behavior be based on men's motivations? The answers are ultimately rooted in our evolutionary history of sexual selection. There are many excellent works providing a more comprehensive account of human sexuality from an evolutionary perspective, so we will provide a brief summary specifically relevant to our topic.

Sex differences are usually shaped by the processes of sexual selection; intersexual selection and intrasexual competition (Darwin, 1871). Because females usually have greater costs for and investment in reproduction than males, females are usually more discriminating in mate choice (Trivers, 1972). Whereas females typically allocate more effort to parental investment in offspring than males, males allocate more effort to mating competition (acquiring new mates) than females. Male reproductive success (genetically contributing to future generations, a process which drives evolution) is strongly related to the ability to compete for mating opportunities, whether by winning fights with other males, competing for social status or territory, or by presenting displays preferred by females (Darwin, 1871).

Polygyny is the most common mammalian mating system, probably because of the prevalence of female specialization in infant nutritional provisioning and care and male specialization in mating effort (Low, 2003, 2007; Reichard & Boesch, 2003). In highly polygynous species, a few males will have many offspring while many others will have none. This creates powerful selection pressure for traits that lead to success in mating competition, even if detrimental in terms of health and longevity (Williams, 1957; Kirkwood & Rose, 1991; Stearns, 1992). Across species, higher degrees of polygyny correspond with greater male-male competition and risky male behavior (Plavcan, 2000; Plavcan & van Schaik, 1997; Plavcan, van Schaik, & Kappeler, 1995). Humans are far less polygynous than most other primates, but the positively skewed distribution of male reproductive success makes mating competition a potent selection force in humans (Betzig, 1986). Polygyny occurs in the vast majority of cultures (84%) documented by anthropologists (Ember, Ember, & Low, 2007) and the association between the degree of polygyny and male mortality risk across species is mirrored by variation within our own species (Kruger, 2010).

Potentially lethal violence is a facet of human male mating competition. This includes both within and between group conflicts (Chagnon, 1988). Violence may result from competition over access to and control of resources, as well as position in the status hierarchy (Buss and Shackelford, 1997). Men can successfully use violence to elevate their social status and gain respect from others (Campbell, 1993;

Chagnon, 1992; Hill & Hurtado, 1996). Men also have substantial mortality from non-violent risk taking, leading to higher numbers of accidents, especially when mating competition is most intense (Kruger & Nesse, 2004, 2006). Reducing the level of human male mating competition, possibly through reducing the salience of mating competition and mating opportunities, may bring social benefits due to the reduction in adverse consequences of male competition.

### **Social Functions of Islamic Veiling Customs**

Much of the conflict between the human sexes is focused on sexual behavior, and conflicts about power often center on sexuality and control over sexual access (Buss, 1993). Wilson and Daly (1992) proposed that men take a proprietary view of (a belief in a right or entitlement to) women's sexuality and reproductive capacity because of the adaptive problems of male reproductive competition and the risk of diversion of paternal investments to other men's offspring. Nearly all religious traditions condemn extramarital sex, and those who adhere to religious traditions have lower incidence of marital infidelity (Burdette, Ellison, Sherkat, & Gore, 2007). Strassmann et al. (2012) demonstrated that religions with more extensive regulations of women's sexuality are more successful at reducing cuckoldry incidence. Veiling is one of several social practices for confining and controlling women to monopolize their reproductive potential (Wilson & Daly, 1992).

There are several lines of evidence consistent with our proposal that Islamic veiling not only functions as mate quarding, but also reduces sexual competition among men. Women intentionally wear clothing they believe will be attractive to men, especially when they are interested in casual sexual relationships, and men are sensitive to these cues of women's mating interests (Elliot & Pazda 2012; Prokop & Hromada, 2013). Non-Muslim men rated unveiled women significantly more attractive than veiled women (Mahmud & Swami, 2009). Men are sensitive to differences in men's and women's physiological structures (Pazhoohi & Liddle, 2012), and viewing female figures indicating high fertility activates areas of men's brains associated with reward processing and appetitive behaviors (Platek & Singh, 2010). The body veiling proscribed by various religions obscures the estrogeninduced body curves of reproductive age (and nulliparous or non-pregnant) women and thus reduces their physical attractiveness to men (Pazhoohi & Hosseinchari, 2014). Male vehicle drivers (who were not professional taxi drivers) in Iran were nearly seven times more likely to offer a young woman a ride when she was wearing a hijab and form-fitting outfit covering her body but displaying its shape than a more conservative chador, a full-body cloak obscuring her body's curve profile (Pazhoohi & Burriss, 2016). There is also anecdotal evidence that wearing a hijab, or head covering, reduces harassment by men (Ali, 2005).

### **Current Study: Integrating Ultimate Explanations with Personal Experiences**

We conducted a survey of Muslim women to test our hypothesis that veiling of women functions to reduce the salience of mating opportunities for men, as indicated by a reduction in sexualized solicitations experienced by women. Our participants reside in the Midwestern USA, so we focus on the hijab, which covers one's hair but not one's face. The hijab may be the most common form of covering worn by Muslim women living in Western societies. We recognize that this methodology is unable to test other aspects of our argument, for example that institutionalized mate guarding reduced male conflict in intrasexual competition and thus facilitated the establishment of the Islamic Caliphates. We do not attempt to resolve any of the current political debates regarding the covering of women. Disagreements are likely to persist even within Muslim communities. However, we did include items to examine attitudes and beliefs regarding the restrictiveness of the hijab, which is related to current political debates.

### **METHODS**

### **Participants**

We conducted an Internet-based survey to examine attitudes and beliefs related to wearing the hijab during the Winter of 2010. We solicited participation from Muslim women (N = 66, M age = 29, SD age = 11) affiliated with a Muslim student association at a large public research university in the State of Michigan (USA) and also encouraged these women to forward the survey to other potential participants. Although participants were predominantly living in the USA, 46% of participants had lived in a predominantly Muslim country. Those who have lived in a predominantly Muslim country lived an average of 11 years (SD = 7) and 44% of their life (SD = 29) in these countries. The university is located in Southeastern Michigan, an area recognized for having one of the largest concentrations of people with Middle Eastern ancestry in North America. Statewide, Arab was the largest non-European ancestry in 2013 (1.8% of the population; United States Census Bureau, 2013) and about 1% of adults across the state identify as Muslim (Pew Research Center, 2007). Southeastern Michigan is home to the largest mosque in North America, the Islamic Center of America, in Dearborn. Women wearing the hijab are commonly seen on the university's campus, and may be more prevalent in this region than in other areas in the USA.

### **Assessments and Measures**

We asked whether or not participants currently wear the hijab at least some of the time. Participants utilized a numeric 11-point decile scale labelled with response options ranging from 0% to 100% (i.e., 0%, 10%, 20%, ... 100%) to rate how influential the following are in their decision of whether or not to wear the hijab: What I think and feel; What my friends think and feel; What my family members

think and feel; Personal modesty; Culture and tradition; Family members; Allah's message in the Quran; and Habit, just used to it. Using the same 11-point decile scale, participants also rated the items: How restraining do you feel the hijab is? How awkward do you feel wearing the hijab in public places? How oppressed do you feel wearing the hijab? We also gave participants an opportunity to elaborate on their responses in and open-ended comments item. Data were recoded to represent the values selected by participants (i.e., 0, 10, 20, ... 100).

Participants also indicated the extent to which they agreed or disagreed with the following statements on a fully labeled five-point bipolar scale (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree): Wearing the hijab reduces unwanted attention from men; People treat me differently because I wear a hijab; Wearing the hijab expresses who I am as a person; Wearing the hijab has been a barrier in my education; If the people I worked with were uncomfortable with my hijab, I would take it off; and I would apply to work in a job where I was required not to wear a hijab.

### **Analyses**

We generated descriptive statistics and conducted exploratory analyses. We used a forward conditional binary logistic regression to predict whether or not participants currently wear the hijab at least some of the time with the following variables as potential predictors: age, years living in North America, years living in a Muslim country, proportion of life living in a Muslim country, personal religiosity, religiosity of friends, religiosity of family members, proportion of friends who are Muslim, and proportion of time spent socializing with people who are Muslim.

### RESULTS

The majority (77%) of respondents reported wearing a hijab at least some of the time. The two independently significant predictors of currently wearing a hijab are how religious the woman is and the proportion of her friends who are Muslim (See Table 1). Once these factors were accounted for, age, years living in North America, years living in a Muslim country, proportion of life living in a Muslim country, religiosity of friends, religiosity of family members, and proportion of time spent socializing with people who are Muslim did not account for any additional variance.

# Influences for Wearing the Hijab and the Hijab's Influence on Participants' Experiences

Participants perceived Allah's message in the Quran and what they think and feel to be the strongest influences in their decisions to wear of the hijab, followed by personal modesty (See Table 2). Participants had a moderate endorsement of wearing the hijab as a habit and saw what their family members and friends think and feel and culture and tradition as relatively less important. Overall, participants

did not feel that the hijab was restraining or oppressive, and did not feel awkward wearing the hijab in public places. These responses included the 25% of participants who did not currently wear the hijab at least some of the time.

### The Consequences of Wearing the Hijab

As predicted, the majority of participants who currently wear the hijab felt that wearing the hijab reduces unwanted attention from men (See Table 3). Participants generally felt that the hijab was an expression of their personal identity and although they generally felt that people treat them differently because they wear a hijab, they did not see wearing the hijab as a barrier to their education. The vast majority of participants would not take off their hijab if their co-workers were uncomfortable with it and would not apply to work in a job where they were required not to wear a hijab.

### **Qualitative Responses**

We also gave participants an opportunity to elaborate on their responses in and open-ended comments item. The open-ended comments item provided qualitative elaboration. Here we include a sample of responses that expresses general themes found in participants' comments. Participant A: "I feel as though I face more discrimination in school and the workplace from non-Muslims because I wear a hijab and they feel that I am a lesser, more ignorant individual for doing so. It is difficult because their discrimination limits me just as racism limits people of color but that experience has made me stronger in my conviction to be true to myself." Participant B: "Well there is a huge misconception that Muslim women are oppressed by wearing a hijab, for most girls wearing a hijab is by choice." Participant C: "With regard to people treating me differently, I've always been treated with more respect than I would have expected otherwise." Participant D: "Hijab itself is not oppressive, but the stereotypes about it are."

### DISCUSSION

Our project combines the etic (outside perspective of academics) and emic (perspective from within the social group) viewpoints in understanding the functions of traditional Islamic covering of women. However, we would not be satisfied with an em-etic stance generated from the standard social science model of proximal causes. An evolutionary framework provides ultimate explanations for functional cultural practices. Our survey results support our argument that such garments reduce the salience of mating opportunities for men. This important, perhaps primary, function is explicitly acknowledged by many of the proponents of such practices, although it often overlooked in the current public debates. Reducing within-group male competition for reproductive access to women, as well as competition for the resources and social status that are associated with male reproductive success, may have been critical in forming a unified political entity from formerly adversarial pastoral tribes. This would also bring benefits to high status

males interested in retaining and expanding their powers, who would thus have an incentive to perpetuate such a system.

Three-quarters of our sample of Muslim women currently wore the hijab at least some of the time. Personal religiosity was the strongest statistical predictor of wearing the hijab (See Table 1). Similar to views of the Bible in some Christian denominations and groups, many Muslims believe that the Qur'an is the actual Word of God that was recorded by Muhammed during his lifetime (Read & Bartkowski, 2000). Participants own reports were consistent with this finding, "Allah's message in the Quran" and "What I think and feel" were the most important reasons expressed for wearing the hijab (See Table 2). These factors were considered more important than personal modesty, which was also considered of high importance, and more important that the beliefs of family and friends. The proportion of the woman's friends who are Muslim also predicted wearing the hijab independently of other factors, so further research will be necessary to clarify the importance of and mechanisms for peer influence.

Scholars have previously reported identity, ideological, and political factors as a basis for women's motivation in veiling, such as affirming authentic Muslim and American identity (Haddad, 2007), critiquing Western colonialism in the Middle East (Read & Bartkowski, 2000; Haddad, 2007), and affirming trust in guarantees of freedom of religion and speech (Haddad, 2007). In contrast, our participants rated "Culture and tradition" considerably lower than "Allah's message in the Quran" (d = 2.87), "What I think and feel" (d = 2.76), and "Personal modesty" (d = 1.70) as reasons for wearing the hijab. We note that our results are likely reflective of the time and place in which the study was conducted, and motivations could change in response to political and historical events.

Women who wore the hijab were largely positive in their perceptions of their experiences (See Table 3). Many who felt that they were treated differently when wearing the hijab later qualified that they felt they were treated better when wearing one. They did not consider wearing the hijab as a barrier to education. However, most would not apply to a job where there was a prohibition on wearing the hijab and would not take off their hijab if it made their co-workers uncomfortable. Participants' responses mirrored media editorials from young Muslim women living in western nations. Rather than see the hijab as a "symbol of oppression, subjugation, repression, and allegiance to fundamentalist beliefs," Husna Haq (2009, p. 17) believes "...for me hijab is liberation. It is the freedom to assert my identity and live according to my values."

### **Limitations**

Our research context differs in relevant ways from both previous research and aspects of the political debate. The political context includes nominal separation of religion and government, there are no laws prohibiting or requiring religious veiling. Although a substantial component of the regional population and significant aspect of the cultural landscape, Muslims are still a minority at the municipal level. There is a wide variety of veiling customs and garments, including partial face (nikab), full body (chador), and full face and body (burka) coverings. Some of the current political debate focuses on the covering of women's faces. The "liberal" outfit

of headscarf and form fitting clothing used for the observational study in Iran (Pazhoohi, F., & Burriss, 2016) would be considered conservative in the USA. The generally positive responses were to a garment that is less restrictive than others worn in some Muslim populations. We may have received a very different set of responses if our questions asked about attitudes towards the burka, a full body and face covering. Also, the women in our sample generally perceived wearing the hijab to be their choice, this is not the case in all Muslim societies. There is a continuum of social norms regarding the covering of women's bodies in public places. In some areas, women are allowed to go topless, whereas in others their ankles must be covered. The message conveyed by a woman's outfit is likely relative to the normative customs in the local context.

Our sampling method may have restricted the range of responses, as we recruited from participants in Muslim campus organizations, who may be more likely to embrace Muslim identity. Still, many of our participants were above traditional age of college students and thus may be friends and family members of organization members. We believe that the anonymity of our survey and participant recruitment facilitated through a Muslim student association may have reduced demand characteristics and response bias.

### Theoretical Issues and Directions for Future Research

Although there were sedentary farmers and merchants during Muhammad's lifetime, as well as permanent settlements, much of the regional population consisted of nomadic pastoral tribes. Cross-culturally, pastoralism is associated with a "culture of honor," where reputations for swift and disproportionate revenge are encouraged because one's livestock (and thus one's livelihood and social status) could be quickly stolen (Nisbett & Cohen, 1996). When transgressions are not subjected to property law enforcement by governmental entities, one must create a reputation (and often the reality) of retaliation in order to protect one's resources and social status. It is thought to be difficult to transition from a culture of honor to a culture of law, because this would require delayed and bureaucratic responses to transgressions, which would be interpreted as weakness in a culture of honor. Thus, male competition for social status, resources, and mates was likely to be relatively intense.

There have been other evolutionary frameworks used to provide ultimate explanations of Islamic veiling of women in terms of adaptive functions. Dickemann (1981) argues that confinement of daughters and dowry competition enables a woman's family to compete for high status and wealthy grooms, who will likely provide high levels of paternal investment and recapitulate high social status in offspring. However, Pazhoohi, Xygalatas, and Grammer (2017) note that this explanation is limited to high status families in highly stratified societies and argue instead that mate guarding facilitates biparental care through paternity certainty. This argument is based on Gangestad and Simpson's (2000) Strategic Pluralism Theory, which proposes that the need for biparental care is especially important in harsh and demanding environments. It also calls upon Schmitt's (2005) finding that cultures with greater environmental adversity (e.g., higher stress, fewer resources, higher mortality), are more likely to favor monogamy, have higher levels of self-

reported paternal investment, and have lower incidence of self-reported short-term sexual relationships and extra-pair mating in women.

We argue that the mate guarding inherent in women's veiling reduces the salience of male mating competition and skew in male reproductive outcomes, in societies with a moderate degree of polygyny and thus institutionalized male reproductive skew. The degree of polygyny is analogous to male reproductive inequality. Schmitt (2005) also found high male promiscuity and greater divergence between men's and women's sociosexualty in cultures with greater environmental adversity. Constraining women's sexuality to ensure paternity certainty while creating several lineages through multiple female mates creates a successful polygynous reproductive strategy. Polygyny occurs in the vast majority of cultures (84%) documented by anthropologists (Ember, Ember, & Low, 2007). Human populations vary in their degree of polygyny, which covaries with pathogen stress and male mortality in warfare (Ember et al., 2007). Polygyny is also prevalent in human societies where there is substantial inequality in resources and social status (Borgerhoff Mulder, 1990; Orians, 1969).

When some men are able to retain multiple female partners, the higher the effective sex ratio (the ratio of reproductively active men to women) will be (Hendrix, 1996). Higher levels of polygyny are associated with greater intensities of male mating competition and greater consequences of male mating competition in terms of mortality (Kruger, 2010). Religious and cultural practices constraining women's sexuality are stronger in populations with male biased sex ratios (Guttentag & Secord, 1983). Raffield, Price, and Collard (2016) argue that the Viking raids in Medieval Europe were a product of an effectively high sex ratio created by the practices of polygyny and concubinage. A large number of unmarried men competed to secure sufficient wealth and status to pay the brideprice to a woman's family necessary to marry her. Raiding expeditions represented the elevated risk in male strategies, both to kidnap foreign women and pillage resources for bridal payments. Raffield et al. (2016) argue that the promotion of monogamy is an underrecognized factor in the Christianization of Scandinavia and end of the Viking age. Weisfeld (1990) notes that in modern Arab societies, restrictions on women are associated with the degree of economic stratification, rather than the degree of polygyny. In these societies, veiling serves as an adjunct to female confinement and barrier to romantic entanglements not in line with family interests (Weisfeld, 1990).

The degree of polygyny in a population influences the intensity of male mating competition, greater male mating competition is associated with riskier behavioral and physiological strategies, higher levels of violence, and greater mortality risk. The local cultural practice of polygyny pre-dates the Islamic religion (Ahmed, 1992), and among Arabian tribes there were no restrictions on the number of wives that a man could have (Ahmed, 1992; Ali, 1883). Though the nominal Islamic allowance for four wives explicitly endorses polygyny, adhering to this limit would actually constrain the level of male reproductive skew compared to unregulated polygyny. Each of these functional explanations for veiling of women; competition for paternal investment and high social status (Dickemann, 1981), reduction of paternity uncertainty and facilitation of biparental care (Pazhoohi, Xygalatas, & Grammer, 2017), and reduction in adverse male mating competition

behaviors (this paper), may be true to some extent as they are not mutually exclusive.

### CONCLUSION

We generate evidence that Muslim women recognize the reduction in male mating completion associated with veiling. Segregation of the sexes and the covering of women when in public spaces would reduce the salience of reproductive opportunities and skew in male reproductive outcomes. This may suppress male mating competition, reduce within-group conflict, and facilitate group solidarity and inter-group competition. Powerful males would gain other benefits, such as increased paternity confidence. Sex differences in the public display of sexuality are understandable given the divergence between male and female reproductive strategies. Across cultures, there is considerable range in the amount of one's body considered appropriate to cover in public. Such variation likely reflects the interplay of ecological and historical factors. Our scientific approach to understanding a contentious cultural issue attempts to provide a deeper understanding of the relevant issues, rather than determining priorities among sets of moralistic values. An integrative evolutionary framework may be especially effective at promoting productive dialogue by illustrating the cultural solutions to the universal challenges faces by ancestral humans.

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### Why the Hijab?

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### **APPENDIX A**

Table 1.

Predictors of current wearing of a hijab (*N*=66)

Predictors	Unstand Coeffi <i>B</i>	Wald	p	
Constant How religious are you? What proportion of your friends are Muslim?	-2.87	1.17	6.03	.014
	0.70	0.32	4.69	.030
	0.23	0.10	4.29	.021

### **APPENDIX B**

Table 2.

Participants perceived influences for wearing the hijab and the hijab's influence on participants' experiences.

Item	Min	Max	М	SD						
How influential are the following in your wearing of the hijab?										
A. Allah's message in the Quran	0	100	92.78	17.48						
A. What I think and feel	0	100	91.72	18.51						
B. Personal modesty	0	100	76.42	31.19						
C. Habit, just used to it	0	100	47.11	37.75						
C. What my family members think and feel	0	100	31.85	34.81						
CD. Culture and tradition	0	100	23.42	30.93						
D. What my friends think and feel	0	100	18.01	27.08						
How restraining do you feel the hijab is?	0	100	15.76	25.00						
How awkward do you feel wearing the hijab in public places?	0	80	9.80	17.64						
How oppressed do you feel wearing the hijab?	0	70	1.92	9.33						

*Note*: Responses for items sharing headers (A, B, C, D) do not significantly differ from each other. Response scale options ranged from 0-100%.

### **APPENDIX C**

Table 3.

Beliefs regarding the consequences of wearing the hijab among those who wear it at least some of the time.

Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	<i>t</i> (50)	d
Wearing the hijab expresses who I am as a person.	4	9	10	37	40	9.59	1.34
People treat me differently because I wear a hijab.	3	4	20	45	28	8.52	1.19
Wearing the hijab reduces unwanted attention from men.	6	14	9	38	33	5.38	0.75
Wearing the hijab has been a barrier in my education.	62	29	9	0	0	-19.50	-2.73
If the people I worked with were uncomfortable with my hijab, I would take it off.	82	13	4	0	1	-19.84	-2.77
I would apply to work in a job where I was required not to wear a hijab.	77	12	7	2	2	-20.35	-2.84

*Note*: Responses to all items are significantly different from neutral, p < .001. Results of one-sample t-tests indicate significant differences from neutral, i.e., Neither Agree nor Disagree.