

Major Histocompatibility Complex Alleles, Sexual Responsivity, and Unfaithfulness in Romantic Couples

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The Claim

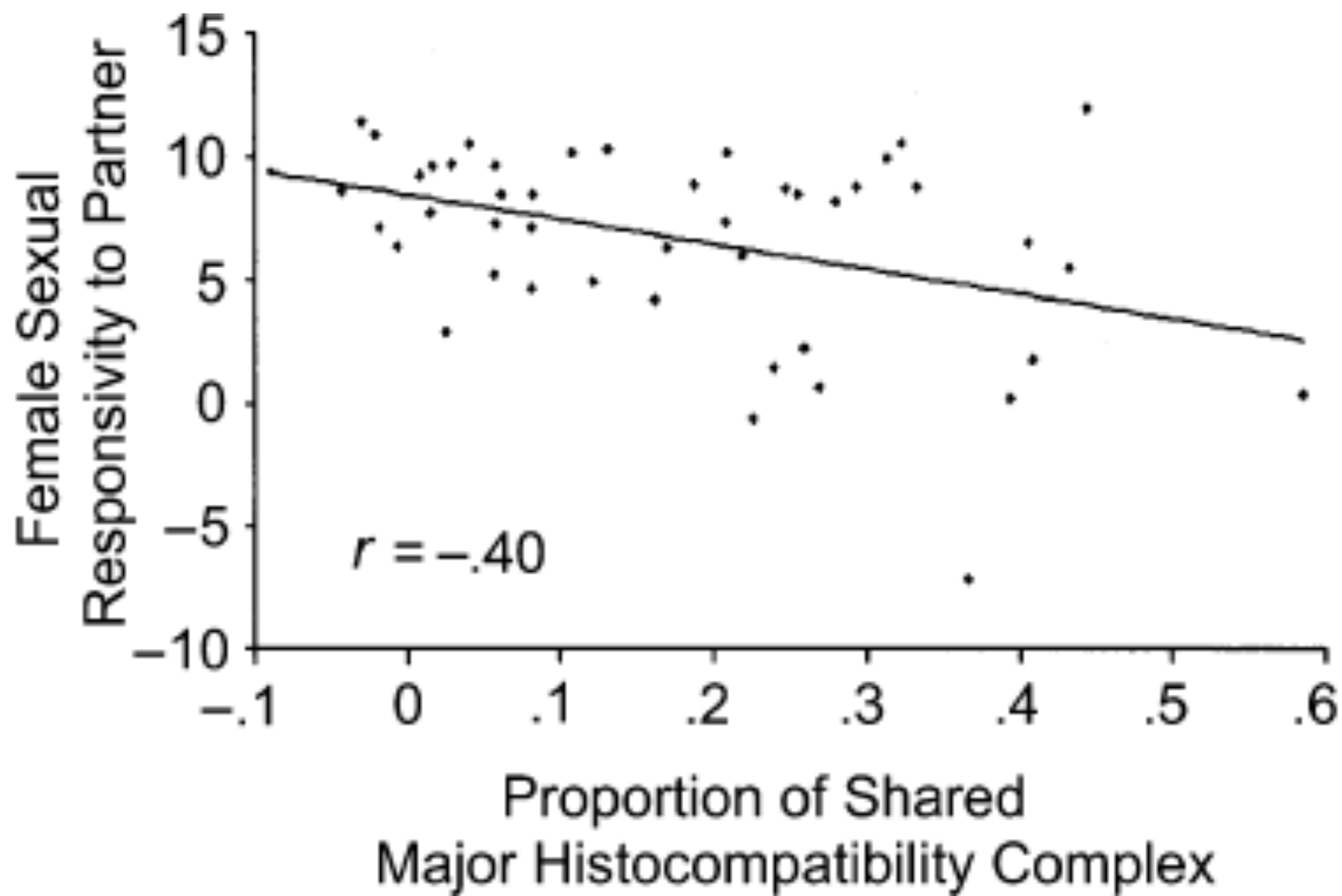
The benefit of pursuing an EPC to obtain genetic benefits for offspring depends on the genetic quality of the primary mate: with high genetic quality primary partner, the potential benefits of engaging in an EPC might be small..., genetic compatibility between partners at the major histocompatibility complex (MHC, loci associated with the immune system for which genetic dissimilarity between partners potentially enhances the immunocompetence of offspring) predicts female sexual relationships depending on their fertility status: **MHC sharing negatively predicts a woman's sexual attraction and sexual responsiveness to her current partner and positively predicts her attraction to other men, particularly during the fertile phase of her cycle [13]. Furthermore, a high level of MHC sharing also predicts a woman's reported number of extra-pair partners [13]**

“The current study is the first to test the hypothesis that MHC similarity predicts aspects of actual human sexual relationships”

Methods

- Three private questionnaire sessions: Start, fertile, luteal
Relationship satisfaction, Partner's perceived satisfaction, Partner Specific Investment Inventory, number of sexual partners (EPC, etc), Sociosexual Orientation Inventory
- During low and high fertility sessions, participants were asked about sexual arousal in the past 2 days
- Luteinizing hormone tests
- Typed for MHC alleles
- Controlled for relationship duration and participant age

Results



Results

TABLE 1

Partial Correlations (η) Between Sexual Behaviors and Sharing of Major Histocompatibility Complex (MHC) Alleles

Sexual behavior	MHC sharing	MHC Sharing \times Fertility Status	MHC sharing	
			High-fertility session	Low-fertility session
Frequency of sex	-.24	-.11	-.20	-.15
Female-initiated sex	.08	.00	.05	.04
Male-initiated sex	.00	.11	.05	-.08
Women's report of orgasm	-.27	-.36*	-.39*	-.09
Women's rejection of male	.40*	.42*	.34 [†]	.14
Men's rejection of female	.16	.21	.19	-.19
Women's compliant sex	.40*	.03	.35*	.22

Note. Relationship duration (log-transformed), female's age, and order of sessions (high fertility first vs. low fertility first) were controlled in these analyses using repeated measures general linear modeling on SPSS. Positive MHC Sharing \times Fertility Status values reflect more positive associations between MHC sharing and the variable during the high-fertility phase than during the low-fertility phase; negative values reflect the converse. All analyses were based on participants' frequency estimates of events in the past 2 days. *Frequency of sex* was based on both partners' responses to "Had sex with a primary current partner." *Initiated sex* was based on self-reports on "Initiated sex." *Women's orgasm* was based on self-reports on "Experienced orgasm with a primary current partner." *Rejection* was based on self-reports on three items ("Was rejected after I initiated sex with my partner," "Got angry at my partner for rejecting sex with me," "Had my feelings hurt when my partner rejected sex with me") and partner's reports on three items ("Rejected my partner's attempts to initiate sex," "Made my partner angry for rejecting sex with [him/her]," "Caused my partner to have [his/her] feelings hurt when I rejected sex with [him/her]"). (Hence, these analyses partly reflect partners' reactions to rejection.) *Women's compliant sex* was based on women's responses to "Had sexual intercourse with my partner even though I didn't want to because he threatened to end our relationship otherwise" and "Had sexual intercourse with my partner when I didn't want to because I felt pressured by his continual arguments." All men reported zero frequency of their own or their partners' compliant sex.

[†] $p < .10$ (two-tailed), $p_{rep} > .878$. * $p < .05$ (two-tailed), $p_{rep} > .917$.

Results

With increased MHC sharing,

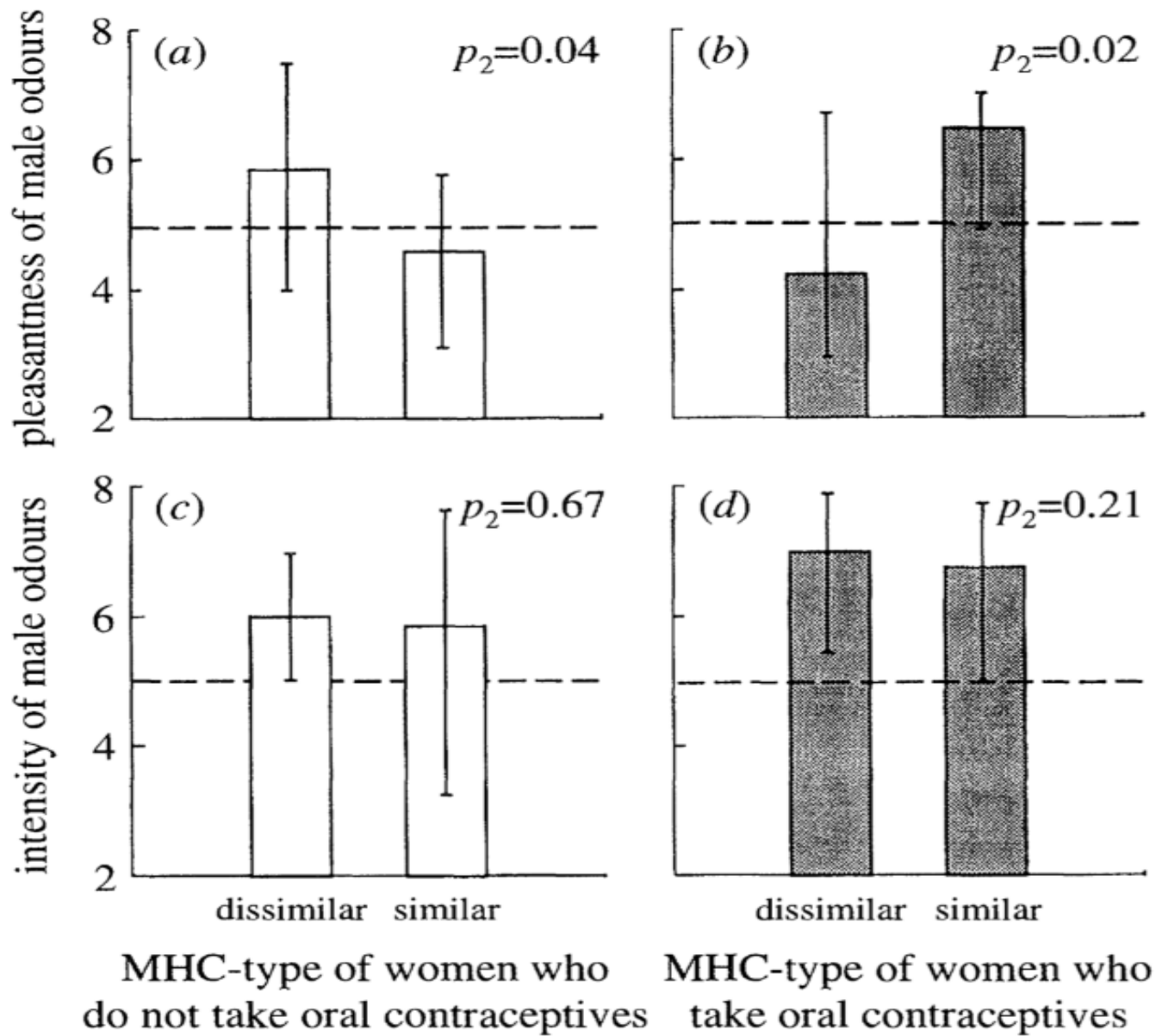
- Less sexual responsiveness
- Women's satisfaction with extent of arousal by partner decreases
- Men's satisfaction with sexual adventurousness of partner decreases
- Women report more extra pair sexual partners during **current** relationship (adjusted for willingness to have casual sex), but not past
- Attraction to extra pair men increased more positively than attraction to partners- only during fertile phase
- Men's responsiveness, arousal by partner, extra pair sex unchanged, but men perceived partners to be less satisfied with their sexual adventurousness

Same results came from both self and partner reports

“Though it is predictive of women's sexual satisfaction, MHC sharing does not broadly predict relationship satisfaction” or frequency of sex

MHC-dependent mate preferences in humans

To show that MHC influences body odor and mate choice, women rated odor of men with similar and dissimilar MHC loci through t-shirts worn overnight. Women were tested in the second week after beginning menstruation. Results show that women not on oral contraceptives found men with dissimilar MHC's more pleasant, but this *reversed* when women were on contraceptives. Dissimilar respective MHC's also reminded women of previous mates, indicating it is involved in mate choice.



Significance

- **“MHC sharing negatively predicts a woman’s sexual attraction and sexual responsiveness to her current partner and positively predicts her attraction to other men, particularly during the fertile phase of her cycle [13]. Furthermore, a high level of MHC sharing also predicts a woman’s reported number of extra-pair partners [13]”**

-Provides a dependable scientific basis for role of MHC in mate selection

-Implies with certainty that manipulating MHC-related mate preference will have a definite effect on sexual attraction and satisfaction