The relationship between the ovulation cycle and 17β-estradiol level with the preferences of women to male partners

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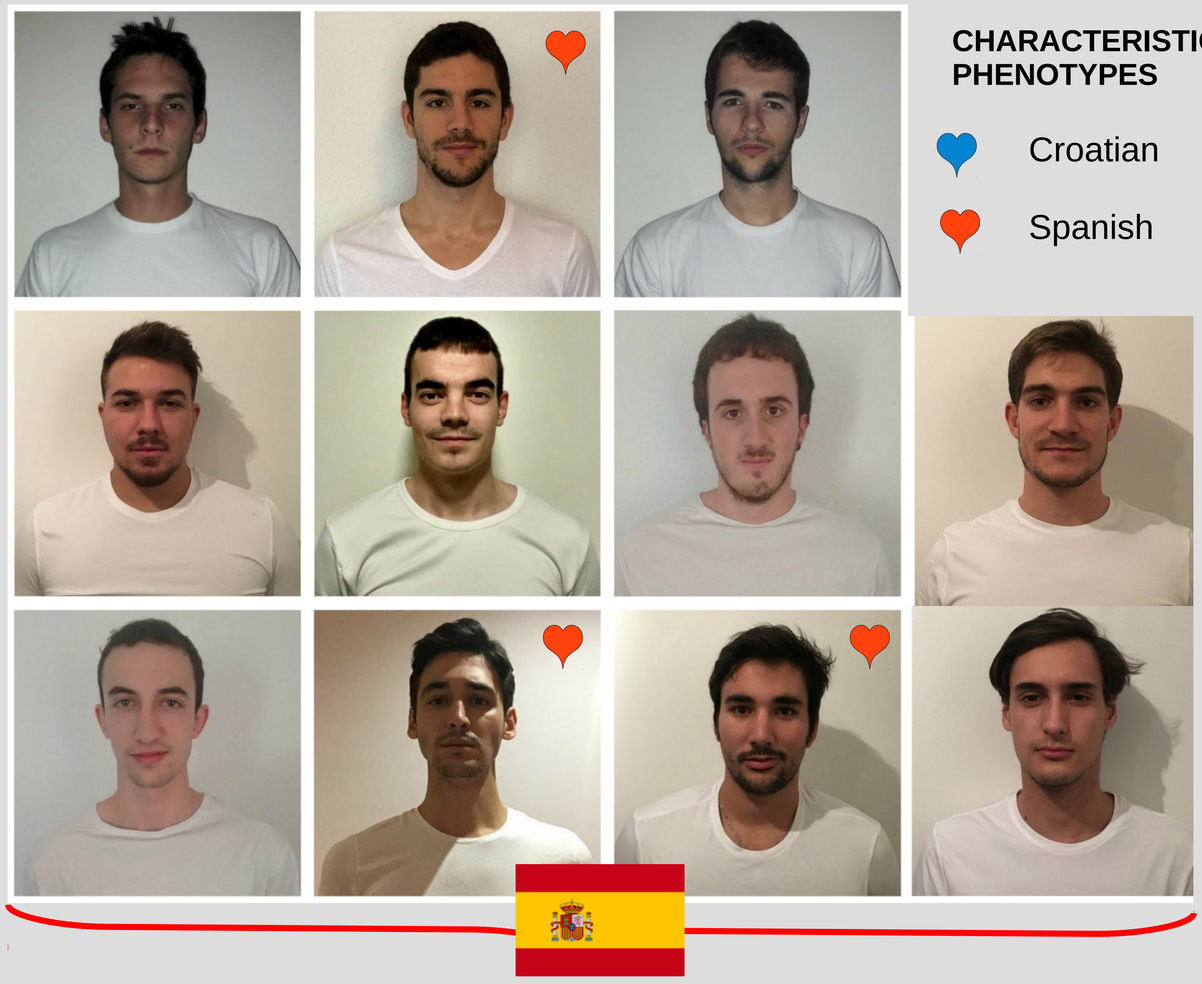
INTRODUCTION

Sex hormones' level changes across the ovulation cycle, affecting women's behavior [1, 2]. There are competing theories on the effect of ovulation on romantic preferences towards outgroup members. One theory postulated ovulating women would be more receptive towards outgroup members as it would promote genetic diversity [3], while other reported increased ingroup bias in ovulating women, presumably due to historically violent encounters with outgroup members [4].

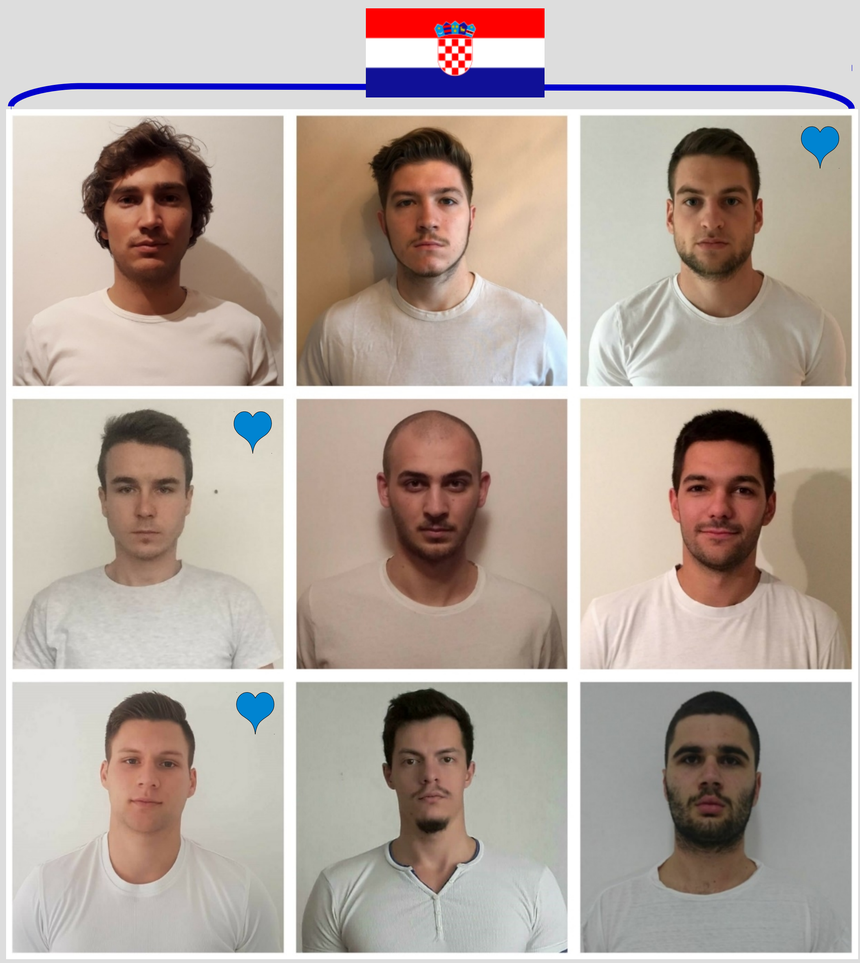
AIM. The aim of the study was to examine how ovulation affected the relationship between perceived physical attractiveness, strength and caringness on short-term and long-term mate suitability for both ingroup and outgroup members.



CHARACTERISTIC PHENOTYPES

Croatian

Spanish



CONCLUSIONS

Distinct Spanish and Croatian phenotypes were recognized. For non-ovulating women, ATT of ingroup was related to STM and LTM desirability, while of outgroup only to STM desirability. For ovulating women, ATT was highly related to STM and LTM desirability for both groups. CARE was strongly related to STM and LTM desirability only for ingroup, while STR equally related to STM and LTM desirability in ingroup/outgroup conditions, but more in ovulating women. In ovulating women, the relationship between positive mate traits and both STM and LTM desirability were stronger while most ingroup/outgroup differences disappeared. The effect physical formidability was equal in all conditions. These findings agree that ingroup bias is weakened during ovulation.

MATERIAL AND METHODS

PILOT STUDY. 165 women (18 –30y old) participated. The pilot study was an online survey, composed of 20 standardized photos (above) from which women had to value five characteristics (physically attractive, dominant, strong and masculin) for each. Participants also had to estimate if the man is of Croatian or Spanish nationality.

MAIN STUDY. 110 women participated. Out of 110, 2 were homosexual and 11 were using humoral contraception, thus were excluded from the study. In the morning of the research day women took ovulation test (One step/Ovu gnost) and did an online survey. They were asked about personal data and then were given 20 photographs in which they had to value five characteristics (ATT, attractive as LTM, attractive as STM, STR and CARE) for each. The data were analyzed by correlation analysis (multivariate analysis of variance – MANOVA performed in IBM SPSS) [6].

RESULTS

In the Pilot study, the participants were able to reliably discen the ethnicity of the six men (3 Croats and 3 Spaniards, see 'hearts' in the photos above). The others were on average rated as undiscernable. Images of the those six men were analysed in the Main Study (Table 1. and Table 2.)

Table 1. Main study. *Correlation between male characteristics evaluated by ovulating participants.* [**SP** – Spaniards, **CRO** – Croats, **ATT** – physical attractiveness, **CARE** – care, **STR** – strength, **LTM** – long term mate, **STM** – short term mate, * p < 0.05, ** p < 0.01]

	SP_LTM	**SP_STM**
SP_ATT	0.890**	0.789**
SP_CARE	0.568*	0.329
SP_STR	0.603**	0.621**
Croats	**CRO_LTM**	**CRO_STM**
CRO_ATT	0.907**	0.828**
CRO_CARE	0.811**	0.616**
CRO_STR	0.665**	0.740**

Table 2. Main study.*Correlation between male characteristics evaluated by non-ovulating participants* [abbreviations – Table 1.]

	SP_LTM	**SP_STM**
SP_ATT	0.458	0.691**
SP_CARE	0.400	0.068
SP_STR	0.594*	0.541*
	CRO_LTM	**CRO_STM**
CRO_ATT	0.842**	0.608**
CRO_CARE	0.684**	0.287
CRO_STR	0.598*	0.558*

REFERENCES. [1] Gangestad SW, Garver-Apgar CE, Simpson JA & Cousins AJ. 2007. *J Pers Soc Psychol* 92(1), 151-63; [2] Pillsworth EG, Haselton MG & Buss DM. 2004. *J Sex Res* 41, 55-65; [3] Salvatore JF, Meltzer, AL, March DS & Gaertner L. 2016. *Psychol Bull* 43(2), 204-217; [4] Brindley S, McDonald MM, Welling LLM, Zeugler-Hill V. 2018. *Comprehesive Results in Social Psychology* 1-28. [5] IBM Corporation. 2017. *IBM SPSS Statistics for Windows* v. 25.0. Armonk, New York.