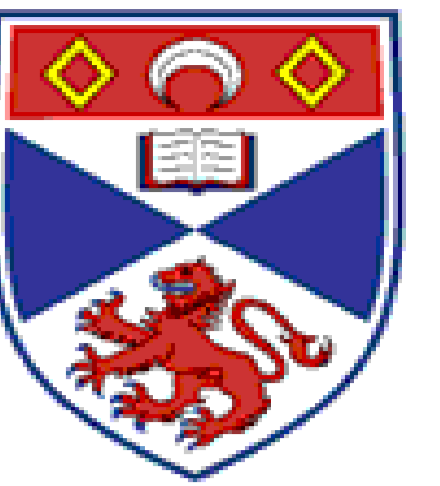


Cuteness Predicts Motivation to View Infant Faces

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Introduction

Adults exert more key-pressing effort to view attractive opposite sex adult faces compared with average looking faces (Aharon et al 2001). Infant faces have a distinct configuration, with large eyes, low set features and a bulbous forehead. Such a configuration, commonly referred to as cute activates 'brain reward' circuitry in similar fashion to attractive adult faces (Bartels & Zeki 2004), yet the effect of cuteness on the motivation to view infant faces has not been measured. Sprengelmeyer et al (2009) found that sensitivity to cuteness is modulated by female reproductive hormones with hormonal contraceptive users demonstrating the highest level of sensitivity, followed by naturally cycling women, followed by men and post-menopausal women. These findings suggests that motivation to view infant images may be hormonally modulated, paving the way for imaging studies of sex differences, hormone effects and clinical conditions (e.g. postnatal depression).

Objectives

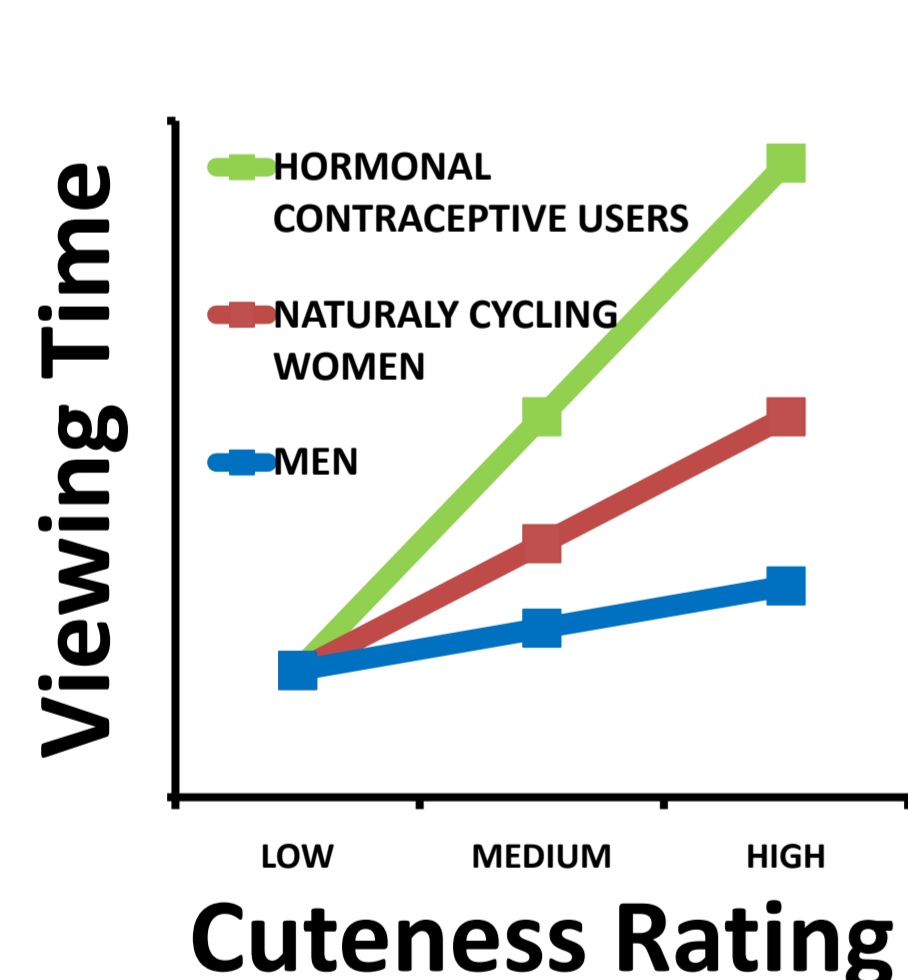
- To determine if there is a positive correlation between cuteness and motivation to view infant images
- To determine motivation to view infant images via key pressing is modulated by female reproductive hormones
- To determine if there are hormonally modulated changes in the motivation to view infant faces over the course of the menstrual cycle

Methods

Task 1 In a 'pay per view' paradigm participants key-pressed to control how long they viewed infant images varying in cuteness

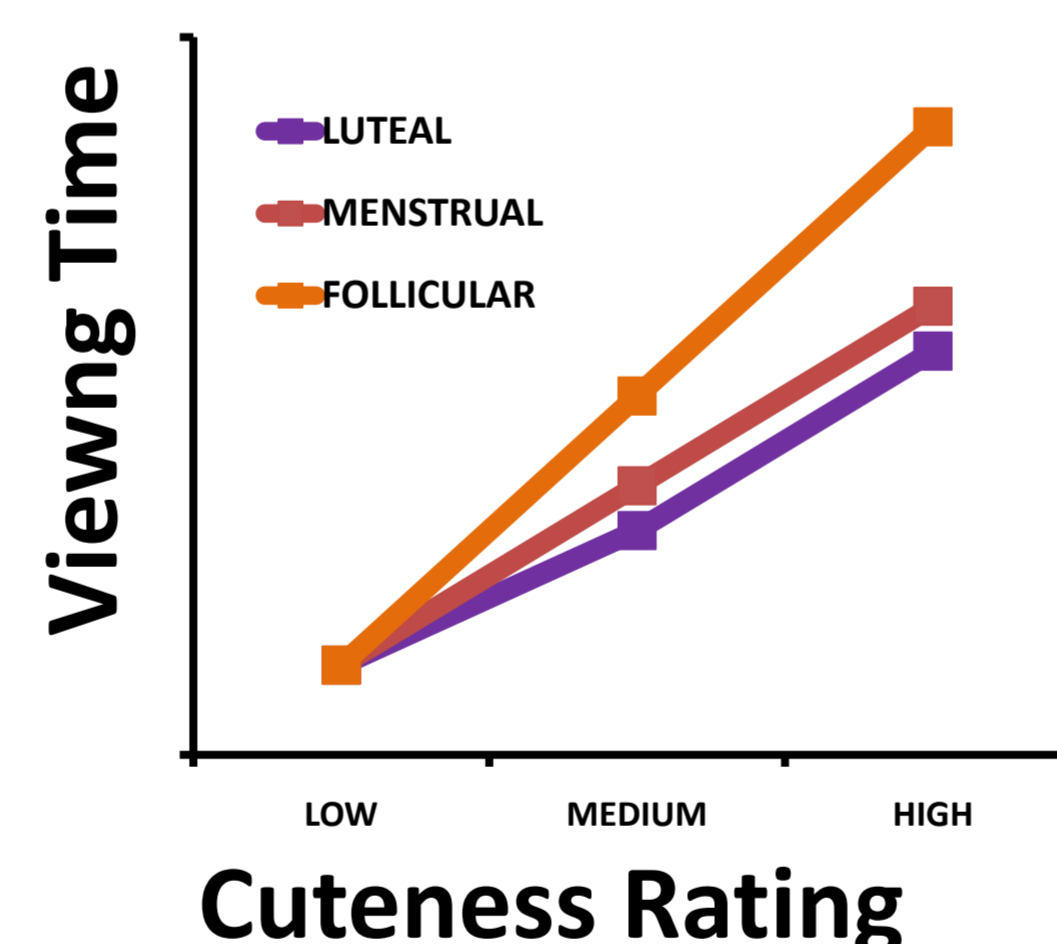
Task 2 Participants rated each image on a 5 point Likert Scale for cuteness.

Predictions



•Cuteness rating and viewing time will correlate positively.

•Cuteness rating will have the greatest effect on viewing time in hormonal contraceptive users (left), and during the follicular phase in naturally cycling women (right) when estrogen levels are highest



Results

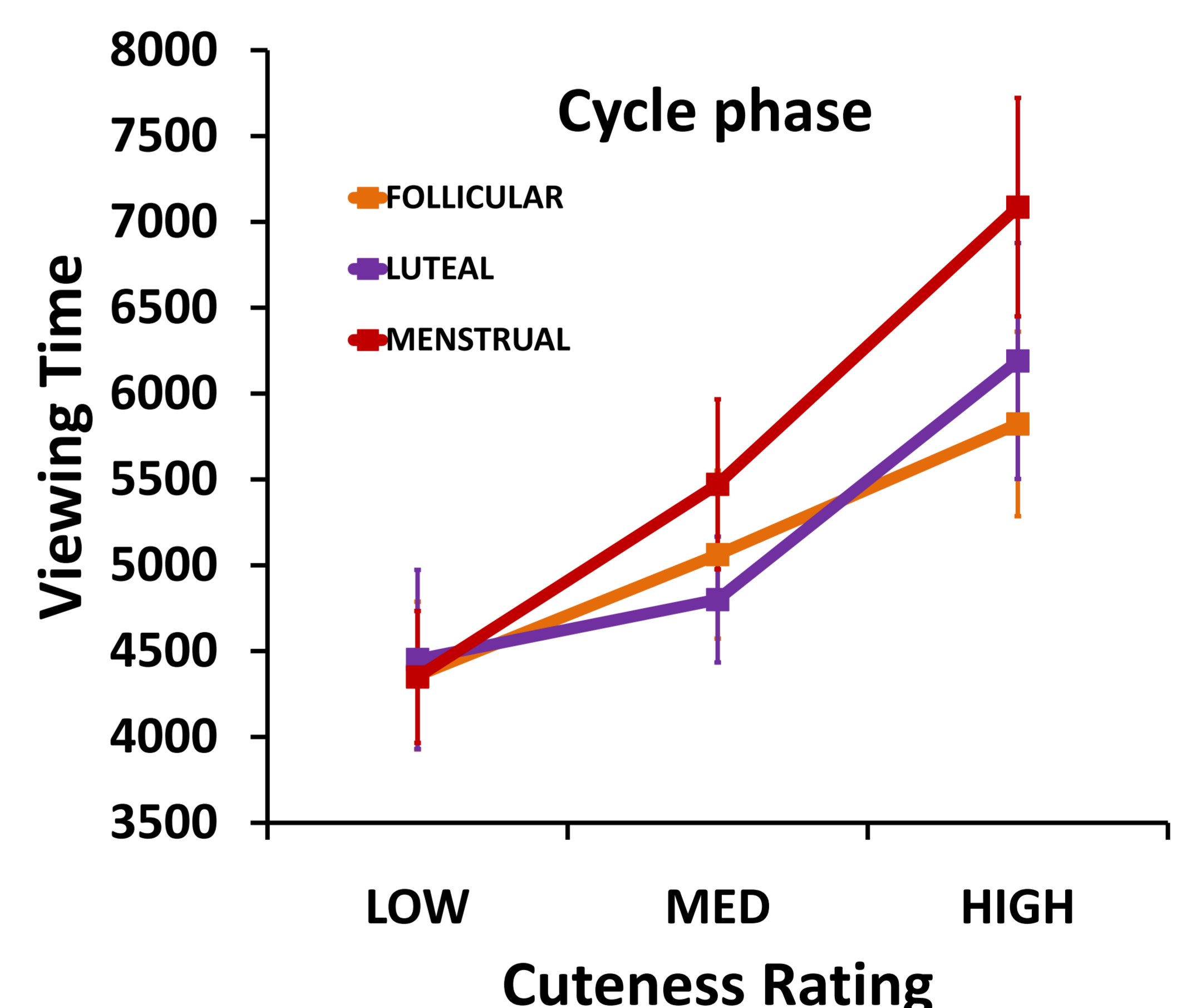
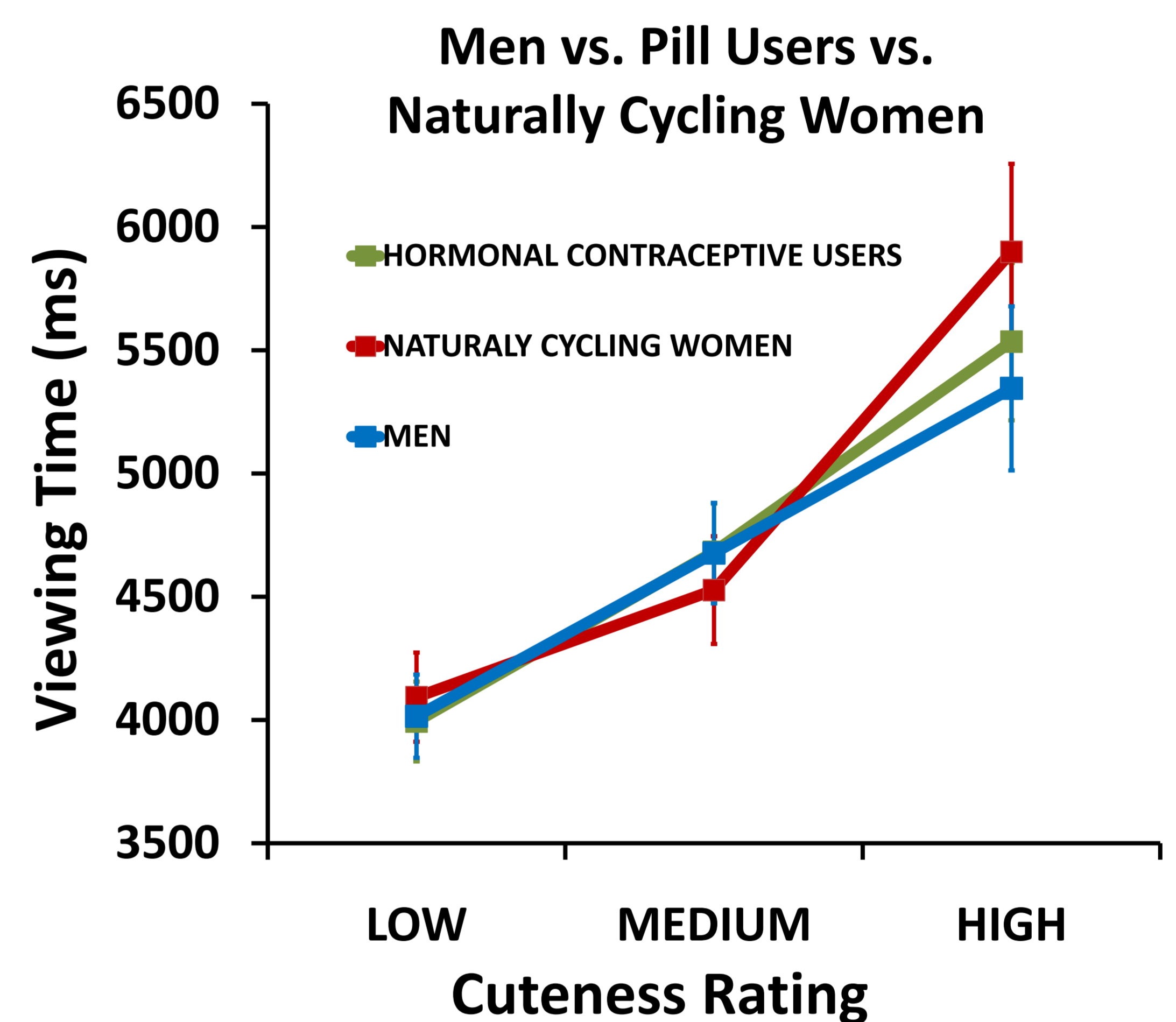
Gender and Hormonal Contraceptive Use Analysis

•There was an effect of cuteness rating on viewing time across all participants ($F=50.429$, $df=2,130$, $p<0.0005$). Higher rated infants received longer viewing times (see top graph)

• There was no effect of gender or hormonal contraceptive use on viewing times ($F=0.168$, $df=2,65$, $p=0.846$) and no interaction between gender/hormonal contraceptive use and cuteness rating ($F=0.448$, $df=2,65$, $p=0.641$)

Cycle Phase Analysis

• For the 9 naturally cycling women who completed the task in all cycle phases, a within subjects analysis revealed an effect of cuteness level on viewing times (see bottom graph) ($F=16.446$, $df=2,16$, $p<0.0005$) but no effect of cycle phase ($F=1.510$, $df=2, 32$, $p=0.251$) and no interaction between cycle phase and cuteness rating ($F=1.249$, $df=4,32$, $p=0.310$).



Stimuli

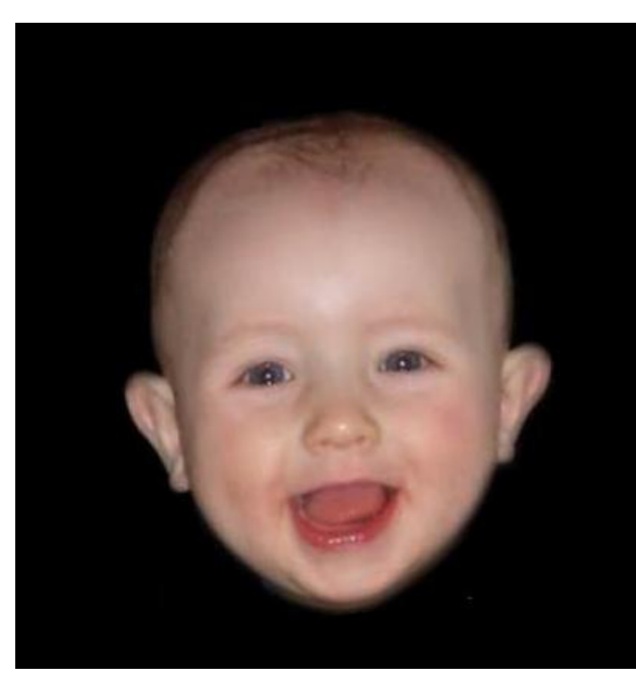
A representative sample of (56) infants ranging between the ages of 6 and 12 months; half male half female, half neutral half smiling.



Neutral Male



Neutral Female



Smiling Male



Smiling Female

Participants

23 men, 25 hormonal contraceptive pill users and 20 naturally cycling women have taken part so far. Naturally cycling women will complete the tasks three times; during the menstrual phase (low estrogen and progesterone, E & P), the late follicular phase (high E, low P) and the luteal phase (mid E, high P).

(E= Estrogens, P= Progesterone)

Conclusions

- There is a positive correlation between Cuteness Rating and Viewing Time
- There is no effect of gender or hormonal contraceptive use on viewing times
- There is no effect of cycle phase on viewing time in a small sample of women

Sprengelmeyer et al (2009) found hormonal modulation to sensitivity to *fine* gradations of cuteness. The gradations between the levels of cuteness in the present study were at a larger level which the results suggest that all participants could differentiate between. The present study will therefore be repeated using the finer gradations of cuteness to determine if motivation to view infant faces is hormonally modulated.

•Aharon, I., Etcoff, N., Ariely, D., Chabris, C.F., O'Connor, E., Breiter, H.C. (2001) Neuron, Vol. 32, pp. 537–551.

•Bartels A, Zeki S. (2004) NeuroImage, Vol. 21, pp.1155– 1166

•Sprengelmeyer R, Perrett DI, Fagan EC, Cornwell RE, Lobmaier JS, Sprengelmeyer A. (2009) Psychological Science, Vol 20, pp.149–154