

# Do women's preferences shift with their fertility cycle?

June 23 2014, by Rob Brooks

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Does the attractiveness of musicians depend on the fertility of the beholder?  
Credit: True British Metal/Flickr

About a month ago, I stumbled across a [paper](#) that left me with the warm

reinforcing glow that comes with being right. The rather artificial experiment played female subjects two pieces of music varying in complexity, and then asked each subject which of the male composers they preferred sexually.

All the subjects had to go on was the piece of music. Women at the fertile peak of their menstrual cycles preferred the composer of the more complex tune for a short-term thing. At other times, or if asked to rate the composers for suitability as a long-term mate, subjects showed no preference.

My vindication was the paper's support for the idea that music-making ability is preferred by those seeking mates. Such a preference is one possible way in which our ability to make and to appreciate music might have evolved, a position I happen to think is right. The paper's test is pretty simplistic, but the addition of a new line of evidence gives the idea of sexually selected musicality another strand of support.

As a scientist I should be wary of my own reaction to the evidence. It is all too easy to count the "hits" that confirm one's world view and ignore the "misses" that contradict it. Such [confirmation biases](#) build distorted and, left uncorrected, incorrect beliefs. They constitute the prime ingredient in religious faith and ideological zeal of all stripes. And science, done properly, is the only known antidote.

But what happens when science probes the most ideologically polarising questions themselves? Well, a very interesting case is unfolding right now concerning the science of how [women's](#) fertility cycles shape their mating preferences.

## Shifting cycles

The musical complexity paper builds on an idea in [evolutionary](#)

[psychology](#) that women's sexual [preferences](#) and desire "[shift](#)" at the time they are most likely to conceive, favouring men of superior genetic quality over the kinds of men likely to make good long-term partners and co-parents.

This "ovulatory shift" idea contains many moving parts, each of which has at least some support.

The best man to raise a child with is not necessarily the best available gene-donor. So women might profit, in evolutionary terms, from pairing up with a nice guy – hard-working and safe to be around – while discreetly also mating with a different, highly masculine, ridiculously good-looking paragon of genetic endowment.

Such liaisons come with risks, however, including being abandoned – or worse – by the cuckolded long-term partner. So it's only worth "gene shopping" when you stand a good chance of conceiving.

The very idea makes many people squirm. But not everybody is squirming for the same reasons.

Social conservatives and religious traditionalists are often confronted by the sexual freedom and agency implicit to ideas like ovulatory shifts. It's just too much to accept that some "good" women – wives even! – might play the odd away game for biologically rational reasons. Much easier to wash all that complicated evolutionary nuance away with a cleansing deluge of scriptural literalism.

Interestingly, evolutionary accounts of human behaviour come under equally heavy fire from the opposite end of the political spectrum, where biology can play no role in understanding society.

[Cultural creationists](#), most of whom show no evidence of ever having

attempted to understand evolution, prefer to flail at "[biological determinism](#)". In their cartoon world, those wearing the white hats shoot from the hip at oppressive biological stereotypes, secure in the conviction that everything interesting about human behaviour arises as the results of learning, culture and social construction.

But here in the 21st century, serious academic research should be above the ancient laziness of pitting nature and nurture as competing alternative explanations. Unfortunately that habit remains too hard for some authors to break.

I'm certainly not claiming we shouldn't be very careful about biological explanations. When it comes to women's hormonal cycles, history shows the merit of treating biological claims sceptically. One can draw a straight line from Classical Greek ideas that the uterus wandered about the body causing all sorts of ailments to the popular diagnosis of "hysteria" for almost any psychological and many somatic complaints in 19th century Europe and America. The very word "hysteria" derives, after all, from the Ancient Greek for uterus.

Biological ideas are still widely used to confine and oppress women. Consider the recent controversial review of studies concerning [mood and the menstrual cycle](#). Here at The Conversation, Jane Usher took that paper as reason to dismiss premenstrual moodiness as a myth. Jayashri Kulkarni responded that PMS is real and denying its existence harms women.

## **What about the evidence?**

Whatever our political predispositions, surely we should be led by the evidence in deciding whether ovulatory shifts are real?

An impressive number of studies show that women in the "fertile phase"

of their cycle express different preferences from those in less fertile phases and women on hormonal contraception. In particular, preferences for typically masculine male faces, behaviour, personality traits and health all peak in the fertile phase. And at peak fertility, women in long-term relationships more often report attraction to men other than their partners, and weaker attraction to their partners. Especially when those partners aren't paragons of masculine attractiveness.

Many other studies, however, have found no evidence of ovulatory shifts. And who knows how many unpublished studies languish in researchers' file drawers? This is just the job for a meta-analysis, the suite of statistical techniques for sifting a body of published results to extract the overall level of support for a hypothesis.

Recent months have seen not one, but two meta-analyses of the subject. [One](#), led by Wendy Wood at the University of Southern California, concentrated only on preferences for high testosterone, masculine, dominant or highly symmetric men. Their meta-analysis of 45 published and 13 unpublished studies found no overall support for shifting preferences across the menstrual sample.

Across town at UCLA, [Kelly Gildersleeve, Martie Haselton and Melissa Fales](#) meta-analysed 134 effects from 38 published and 12 unpublished studies. In contrast with the USC paper, the UCLA team found robust cycle shifts when women were asked to assess men as short-term mates, but not when assessing long-term partners.

Two meta-analyses, published within months of each other, asking more-or-less the same questions, but getting different answers. That's not how science – and meta-analysis in particular – is meant to work!

But, strangely, it's not an unusual turn, particularly when the research concerns polarising issues. My good friend [Michael Kasumovic](#) pointed

me to the following meta-analytic back-and-forth on the links between videogames and violence. His precis:

[2001](#): Video games cause aggression.

[2007](#): No, no, it's a publication bias.

[2007](#): See, it really is a publication bias.

[2010](#): No! They really cause aggression!

[2014](#): Actually, violent games increase aggression, and pro-social games increase prosocial behaviour ...

... and so on it rolls. Meta-analyses of existing data do not provide the hoped-for panacea, much less change minds, particularly when the issues at stake are ideologically infused. At least not instantaneously.

This ovulatory shift story is far from done. The differences in sampling and analytic approaches between the two teams are still shaking out. I've been in touch with both groups and will shortly write another column trying to get to the bottom of how they reached such different conclusions. Before I do so, I'm waiting for one more paper to hit the presses, in order to be sure both teams have similar opportunities to present their cases.

## **Look who's celebrating**

For now, it remains worth asking what's at stake. This rather intriguing business represents just the latest squall in the tempestuous relationship between the biological and social sciences. And it's in danger of descending into rude tribalism.

Claims about ovulatory shifts are seen in some quarters as just another example of women's cyclical biology being used to deny their agency and independence. Wood's meta-analysis invigorated anti-biology defenders of the faith. Consider [Amanda Hess](#), whose Slate column often oozes thoughtful analysis. Whenever Hess strays near evolution, however, she becomes unwilling to [weigh complex ideas on their merits](#). Her [column on the Wood et al paper](#) ran with a weak "patriarchal scientists don't understand female bodies or the ineffability of culture" trope.

Her own biases confirmed, and making no mention of the earlier-published Gildersleeve meta-analysis, Hess rejoices that "a woman's cultural conditioning is even more powerful than progesterone". To pilfer an expression as hackneyed as Hess' argument, 1975 called, and they want their false nature-nurture dichotomy back.

This kind of buy-in to outmoded all-biology-equals-determinism thinking seems so at odds with the way evolutionary psychologists and biologists really view behaviour. But look at what the journalists were working with. The [press release](#) USC put out quotes Wood:

*A complete model of human reproduction needs to acknowledge women's impressive capacity to regulate their own behavior and not fall into the trap of biological determinism [...] Regardless of what might have been normative in ancestral history, with the advent of cultural roles and complex group living, women showed the capacity to tailor their reproductive activities to a variety of social roles.*

Resistance to the notion of ovulatory shifts, then, springs from the fear that if hormones influence behaviour, then that robs women of their capacity to act independently and in their own interests. Claire Lehmann provides a [scathing rebuttal](#) of this argument, skewering wilful cultural creationist ignorance of how biology really shapes behaviour.



What fascinates me about this issue is how the anti-biology crowd are jumping at shadows. If evolutionary psychology conferences are secret gatherings of patriarchy out to perpetuate the status quo, then their cover is outstanding. What I see is a vibrant field concerned with the subtle ways in which women and men act in their own evolved interests.

Ovulatory shift research in particular, conducted by far more women than men, uncovers ever more intriguing nuances to women's motives, actions and how they interact with deliberate and equally strategic behavioural self-regulation. Those most interested in gender equity and the liberation of female sexuality from that other - original - kind of creationism might well benefit by paying close attention to the field of evolutionary psychology.

Science is always done by people, and we all bring our own personal and scientific preferences and biases to the enterprise. What we do with those influences in the face of the evidence is what really matters.

**More information:** "Menstrual cycle phase alters women's sexual preferences for composers of more complex music." *Proc. R. Soc. B* June 7, 2014 281 1784 20140403; [DOI: 10.1098/rspb.2014.0403](https://doi.org/10.1098/rspb.2014.0403) 1471-2954

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