

**A. Seminar papers** *Answer any 6 of the following 7 questions*

1. Both Silverman et al 2007 and New et al 2007 tested a hypothesis about sex differences in spatial abilities. In what way was Silverman et al a better test of the hypothesis than New et al, and in what way was New et al a better test than Silverman et al?

*Silverman is better in that the test is cross-cultural, and so the result has considerable generality. New et al is better in that their test is not paper and pencil but involves actual behavior that clearly relates to the kind of spatial abilities they have hypothesized. (They both come to essentially the same conclusion, so together they make a stronger case, as each compensates for a weakness of the other. Neither is perfectly convincing of course!)*

2. Holden & Mace 2003 examined the occurrence of matriliney and patriliney in Bantu-speaking societies. Their evolutionary explanation (which they give afterwards rather than up front as hypotheses) is in terms of two factors describing a particular society: potential for polygyny and uncertainty of paternity. For which of these two do they provide stronger evidence, and what is that evidence?

*They have a good measure of PFP, which is presence of cattle, which are used to barter for brides, and which can provide a male with an opportunity for polygyny. And thus they can show that the presence of cattle in the society is indeed the 'enemy of matriliney'. In contrast, they have no measure of differences in uncertainty of paternity across the different societies, and so though they talk about this factor, they provide no evidence at all on its effects.*

*(Note that the question asks for evidence. Some folks were fooled by Holden & Mace's comparison of the matrilineal Chewa and the patrilineal Gabbara, but all that shows is that paternity is associated with camel-herding and matriliney with a purely horticultural society. They provide no information at all on uncertainty of paternity in either society, so that remains a plausible but completely untested hypothesis.)*

3. Roney et al 2006 asked women to rate men's faces for attractiveness as a short-term romantic partner and as a long-term romantic partner. The two independent variables were the men's masculinity (testosterone level) and affinity for children (a paper and pencil test).

(a) What was the **best** predictor of long-term mate attractiveness? *Physical attractiveness (see Table 1).*

(b) What was the **best** predictor of short-term mate attractiveness? *Physical attractiveness (see Table 1).*

(c) Suppose you were to read only the abstract (summary) of the paper where the authors say: "men's ... affinity for children predicted women's long-term mate attractiveness judgments, while men's testosterone and perceived masculinity predicted women's short-term attractiveness judgments". Are the results completely consistent with the authors' conclusion in the abstract? Explain.

*They are correct in saying that 'likes children' predicts long-term mate attractiveness, and that 'masculine' predicts short-term-mate attractiveness, but they gloss over the fact that the **best** predictor of both is 'physically attractive'! Thus their summary ignores the major finding about the #1 predictor while emphasizing the lesser finding of the #2 predictor swinging from 'masculine' for short-term to 'likes children and 'kind' for long-term! This is pretty misleading.*

4. Zietsch et al 2008 compare the (heterosexual) mating success of the non-homosexual member of identical twin pairs that are discordant for homosexuality (i.e., one is homosexual, one is non-homosexual). The authors presume that the (heterosexual) mating success of the homosexual twin members is less than average, and they find that the number of opposite-sex sexual partners of the heterosexual twin members is greater than average (although this result is only a trend). The authors use number of opposite-sex partners as a proxy for reproductive success (RS), but in class we wondered whether this proxy was a valid one.

Here give an argument for why number of sexual partners (a) might predict above-average RS, which is their assumption, or (b) might instead predict **below**-average RS.

*The authors assume (a), that more sexual partners would be correlated with more babies (perhaps just in the EEA though they don't really say). But humans are monogamous on the whole, and fewer sexual partners could well be correlated with more commitment to the partner and perhaps more parental investment, in which case you would predict (b), that more sexual partners would be correlated with lower RS.*

*Also, keep in mind that their data include **females** as well as males, so a simple 'spread-you-seed' argument is not going to work here.*

*(Many folks forgot about the females, where you might expect their proxy to be even poorer than it is for males.)*

*(A few people thought this was an either/or question, and answered just a or b. That was ok, but you still did need to address the pros and cons of your prediction.)*

5. Pretend you are David Buss and counter the arguments of DeSteno et al 2000 (sex differences in jealousy).

*(See Buss, pp 336-342, especially pp 340-342 which explicitly takes on DeSteno et al 2000. The main error people made here was to just attack DeSteno by re-stating the Buss theoretical argument. But DeSteno et al are well aware of the argument, and in fact give a nice summary of it in their introduction. They just don't buy it, and think that the results of Buss and others are essentially an artifact of the forced-choice measurement. Thus you could argue with that premise – for example by saying that the forced choice procedure might actually be a better test or by arguing with their 'memory load' procedure (Buss gives a strong counterargument against) – or by talking about the weight of different kinds of evidence, including physiological (as Buss does in the section noted above).*

6. (a) Explain how the results on father absence and differential investment in the Arsi Oromo (Gibson 2008) are supposed to follow from the Trivers-Willard hypothesis. (b) What is the evidence for this in the study, and what is the evidence against it?

*Investment in sons should be greater when males have an opportunity for greater RS than females, e.g., a potential for polygyny, or an opportunity for greater parental investment. Investment in daughters should be greater when that is not the case (and of course should also be favored if there is considerable uncertainty of paternity).*

*Evidence for the hypothesis is the greater mortality in sons than daughters in the first year for father-absent households. Evidence against is the failure to find any differences in size (proxy for health) after the first year.*

7. One of the seminar papers commits the 'naturalistic fallacy' (or comes very close to it). Identify which one that is, and explain your reasoning.

*Other possible answers here, but far and away the best candidate is actually Kurzban et al on race. The implicit argument of the paper is that because we are capable of ignoring race, that racism is not natural (inevitable). Does that mean that if they had found that race was **not** ignored in their situation, we should conclude that racism is natural (inevitable)?*

*This is an interesting case precisely because it is the reverse of the typical situation involving the naturalistic fallacy. Usually we are warned not to commit the naturalistic fallacy because it leads to a morally-repugnant (and politically incorrect) conclusion; here if we commit it, it leads to a morally-pleasing (and politically correct) conclusion!*

*There was some confusion about what exactly is the **naturalistic fallacy**. It does not consist, as some folks seemed to think, simply of saying that a trait or a trait difference is natural (has a biological basis). The fallacy consists of **then** concluding that it is therefore ok or good (or at least not as bad as we thought) or inevitable or justified.*

**B. General Questions** Answer any 3 of the following 4 questions

**8.** For both of these studies (discussed in lecture), indicate the key **control condition**:

(a) Baker & Bellis on human sperm competition (a male up his sperm count when having sex with his partner after she has been away for a while).

*Masturbation – they get effect only with actual copulation (see Fig. 1).*

(b) Daly & Wilson on child abuse (child abuse is higher in step-parent households).

*The combo of mother-only vs. mother + stepdad households (independent variable) AND abuse vs. runaways and criminal offenses (dependent variable). Runaways and criminal offenses were higher in mother-only household, whereas abuse higher in mother + stepdad households (compare Figs. 1 and 2), thus they could eliminate the argument that abuse is simply one of the numerous bad things that can happen in 'broken' homes.*

**9.** In what **major** ways are the evolutionary psychology and human behavioral ecology approaches different?

*Primary difference is that EP assumes trait was adaptive in the EEA and probably not in present environment, whereas HBE assumes more plasticity in traits, and so they assume these traits are probably generally adaptive in the new environments. It follows from this that HBE considers measuring RS (if its possible to do so) a good way to evaluate whether a trait has been shaped by selection, whereas EP assumes RS is generally irrelevant in present-day environments.*

*A second difference is that EP focuses on psychological mechanisms (e.g., jealousy) whereas HBE focuses on behaviors (e.g., infidelity).*

*EP also assumes that the psyche (or brain) consists of modules designed to serve specific purposes (language, jealousy, spatial stuff, cheater-detection, etc) whereas HBE is pretty much agnostic on issues of psychological mechanisms.*

*Also, EP tends to focus on universals (true of all humans in all societies, e.g., spatial abilities, sex differences in mate choice, jealousy, etc), whereas HBE tends to focus on diversity, things that are different across societies (e.g., matriliney vs. patriliney).*

**10.** Commenting on cases where mothers abuse or kill their children, evolutionary psychologist Steven Pinker suggested that perhaps when a mother hasn't sufficient resources to nurture a child, maternal love could switch off, replaced by murderous intentions. Hilary Rose, a critic of evolutionary psychology, seized on Pinker's hypothesis and said: "Both killing and protecting are explained by evolutionary selection...selection explains everything and therefore nothing"! Suggest why this criticism is unfair, and indicate how an evolutionary psychologist could test Pinker's hypothesis.

*Her suggestion is that an evolutionary explanation is useless if it predicts that an organism will do one thing under certain conditions (i.e., normal ones), and the opposite under different conditions (i.e., extreme scarcity). This is because she believes that evolution must lead to a prediction of only one sort of behavior across all contexts, and therefore that it cannot yield a prediction that the organism will behave contingently on contextual factors. But the contingent (or facultative) response is a perfectly good evolutionary hypothesis, and can be tested by seeing if behavior changes in the predicted way under different environmental conditions. For example, we could measure rates of child abuse under different SES conditions, or under any condition relating to environmental stress and threats to survival.*

**11.** Another critic of evolutionary psychology, Stephen Jay Gould asks: "...how can we possibly obtain the key information that would be required to show the validity of adaptive tales about the EEA when we do not even know the original environment of our ancestors"? How would an evolutionary psychologist answer this criticism?

*We derive predictions about the psychological mechanisms that would have been adaptive in the EEA, for example, that males will be more concerned with sexual infidelity, females with emotional infidelity, or that males will be better at spatial orientation, females at object location recall). We then test for the predicted differences. The validity of the 'adaptive tale' is then confirmed or refuted by the test of these prediction.*

*(Many people took Gould's bait! But we don't have to show that the EEA is a reasonable or plausible hypothesis. All we have to do is to test predictions that follow from that hypothesis. To the extent that these predictions are borne out, to that extent is a good hypothesis!)*