Psychology 302 Spring 2010 Midterm Key

1. Heterozygous condition (heterozygous matings will keep producing homozygous recessives); inclusive fitness via homosexual helping to support children of other family members; selective advantage (e.g., disease resistance, etc.) of heterozygous condition, maintaining higher frequencies of recessive allele; mutation (although this isn't a great answer, I accepted it).

2. Four theories: 1. increases paternal uncertainty such that in promiscuous or dominant male context, may reduce infanticide; 2. decreases paternal uncertainty as female guarding and frequent mating with female by male would be necessary, also perhaps increasing emotional pairbond; 3. allows females to secure more resources from multiple males (i.e., courtship gifts); 4. prevents females from knowing when they could get pregnant to ensure that they do not avoid pregnancy. Then need to evaluate relative strengths of whichever two you selected.

3. Better male systemizing may have been due to ancestral division of labour. If males were out hunting they would have been more solitary, having less need to utilize language, theory of mind, etc. Being more task focused may have also been beneficial, as could, for example, focused attention and care of tools, resources, noticing tracks, signs, etc. of prey/predators, and the like. Being the gatherers and primary caregivers of the children, this would favour women to develop greater theory of mind, language, and empathy skills. (6 pt). Suggests that altruism itself (the full psychological condition) is not an adaptation. (2pt) Autistics don't really fit well at all with a group; they show low interest and concern for others and, correspondingly, non-autistics find autistics difficult to be around. Autism is much more likely a byproduct of selection for systemizing traits which were adaptive in ancestral males; too many, though, and a threshold is crossed into autism.

4. Because seemingly different interpretations may really be dealing with the same problem/question/issue, just at a different level of interpretation. Also, some questions just really can't be effectively analyzed at certain levels, or at the least, the level of analysis will constrain what can be answered. (2 pt). Example needed. (8 pt.)

5. As a case of sex role reversal and the females being bigger and more aggressive, we'd expect that the females would compete physically with one another for access to males. Females would likely maintain territory. A female would be polyandrous, mating with multiple males within her territory, laying her eggs, but not caring for them. We would see "male choice"; possibly females would have exaggerated features or behaviours. Males would likely be the primary caregivers to the young. Males may practice competitive exclusion of other males from a female's territory.

6. No, it is highly unlikely that pigeons have a domain specific human face recognition module. It is possible that they have a pigeon face domain specific recognition module, however. And it may be that human faces can be recognized by generalizing from this system. Alternatively, human face recognition may utilize a general processing system

for learning a variety of environmental features. It really wouldn't make sense for ancestral pigeons to have developed the expensive cognitive architecture dedicated to human faces. Even if humans were predators of ancestral pigeons, recognizing individuals by face probably wasn't a huge advantage. Looking at it another way, humans don't have domain specific pigeon face recognition modules….

7. Consider the if p then q rule; this is an abstract logic formulation of a rule. The find the underage drinker is exactly the same if p then q rule, but not structured as an abstract logic problem. Humans don't seem to be all that good at calculating single-case and Bayes theorem probabilities. Rather, we are good at utilizing heuristics based on frequencies of repeatedly encountered systems. This makes sense, given that the sorts of things our ancestors kept re-encountering (food sources, weather systems, seasonal changes, predators, other tribes of people, etc.) would be the sorts of things that were of great survival benefit. Overall, our conditional reasoning abilities are stronger.