

1.) Bigger is better
 - ◆ E.g. - Natural Selection will always lead to bigger structures like larger brains
 - ◆ Natural selection is a balance between adaptive and maladaptive traits, costs
2.) Newer is better
 - ◆ E.g. - Bipedalism is better than arboreality
 - ◆ The length of time an adaptation has been around says nothing about its usefulness
3.) Natural Selection always works, or species will always adapt
 - ◆ E.g. - Humans will adapt to air pollution or global warming
 - ◆ 99% of all species that ever lived are now extinct
- 4.) Evolution means progress
 - ◆ E.g. evolution will lead either to perfection or extinction
 - ◆ In fact there are trade offs and costs associated with each adaptation, sometimes a trait is just “good enough” to pass more genes to the next generation
 - ◆ There are many examples of non-linear change and increasing complexity can look like progress but it is just more complex
- 5.) Adaptationist Paradigm
 - ◆ E.g. all characteristics and behaviors are adaptive or optimal
 - ◆ There can be structures that are a by-product of other traits (exaptation) or remnants that were previously adaptive but are no longer (appendix) or compromises (birth)
- 6.) The Naturalistic Fallacy
 - ◆ Seeing the current condition as “natural” and therefore adaptive, or best
 - ◆ E.g. humans as naturally monogamous, males promiscuous, females passive
- 7.) Lamarckian Evolution
 - ◆ E.g. characteristics acquired during lifetime will be passed on to offspring
 - ◆ Individual fitness (or RS) determines characteristics passed to next generation
- 8.) Conflating Evolution and Culture/Technology
 - ◆ E.g. humans in all societies are “progressing” in a predictable sequence from Stone Age to Agriculture to Iron Age to Urbanization to Western Modernity
 - ◆ Human cultures are adapted for their specific ecological, historical, often colonial contexts and all humans are not working towards capitalism, democracy, etc.
 - ◆ There are many examples of cultures that have “gone backwards” and were better adapted, healthier, etc. Technological “advancement” does not necessarily = better health, nicer lifestyle, less work, etc. In fact the opposite can be true.
- 9.) “Survival of the fittest”
 - ◆ BTW: This is Herbert Spencer’s description of Natural Selection (not Darwin’s)
 - ◆ E.g. The fastest, smartest, best hunter will have the highest RS (have more kids)
 - ◆ It is not survival of the fittest but survival of the fit
 - ◆ Not all fit individuals reproduce and potentially adaptive traits do not always make it to the next generation- sometimes there are random processes preventing it