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1. Descriptive/predictive. This dichotomy is one that is characterized by the movement from an observable occurrence and the general explanation of it to a description thorough enough to extrapolate the outcome of further occurrences. I might approach one of my research interests through the lens of this dichotomy in the way of species abundance in a particular association with other species. The descriptive approach might involve the simple observation of higher species densities in the presence of others, while the predictive approach might allow for anticipation of densities other than those sampled.

2. In the first quote that references the requirements of “western science and our society”, there seems to be an implicit cultural/societal bias. The assumption is that not only are there enough fundamental differences between “western science” and *other* sciences to distinguish between them, but the difference is in the adherence to rigorous scientific scrutiny of challenges to the status quo. This could imply that the “*Other* sciences” and the scientists associated with them do not properly distinguish between good or poor-quality challenges to established theory.

3. The two primary components of a model within the dual-model paradigm are the deterministic aspect and the stochastic aspect. The deterministic aspect is the anticipated pattern of the model (minus noise or randomness). The stochastic aspect is the anticipated variation within the deterministic model.   
A system that I am interested in studying is the distribution and density of symbiotic fungi within a forest system. An example of the deterministic component within that system is that of a linear model that suggests an increase in vegetation density corresponds with an increase in density of fungi. The stochastic component is the probability distribution of measured fungal density vs measured vegetation density. (?)

4. The difference between a statistical and ecological population is primarily a difference in scope or scale of the population in question. The ecological population is all the potential subjects within the selected range of interest, whereas the statistical population is a subset of the ecological population utilized for sampling. The statistical population is the group that will vary depending on the scale of the research question being tested.

5. Cattails  
 a. Discrete variable. The number of wetlands that are impacted by the invasive species.

b. Continuous variable on a ratio scale. Density of invasive vegetation in each wetland delineated into DAFOR relative abundance categories.