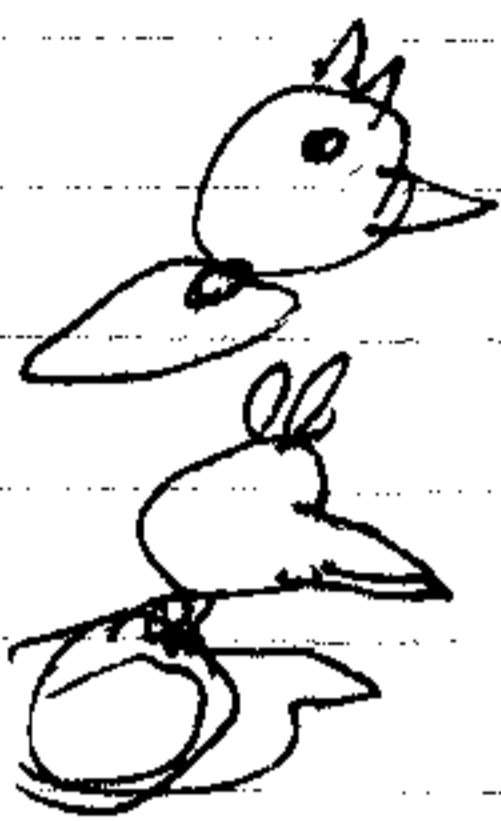


Phil  
MF  
GS  
ET

4/21

## David Wake: Making Evolutionary Predictions from Dulp Biology



Argues that evolution is predictable in some aspects

### Limb bud development

Salamanders - loss of 5th toe has happened many times in salamander history



- order of digit dulp is diff from frogs & amniotes

$$\frac{20 \text{ lots}}{x} = \frac{xy}{60}$$

452 skeletons from frozen pond of salamanders

$$xy = 600$$

$$y = \frac{600}{x}$$

$$n = 60$$

Homoplasy - derived similarity

- parallelism - same dulp. basis

- convergence - diff dulp. basis

- reversal to ancestral state (ataxism)

Need phylogenetic hypothesis in order to interpret phenotypic change.

Large genome size impact

- bigger cells

- slower metabolism