

## Darwin's *The Origin of Species* & Argumentation

### Basic Outline

1. [An Historical Sketch (3<sup>rd</sup> edition)]
2. Chapters 1-4—The Chief Argument: an analogy from artificial selection to natural selection.
3. Chapter 5—Variables in natural selection—can be grouped with 1-4 or 10-13 (11-14)
4. Chapters 6-9 (10)—Answers various objections to the basic model—diversified habits; organs of extreme perfection; [chap 7—“Miscellaneous Objections” (6<sup>th</sup> edition)]; instinct; hybridism; gaps in fossil record
5. Chapters 10-13 (11-14)—Explanatory power of the basic model—geological succession; geological distribution; affinities in morphology and embryology
6. Chapter 14 (15)—Summary and conclusion

### *Discussion Questions*

- What does Darwin's basic outline indicate about the form and shape of his argument?
- Was the sixth edition chapter 7 a necessary edition?

### Epigrams

"But with regard to the material world, we can at least go so far as this—we can perceive that events are brought about not by insulated interpositions of Divine power, exerted in each particular case, but by the establishment of general laws." W. WHEWELL: *Bridgewater Treatise*.

"The only distinct meaning of the word 'natural' is *stated, fixed, or settled*; since what is natural as much requires and presupposes an intelligent agent to render it so, *i.e.* to effect it continually or at stated times, as what is supernatural or miraculous does to effect it for once." BUTLER: *Analogy of Revealed Religion*. [2<sup>nd</sup> edition]

"To conclude, therefore, let no man out of a weak conceit of sobriety, or an ill-applied moderation, think or maintain, that a man can search too far or be too well studied in the book of God's word, or in the book of God's works; divinity or philosophy; but rather let men endeavour an endless progress or proficience in both." BACON: *Advancement of Learning*.

### *Discussion Questions*

- What does each epigram indicate about Darwin's conception of his argument and its use of evidence?
- Why do you think he added the epigram by Butler? What was he implying?

### Victorian Philosophy of Science

John Herschel, *Preliminary Discourse on the Study of Natural Philosophy* (1830)—Herschel held that both Baconian induction and deduction were necessary for scientific exploration and experimentation.

Herschel held that *verea causae* produce a number of other effects. Yet one can infer additional effects from what one can observe directly.

William Whewell, *Philosophy of the Inductive Sciences* (1840)—Whewell followed Herschel’s emphasis on induction and deduction, but Whewell stressed that induction is not simply a building up of particulars, but the overlaying of a general theory onto the particulars. Whewell was suspicious of arguing that one could approach facts without a set of Kantian filters, and he likewise, held that nothing forced one to believe in a uniform past—we cannot know whether things acted in the past as they do now.

John Stuart Mill, *System of Logic* (1843)—Mill, on the other hand, stressed the amassing of large numbers of particulars with deductive elimination playing a secondary role. One should set forth a hypothesis only once it has been shown to match the facts at hand. Mill was especially suspicious of any hypothesis advanced without sufficient proof already at hand.

#### *Discussion Questions*

- How much is Darwin’s argument in *Origin of Species* hypothetical and/or inductive?
- How much of his argument is dependent upon “real causes”?

#### Rhetoric and Style

1. Quasi-Design Rhetoric—Darwin has many passages that attribute to natural selection a positive, creative force likened unto a Creator.
2. Aesthetic Descriptions—Darwin often employs descriptive, even beautiful language and qualifiers to set forth his natural observations.
3. Reduction to Absurdity—At times, Darwin seeks to reduce the claims of his opponents to extreme and therefore absurd conclusions. He often calls natural theology into question in this manner.
4. Thought Experiments and Readerly Good Will—Darwin often asks the reader to concede the possibility of a claim to show the conceivability of his position.
5. Important Metaphors—Darwin uses key metaphors such as the famous “tree of life” to advance his claims and act on his reader’s imagination.
6. Even Tone—Even though Darwin is willing to attack natural theology, in general he is careful not to too directly attack his reader’s theological and humanistic sympathies.