

Tutorial 6 Watson

What is the code of life?

GFN1000 In Dialogue with Nature

Content

1. Experimentation
2. Reductionism and Interdisciplinarity
3. Nature vs. Nurture
4. Eugenics
5. Debate



Experimentation

- Scientific discovery begins with 1) a **hypothesis**, followed by 2) experiment **design**, and 3) the interpretation of experiment results that either **confirm or disprove** the hypothesis. Describe each component of the following experiments.
 - Mendel's pea experiment (pp.102-105) ①
 - Morgan's fruit fly experiment (pp.106-108) ②
 - Griffith's mice experiment (pp.117-118) ③
 - The Meselson–Stahl experiment (pp.138-139) ④
- What do you think makes a successful experiment? ⑤

Reductionism and Interdisciplinarity

- How do you understand Watson's argument that "life was just a matter of physics and chemistry, albeit exquisitely organized physics and chemistry" (Para. 64)? Do you agree with him? ⑤
- How have scientists combined approaches from various disciplines and discovered the structure of DNA? ①②
- How has the methodology in life science evolved since Darwin's time? ③
- Considering that scientific discovery typically results from collaborative efforts involving multiple scientists from diverse disciplines and institutions, is it appropriate to grant scientific awards to individuals? ④

Nature vs. Nurture

- What are the technical (non-ethical) problems with Galton's research on the heredity of abilities? ①
- Do you agree with Watson that intelligence differences among races are due to genes? ②③
- Give examples demonstrating gender differences stemming from nature ④ (i.e., biological factors) and nurture ⑤ (i.e., upbringing and societal influences).

Eugenics

- Give examples showing that the definition of good/bad genes has varied across time and space. ②
- Did the one-child policy result in any eugenic consequences? ③
- If you were a proponent of Eugenics, how would you propose eugenics policies in contemporary China? ④⑤
- What do you think are the pros and cons of premarital genetic screening? ①

Debate

- Topic: Parents have the right to determine what kind of children they want.
- Make arguments to defend your position and counter the opposing viewpoint.
 - Affirmative ①②
 - Negative ③④

