A COMPARISON OF *YOUR INNER FISH & THE HUMAN ADVANTAGE*

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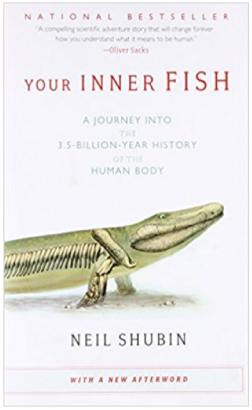
INTRODUCTION

- We read *The Human Advantage* to identify if it is an appropriate companion text to BIOL 399 Evolution
- We created appropriate exam questions in the form of a study guide for students
- We discussed what we learned in the book in context of existing BIOL 399 course outcomes
- We recommended to adopt or not adopt *The Human Advantage* as a companion text in BIOL 399 Evolution

YOUR INNER FISH

Neil Shubin

- Discovered a fossil fish named *Tiktaalik* from 375 mya, which shows transition between fish and land animals
- From teeth, researchers can tell what type of food the organisms ate, which tells us what type of environment they lived in
- The "sonic hedgehog" gene produces the same arm-wing pattern in many organisms
- Scientists can trace the development of anatomical structures from common ancestors

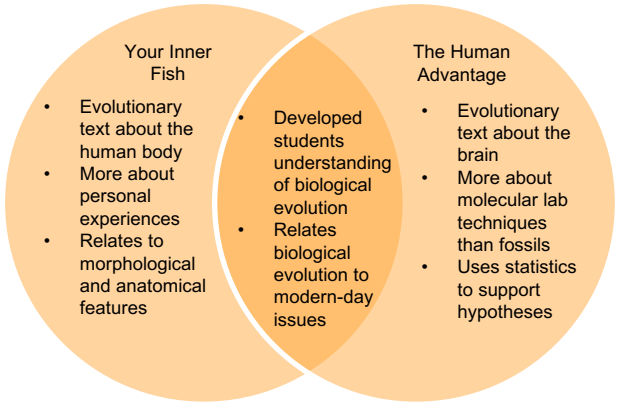


ADVANTAGES	DISADVANTAGES
• Set up like a story so it keeps the reader interested • Figures are eye-catching and easy to read • More correlated with what we've talked about in evolution this semester	• More about organisms that aren't directly related to humans • Personal experiences are sometimes too detailed • Written for a general audience

COURSE OBJECTIVES

1. Summarize the historical development of modern evolutionary theory
2. Describe the processes of biological evolution
3. Synthesize information in current media – including both peer- reviewed journal and popular press articles with "textbook" knowledge
4. Generate testable evolutionary-relevant hypotheses based on given information (morphological, molecular, geographic, etc.)
5. Write a scientific lab report including relevant figures
6. Explain how an strong understanding of biological evolution can be applied to modern-day issues such as global warming, mass extinction, or bacterial resistance

TEXT APPLICABILITY

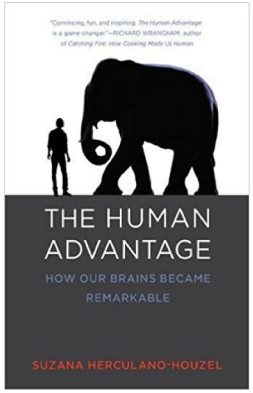


VALUE ADDED

- A companion text allows students to see evolution from a real world perspective rather than just textbook facts
- *Your Inner Fish* allows students the ability to describe the processes of biological evolution with a more advanced understanding
- *The Human Advantage* allows students to delve into neuroscience and make connections to evolution

THE HUMAN ADVANTAGE

Suzana Herculano-Houzel



- The human brain is made of 86 billion neurons
- It is not the size of our brain that makes our brain special, it is the fact that we have more neurons in the cerebral cortex than any other animal
- "Brain soup" allows researchers to determine the number of neurons in the brain
- Humans have their high & fast caloric intake to thank for their large number of neurons in the small cerebral cortex

ADVANTAGES	DISADVANTAGES
• More inclusive than *YIF* since it is written by a minority • Speaks about great apes and relates it to human descent • Figures are approachable because of pictures in them	• Too much information correlated with neuroscience with not enough detail • Included too much experimental data without explaining its significance • Not as approachable as *YIF*; too specialized

OUR RECOMMENDATION

After reading both *Your Inner Fish* and *The Human Advantage*, we have concluded that *YIF* should be kept as a companion text for BIOL 399 Evolution. This is due to the fact that *THA* does not directly fulfill the course objectives.

REFERENCES

- Herculano-Houzel S. The human advantage: a new understanding of how our brain became remarkable. Cambridge, Massachusetts: The MIT Press; 2017.
- Shubin N. Your inner fish: a journey into the 3.5 billion-year history of the human body. London: Penguin; 2009.