

Study guide

Riskin, Jessica. *The Restless Clock*. Chicago And London, The University of Chicago Press, 2018, pp. 1-10. In this introductory chapter, titled "Huxley's Joke, or the Problem of Agency in Nature and Science", historian of science Jessica Riskin identifies a problem at the root of modern science.

1. Why, according to Thomas Huxley, should one -not- invoke a special “vitality” in order to understand living organisms? What analogy does he employ to poke fun at those who invoke vitalism?
2. What is meant by the term *agency*? Does agency necessarily imply consciousness? When did the scientific principle banning agency arise? In what sense was the ban on agency initially linked to theism?
3. In what sense do modern scientists employ use purposeful, or anthropomorphic, language when describing nature? (For example cells “want” to move toward a wound, proteins “regulate” cell division, cells “harvest” energy.)
4. How did Leibniz’s view of living organisms differ from the passive view adopted by classical (brute) mechanists? Where does agency reside according to each? Which group was more “religious” in their thinking?
5. What, according to Riskin, is the contradiction that lies at the origin of modern science? Do you think that all modern scientists agree on how to think about life? Do you think they *should* all agree? How, according to Riskin, is the study of the history of science intellectually fruitful? Do you agree?