

# Physics, Biology and Human Faculties: A Structural Stepwise Approach to Modeling Human Behavior<sup>1</sup>

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## Abstract

Seeking a better understanding of human behavior and social phenomena were the primary pursuits of Richard Day's scholarship, and of the *Journal* he co-founded and edited. In that pioneering spirit of adventure, we structure approaches to modeling human behavior in three steps with respect to scientific disciplines, their associated principles, and subject matters: human faculties, biology and physics. We notice that the extant practice of modeling human behavior in social sciences starts from psycho-sociological features and principles before moving to biological ones, and finally using physical laws for formalization. These formalizations are often presented with the disclaimer: of course, human behavior extends beyond our physical existence. Alternatively, but less often, they are defended in a reductionist spirit. In the present contribution we propose reversing this extant order of deploying scientific principles and argue that this exercise will help link social sciences to biology and physics, without reductionism.

*Keywords:* Physics, Biology, Human faculties, Modeling human behavior, Structural step-wise approach

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## 1. Introduction

Gaining a better understanding of human behavior was a primary pursuit of Richard Day's scholarship, and of the *Journal* he co-founded with Sidney Winter. In that pioneering and

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