METAPHYSICS AND PATENTING LIFE

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"Never say higher or lower."
Charles Darwin[1]

"[N]othing makes sense in biology except in the light of evolution."
Theodore Dobzhansky[2]

I. INTRODUCTION

Scientists estimate life on earth arose about four billion years ago. In its earliest form, life was probably little more than a simple single cell composed of a phospholipid cell membrane within which was housed a mixture of just enough simple nucleic acids, proteins, carbohydrates, and lipids to allow the cell to carry out basic survival functions, such as metabolism, and to make faithful copies of itself. Over time, in response to both environmental conditions and random genetic drift, this single celled organism and its offspring gave rise to every lineage of life on earth, from microscopic archaea and eubacteria to gargantuan sequoias and whales.[3]

Some lineages of life met their demise through extinction. Others gave rise to additional lineages that persist into the present day. Surviving lineages include organisms spanning the range of physical size from single cells to multiple cells to billions of cells. Judging the evolutionary success of surviving lineages can be done by judging any number of criteria, most of which are difficult to justify as objectively superior to alternative criteria. Criteria such as evolutionary radiation (that is, the number of relatively closely related lineages), location within a trophic web (that is, who eats whom), longevity, physical size, speed, complexity of social behavior, or cognitive capacity are all possible candidate criteria for this purpose. However, perhaps the ultimate measurement of evolutionary success remains constant: survival and reproduction into the next generation. In short, if a lineage of organisms persists into the present day, it is more successful by virtue of its persistent existence than those myriad lineages already terminated in the many *cul de sacs* of extinction.

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[1] STEPHEN JAY GOULD, FULL HOUSE: THE SPREAD OF EXCELLENCE FROM PLATO TO DARWIN 137 (Three Rivers Press 1997) (marginalia by Charles Darwin in a book advocating "progress" in evolution).

[2] Theodosius Dobzhansky, *Biology, Molecular and Organismic*, 4 AMERICAN ZOOLOGIST 443, 449 (1964).

[3] *See generally* Antonio Lazcano, *The Origins of Life: Have Too Many Cooks Spoiled the Prebiotic Soup?* 115 NAT. HIST., Feb. 2006, at 36.