Biological Message Passing

Authors

- **Ryan A. Hagenson**
  [0000-0001-9750-1925](0000-0001-9750-1925) · RHagenson · RAHagenson
  Department of Conservation Genetics, Omaha's Henry Doorly Zoo and Aquarium

Abstract

Introduction

Biological systems are driven by the passing of messages. Biological messages can be classified along external/internal and chemical/physical axes. External physical messages include audible roars and chirps, external chemical signaling include smell signaling, internal physical messages include touch signaling in cells, and internal chemical signaling include all of the endocrine system. The complexity of these messages, their delivery, interpretation, and proliferation are such that entire disciplines of research are dedicated to uncovering their mysteries. Computers have no such message-passing coordination restriction and are able to (often erroneously) coordinate via shared memory through the use of mutexes, semaphores, and/or monitors. Unfortunately, the familiarity of sharing memory has led to its misuse in managing complex concurrency. Herein I present the fundamental messages required by the "perfect species" as discussed previously in [1].

In brief, the perfect species discussed in [1] is a theoretical species which, without intervention could live immortally within a closed system of its own creation. Theorizing what such a species would need to be like is futile, so instead we define it by what it definitely ist not – large-bodied, permeable, containing a memory of past functionality, and so on.

References

1. **Biological Calculus**
Ryan Hagenson
GitHub (2019) https://rhagenson.github.io/biological-calculus/