

"The young lions roar for their prey, seeking their food from God." –Psalm 104:21 (ESV)

"... the final word of evolutionary biology always seems to come to this: death is the engine of nature" –Paul Santmire

DEATH AND DENIAL

I am an ecologist. Ecology is a life science, but why do ecologists spend much of their time studying death? Population ecology is all about regulatory factors and disturbance, synonyms for death. Behavioural ecology engages competition, exclusion, and adaptations mediated by dying. Our theory and practice revolve around disturbance, stress, predation, consumption, contest, and natural selection. Although ecologists deal extensively with death, we rarely name it. While reading Ernest Becker's 1973 classic, *The Denial of Death*, I was challenged – do we professionally deny death?

I am a Christian. Christianity is a religion of hope and new life, but why do Christians spend much of their time talking about death? Yes, Christmas is about the newborn saviour. Yet Easter is centered on the death and resurrection of Jesus. There is also the regular celebration of communion, a somewhat mysterious rite focused on brokenness and shed blood in a renewed covenant relationship. The ecotheologian Paul Santmire reminds us that we Christians "are unable to deny death. A religion," he notes, "that has a crucified Messiah as its fulcrum hardly permits that" (95). Again this is challenging – do we believers practically deny the death we claim by faith?

DEATH AND LIFE

Thus at the intersection of two major aspects of my life sits this discomforting question – is death a necessity? Ecologically the answer is yes. All organisms are capable of growing populations larger than their environments can support. Carolus Linnaeus, famous for the binomial naming system, and other 18th century scientists, recognized the problem of exponential growth. So did Darwin. Physical death is a key regulatory mechanism preventing run-away population abundance. From keystone predators that shape community diversity to aggressive behaviour toward competitors, we live in a world shaped by dying.



Today abundant new research details the ways that mortality shapes the biosphere. Imagine, for a moment, what a landscape might look like without death. It is nearly impossible to do so. The influence begins at the lowest levels. Cell mortality is a normal developmental component of life-forming processes. Developmentally, programmed cell death (PCD) is the genetic mechanism broadly responsible for sculpting bodies, eliminating abnormal (cancerous) cells, and healing wounded tissues. Not every cell in an embryo can survive. In order for separate fingers to form in a hand, for instance, the cells of the skin between must die. Without PCD we would have webbed hands and feet instead of free-moving fingers and toes. Such discoveries have changed the way biologists think about developmental processes.

Imagine what the famous Canadian maple leaf would look like without cell death. The points and indentations in this iconic form are shaped by cell death. It is now clear that no creature would have its current shape without cells dying. These cellular processes scale upward, where death is expressed in every biotic community, providing structural integrity to food webs and ecosystem processes. Without the formative mechanism of mortality, we cannot describe the shape, behaviour, or systems of the biosphere. Nothing in ecology makes sense apart from the operations of physical death.

DEATH BY DESIGN?

But is death by design? Was it planned from the beginning as part of the created order? Or is death, as is often said in the traditional view, an intrusion? This is the central dilemma for many between science and Christianity. How can there be a good, wise and loving creator of all if there

is suffering and death? Physical death, on this view, is the result of a cosmic fall from a state of grace. However, beginning with Dietrich Bonhoeffer and Karl Barth in the 20th century, contemporary theologians have been rethinking this common-sense reading of the Genesis accounts. Finiteness, they have noticed, is present in the Hebrew accounts of beginnings. From the outset humanity has been mortal, with a limited life span. Why else would there be a "Tree of Life" in the Garden story? And why is there exclusion from it unless they were already physically mortal? These close re-readings raise challenging issues, while pointing to intriguing new possibilities for the discourse of science and faith. We are faced with daunting life challenges today. The marvels of the biomedical sciences, applied at both birth and death are paralleled with deep questions on the nature of humanity and the good life.



"My God, my God. Why have you forsaken me?" These are some of the most fearful words ever spoken. We sense the loss and hear the bitter cry of human hopelessness in Jesus' words. Without God, in death we are utterly alone. We spiral into the oblivion of non-being – nothingness. Talking about physical death is troubling for us. Yet here is Jesus facing his own death in a peculiar way – "for the joy that was set before him, he endured the cross" (Hebrews 12:2). Physical death was not optional for him, and it is not optional for us. Without the witness of his resurrection, death would leave us empty of relationship. Physical death is the necessary gateway. But a new life of restored being, relationship and agency is the hope secured in the once again living Christ. In view of the resurrection, Paul proclaims: "Where, O death, is thy sting?" (1 Cor. 15:55). Physical death still happens but comes with an incredible dividend, ever-

lasting life that far outweighs our temporary suffering on earth. Rethinking physical death, in the context of ecology and theology will be, I think, a powerful exercise for better understanding both of God's good stories – nature and the scriptures. 🌿

FIND OUT MORE

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CHRISTIANITY AND MAINSTREAM SCIENCE IN DIALOGUE




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This project/publication was made possible through the support of a grant from

"Faith and Science, eh?"



Ecology and the Necessity of Death



CANADIAN SCIENTIFIC & CHRISTIAN AFFILIATION

