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Disciplinary Brief

THE RADICALNESS OF LOVE - FOR THE NATURAL SCIENCES AND THE RESEARCH UNIVERSITY

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Love Should Be Primary For A Christian Scholar

I was both surprised and challenged by O'Donovan's argument that love should be primary for a Christian scholar. My prior perspective was that universities are primarily about thinking. Integrity, both intellectual and moral, should be the main characteristic of Christian scholars. This includes integrating disciplinary knowledge with theology. However, I now see that love should subsume integrity, just a Jesus challenged us.

From Loving the Creation to Loving its Creator

O'Donovan states: "Those for whom specialised knowledge constitutes their sphere of work thus face a challenging question: how may they love that one aspect of the world which they know very well, while focussing their love finally upon God and their neighbours?" This challenge of a dual focus must be related to the question: how does one resist the temptation to worship the creation not the Creator (Romans 1:18-25)? As I discuss below, modern physics is truly amazing and beautiful. This has led some theoretical physicists (for example, authors of popular books such as Sean Carroll, Paul Davies, and Frank Wilczek) to follow the example of Albert Einstein and be in awe of nature and our ability to understand it. Unfortunately, they either deny the existence of God or at least his personal nature.

Loving our "Enemies" in the Academy

Love for others is particularly challenging as it includes love for enemies. A scholar may encounter many enemies (both real and perceived): colleagues who oppose their ideas, anonymous reviewers who make unjustified criticisms, bureaucrats who frustrate, impede, and burden with dubious administrative requirements, and increasingly members of the public or politicians who make ill-informed criticisms of their work, its value, or its applications. [1] Feuds in academia can be bitter. Turf wars can be intellectual or political. Competition for limited resources can be brutal. Universities are hierarchial and sometimes

credit is taken, or are given [2], by senior people, when junior people did most of the work. Christians may suffer because some members of the university community will oppose them, just because they identify as Christian. On the other hand, some criticisms we receive may be valid, or contain some truth. This can be painful. Overall, we are called to be humble and respond with grace and mercy to those who make our life in the academy more difficult.

A Liturgy of Love at the start of an Academic Day

The concern for love enlivened a liturgy that I often pray before commencing work. Here are a few lines [3]

> "May I learn to love learning, O Lord,
> for the world is yours,
> and all things in it speak
> -each in their way – of you:
> of your mind,
> your designs,
> your artistry,
> your power,
> your unfolding purpose.
>
> All knowledge is your knowledge.
> All wisdom your wisdom....
>
> Let me be in this school, even is small ways,
> a bearer of love and light and reconciliation;
> which is to say, let me in humility be your child..."

Counter-Cultural Dimensions To Love In The Academy

The love commands of Jesus were counter-cultural in the first century. His followers were largely from the lower echelons of society and faced opposition from both Roman imperial and Jewish religious leaders. Obedience could come at a high cost.

The commands are also radically counter-cultural in universities today, as they are dominated by four inter-twined values: money, marketing, management, and metrics. In the USA, elite universities have become business conglomerates covering health care, real estate, sports, and multi-billion-dollar share portfolios. [4] Students are viewed as customers. Commercialisation has undermined academic values and independence. [5] Individual faculty and departments are evaluated based on how much revenue they generate for the university, rather than the quality of their teaching or research. The marketing of institutions and research outcomes has degenerated into hype and BS. [6] There has been a massive shift

in power and decision making from faculty to centralised management. [7] Faculty are hired and promoted based on metrics such as the number of citations of their publications and student evaluations of teaching, rather than qualitative evaluations from experts. The social and institutional pressure to conform to these values is immense.

Peter Harrison recently discussed how, following the characterisations of Max Weber, secularisation (and the associated utilitarian goals) of the social context has led in the university to disenchantment, diminishment of virtue, and being trapped in the “iron cage” of bureaucracy. [8]

To counter disenchantment, Tom McLeish argued that Christian natural scientists need to adopt a contemplative stance in their work. [9] He observed that the book of Job

> “urges us not to look on the natural world for signs of God, nor through it as a window onto some dim divine image, but to learn to look on nature with God’s eyes, aligning our servant gaze with, not at, the divine. The same searching look of creative power and insight, of love, with which God participates in his created nature is to be the direction, if only in image, of our participation also.”

This resonates with O’Donovan’s definition of love as “affective and directive attention to a good.”

The importance of virtue for a Christian scholar was explored previously in a Theology Brief by Jennifer Herdt. [10] In his Disciplinary Brief, responding to O’Donovan, Ian Hutchinson suggests “humility seems the most difficult value in the academy.”

In summary, love offers an antidote to the maladies of the modern university and a path to follow.

The Natural Sciences Are A Miracle That Can Inspire The Love Of God

Ian Hutchinson rightly asks: “Does love not have a role to play in the intellectual challenge, the awesome wonder, the simple pleasure that understanding the laws of nature can inspire?” I consider it a privilege to be a physicist today. On the one hand, there is much we do not understand. On the other hand, it is amazing what we do know and understand, from sub-nuclear physics to the distant reaches of the universe. A decade ago, Terry Halliday suggested I develop a talk about why I think science is so awesome. I have now given it many times. [11] The wonders include the immense scale of the universe, the fine-tuning of physical constants, intricate biomolecular machinery, and our ability to predict the outcome of experiments and make incredibly precise measurements.

For Albert Einstein, the *success* of science was a wonderful mystery: [12]

> . . . I consider the comprehensibility of the world (to the extent that we are authorized to speak of such a comprehensibility) as a miracle or as an eternal mystery. Well, *a priori*, one should expect a chaotic world, which cannot be grasped by the mind in any way . . . the

kind of order created by Newton's theory of gravitation, for example, is wholly different.

There are several dimensions to the comprehensibility of the universe being mysterious. Einstein highlights the first mystery, which is that there is order in the world, as reflected in scientific laws, such as Newton's theory of gravity, and that this order can be succinctly stated in the language of mathematics. A second dimension that makes science possible is that humans can do it. They have the intellectual abilities, language capabilities, and physical dexterity to do it. Eugene Wigner received the Nobel Prize in Physics in 1963 for work using the mathematics of symmetry to understand the quantum theory of atoms and elementary particles. In 1960, he published an essay, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences," [13] which concludes with the much-quoted statement: "The miracle of the appropriateness of the language of mathematics for the formulation of the laws of physics is a wonderful gift which we neither understand nor deserve."

For a Christian the success of science may be less of a mystery, but still awesome, because we are made in the image of the creator God who is orderly and rational. Contemplation of this should inspire love of God, His creation, and our vocation.

Some Practical Dimensions To Love In The Academy

O'Donovan warns against "an impractical idea of love that is confined to attitudes and feelings, and does not form a practical direction for action." Here I suggest some practical directions, particularly from my experience in the natural sciences.

Truth

There are significant cultural pressures to overstate the certainty, significance, and potential commercial applications of current research. Hype and BS [14] have become common. Furthermore, I encounter inconsistency between what some scientists say in private, in presentations in seminars and conferences, in journal articles, in grant applications, in university press releases, and in popular books. This reflects a lack of intellectual and moral integrity. Concerns about the reproducibility and replicability of research results in psychology, medicine, and social sciences now extend to my own field of condensed matter physics. [15]

Communication

O'Donovan states "communication is perhaps the most important way in which our engagement with knowledge is kept pressing forward.... it brings the love of knowledge into immediate connection with the love of persons."

Clarity with Peers

Most scientific papers are difficult to understand, even for experts. Understanding the content of a paper and evaluating its veracity, significance, and relevance is a massive amount of work, particularly for beginning graduate students. Unfortunately, this is not just because of the technical and specialised nature of the content. Too often there are simple questions that authors do not clearly and directly address: What is the main result of the paper? How can this work be placed in the broader context of the research field? Are the results consistent or inconsistent with earlier work? Is there a simple idea underlying the sophisticated techniques (experimental, mathematical, computational) used? (Too often this is hidden behind jargon and techniques are treated as black boxes). What are the assumptions of the method? What are its strengths and weaknesses? Why might the results or conclusions of this study be wrong?

There are significant cultural pressures against authors taking the time and effort to clearly and transparently answer such questions. First, the pressure is to produce as many papers as possible and to have as many graduate students and postdocs writing papers as possible. Second, there may be a cultural predisposition that the more complicated and technical something is the more profound and significant it is. Third, intense competition for resources and credit may preclude acknowledging weaknesses or letting competitors really understand the details of what you are doing because they might put you out of business.

Public Communication

In 1945, C.S. Lewis challenged Christian scientists to write popular books: [16]

> “I believe that any Christian who is qualified to write a good popular book on any science may do much more by that than by any directly apologetic work... [A materialist] would be troubled if, whenever he wanted a cheap popular introduction to some science, the best work on the market was always by a Christian.”

Lewis’ hope seems to have been fulfilled in the books about physics in the *Very Short Introductions* series published by Oxford University Press. By my count, the authors of at least ten of the volumes are Christians. Indeed, Lewis’ concern was part of the motivation for me contributing my own volume. [17]

A Critique of Specialised Knowledge and Fragmentation

O’Donovan states “The “university”, conceived in the faith that a plurality of studies conducted together possessed a value that none could have on its own, gives way to the “multiversity” where forms of learning are marketed in competition to one another.”

I affirm that competition as a dominant value is a significant problem. However, there are several other problematic dimensions to the intellectual and social fragmentation associated with the multiversity. Jerome Kagan was a prominent psychologist who lamented: [18]

> “The large numbers of younger faculty competing for a professorship feel forced to specialize in narrow areas of their discipline and to publish as many papers as possible during the five to ten years before a tenure decision is made. Unfortunately, most of the facts in these reports have neither practical utility nor theoretical significance; they are tiny stones looking for a place in a cathedral. The majority of ‘empirical facts’ in the social sciences have a half-life of about ten years.”

Unfortunately, the concern that too many papers “are tiny stones looking for a place in a cathedral” also applies to the natural sciences.

I have worked on a broad range of topics in theoretical condensed matter physics and chemical physics. Often researchers in slightly different areas will develop techniques and concepts that are essentially the same, but they are unaware, because they do not communicate with one another. Even if they do their language may be so different they cannot understand each other.

Multi-disciplinary initiatives are valuable but challenging because the institutional and communication barriers to them bearing fruit are formidable. A fascinating and important area that deserves more attention is the unifying concept of emergence. It concerns how a system with many interacting parts can have properties that are qualitatively different from those of the parts. [19]

Love Of Old Knowledge and Obsession with Novelty

O’Donovan states:

> “The love of knowledge is both old and new: a delight in learning what we did not know and a delight in retaining and affirming what we have learned. There is no reason to undervalue established forms of knowledge.”

Novelty

This resonates with Wendell Berry. One of his many criticisms of modern research universities is their obsession with novelty. [20] This is not just a problem for the humanities. My own field of condensed matter physics is driven by short attention spans and fashions, as researchers flock to work on the latest discovery, rather than making a sustained effort to understand old, difficult, and important problems. [21] Again, there are significant institutional pressures to conform. Money, management, marketing, and metrics drive this pressure.

Another unfortunate consequence of the obsession with novelty is an increasing tendency to abandon the law of parsimony (Occam’s razor), the principle that one should always prefer the simplest possible explanation for an observed phenomenon. Instead, researcherpropose unnecessarily complex interpretations of their observations. [22]

Old Knowledge

A love for old knowledge might also be reflected in how the natural sciences are taught. Traditionally, scant attention is given to the history of a subject or underlying philosophical issues. The path to the hard-won knowledge that we quickly teach students is usually ignored. The arguments for this are usually reflect dominant values of functionality and efficiency. [23]

Perhaps a way forward on many of the issues I have raised here is for the natural sciences to be transformed by a revival of natural philosophy, as advocated by Alister McGrath. [24]

Conclusion: Radical costly love

The radical love that Jesus challenges us to practise is counter-cultural in universities today. Being obedient is challenging and costly. How might it be possible given our finitude, fears and fraility? The answer is provided by O'Donovan in his final words: "The love of God must be "poured into our hearts by the Holy Spirit that is given us" (Romans 5:5)."

Endnotes

[1] See for example, Dan Kagan-Kans, “The Rise of ‘Conspiracy Physics’: Streamers are building huge audiences by attacking academic physics as just another corrupt establishment. Scientists are starting to worry about the consequences.” Sept. 11, 2025*, The Wall Street Journal*, https://www.wsj.com/science/physics/the-rise-of-conspiracy-physics-dd79fe36.

[2] Robert K. Merton, “The Matthew Effect in Science,” *Science* 159, 56–63 (1968).

[3] Douglas McKelvey, *Every Moment Holy*, volume 1, (Rabbit Room Press, 2017), p.38.

[4] Hunter R. Rawlings III, “Universities on the defensive”, *Princeton Alumni Weekly*, April 2, 2014. https://paw.princeton.edu/article/universities-defensive. The “teaching of undergraduate students on campus has become a quaint, tiny fraction of these universities’ purpose and function.” Rawlings was a President of Cornell University and of the Association of American Universities, a consortium of sixty leading North American universities.

[5] Derek Bok, *Universities in the Marketplace: The Commercialization of Higher Education* (Princeton University Press, 2004). Bok was a President of Harvard University.

[6] Christian Smith, “Higher Education is drowning in BS,” *The Chronicle of Higher Education*, Jan 9, 2018. https://www.chronicle.com/article/higher-education-is-drowning-in-bs/.

[7] Benjamin Ginsberg, *The Fall of the Faculty: the Rise of the All-Administrative University* (Oxford University Press, 2011).

[8] Peter Harrison, “How our universities became disenchanted: Secularisation, bureaucracy and the erosion of value” https://www.abc.net.au/religion/peter-harrison-disenchanted-universities-secularism-bureaucracy/105895462.

[9] Tom McLeish, “The Re-Discovery of Contemplation through Science: Boyle Lecture 2021,” *Zygon* 56, 758–776 (2021).

[10] https://project-gfi.magicpatterns.app/article/209-the-virtues

[11] https://revelation4-11.blogspot.com/2026/01/science-is-awesome.html

[12] Albert Einstein, *Letters to Solovine* (New York: Philosophical Library, 1987), p. 131.

[13] Eugene Wigner, “The unreasonable effectiveness of mathematics in the natural sciences” *Communications in Pure and Applied Mathematics* 13 (1960), pp. 1-14.

[14] Christian Smith, “Higher Education is drowning in BS,” *The Chronicle of Higher Education*, Jan 9, 2018. https://www.chronicle.com/article/higher-education-is-drowning-in-bs/.

[15] A. Akrap et al., “Report on reproducibility in condensed matter physics,” *Physical Review B* 113, 119601 (2026).

[16] C.S. Lewis, "Christian Apologetics" (1945), included in *God in the Dock* (Eerdmans, 1970), p. 93.

[17] Ross H. McKenzie, *Condensed Matter Physics: A Very Short Introduction* (Oxford University Press, 2023).

[18] Jerome Kagan, *The Three Cultures Natural Sciences, Social Sciences, and the Humanities in the 21st Century* (Cambridge University Press, 2009). See also the lament about fragmentation from Stanley Hauerwas recounted in my blog post,

https://condensedconcepts.blogspot.com/2017/04/have-universities-lost-sight-of-big.html. Many of the comments from readers affirm my concerns about the natural sciences.

[19] Ross H. McKenzie, “Emergence: from physics to biology, sociology, and computer science”, https://arxiv.org/abs/2508.08548.

[20] Wendell Berry, *Life is a Miracle: An Essay Against Modern Superstition* (Catapult, 2001).

[21] https://condensedconcepts.blogspot.com/2013/09/exotica-blessing-or-curse-to-condensed.html.

[22] Igor Mazin, “Inverse Occam’s razor”, *Nature Physics* 18, 367–368 (2022).

[23] Lorrain Daston and Peter Harrison, “The Missing Conversation,” *Aeon*, 5 January 2024, https://aeon.co/essays/science-and-history-cannot-afford-to-be-indifferent-to-each-other. Matthew Stanley, “Why should physicists study history?” *Physics Today*, July 2016.

[24] Alister E. McGrath, *Natural Philosophy: On Retrieving a Lost Disciplinary Imaginary* (Oxford University Press, 2023).

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