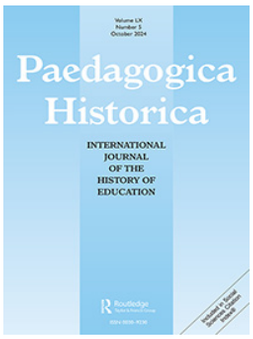

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Evolutionary science in denominational colleges at Australian universities, 1907–2020

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ABSTRACT

This article examines the place of evolutionary science in protestant and Catholic residential colleges associated with Australian public universities across the twentieth and early twenty-first centuries. Although faith-based universities are a relatively recent phenomenon in Australia, a quasi-federal model of secular teaching and accrediting universities linked to church-run non-teaching residential colleges developed with the founding of the first Australian university, the University of Sydney, in the 1850s. The model was subsequently replicated, with local variations, across the first generation of Australian public universities. This interface between mainstream secular and more selective religious spaces makes the colleges an instructive setting in which to examine science-and-religion ideas in institutional context. As principally pastoral, residential institutions the colleges did not have curricula or significant research programmes of their own, but student publications produced within them shed light on the attitudes and beliefs of students and some staff regarding evolutionary science, and science more generally, in relation to religion. The article analyses a corpus of more than 700 student publications published between 1907 and 2020 and associated with the Universities of Sydney, Melbourne and Queensland, the three institutions with the most developed collegiate systems. The analysis shows the complexity of ways in which evolutionary science was understood within the denominational colleges, and the limits set to those understandings by college authors' plural institutional contexts.

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KEYWORDS
Higher education; universities; denominational colleges; evolutionary science; religion; student publications

Introduction

The place of science within religious institutions of higher education in Australia presents unique patterns of development. Unlike in many other national contexts, in Australia faith-based universities and non-university tertiary institutions teaching broad programmes in the humanities and the natural and social sciences are a relatively recent phenomenon.[1] There is, however, a long-standing tradition,

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[1]The private University of Notre Dame Australia, a Catholic institution, was founded in Western Australia in 1989, and now also has a campus in Sydney. The public, multi-campus Australian Catholic University was founded in 1991, an amalgamation of several older Catholic colleges focused mainly on training teachers and nurses. Both universities now have broad bases across the disciplines. Campion College, a small private Catholic non-university institution, was

central to mainstream Australian higher education, of protestant and Catholic denominational colleges affiliated with the older public, and principally secular, universities. A quasi-federal model of a secular, non-residential teaching and accrediting university linked to church-run, non-teaching residential colleges emerged from complex church-state relations and religious pluralism in the founding of the University of Sydney in the 1850s. The model was subsequently replicated, with local variations, across the first generation of Australian universities – known as the "sandstone" universities, after their distinctive Victorian and Edwardian architecture – in each of the country's six state capital cities.

This paper focuses on understandings of science, particularly evolutionary science, in denominational residential colleges affiliated with the Universities of Sydney (founded 1850), Melbourne (1853), and Queensland (1909), across the twentieth and early twenty-first centuries. These three institutions have the most developed collegiate systems of the six sandstone universities, affording a wide evidence base for analysis. Beliefs about science in these settings have been shaped by interfaces between mainstream secular and more selective religious settings, linkages that make their institutional cultures distinct from those of standalone institutions, whether secular or religious. A science student in residence at one of the University of Melbourne colleges, for instance, might attend lectures and classes in the daytime at a constitutionally secular institution, returning to the college in the evening for a formal meal with full religious ceremony, followed by tutorial assistance from a resident tutor.

Evolutionary science is the central focus here because it in some respects forms the paradigm case, at least in the modern period, of the supposed conflict between science and religion. The "conflict thesis" of an inherent antagonism between the two first emerged in the late nineteenth century in the wake of the Darwinian revolution and the attendant shift in norms of scientific practice toward naturalistic explanatory models.[2] Evolutionary science has since been at the centre of major episodes of science-religion conflict, such as the 1925 Scopes trial in Tennessee over the teaching of evolution in public schools. More recent antagonisms between young-earth creationists and the Intelligent Design movement on the one side, and New Atheists on the other, have likewise centred on evolution. The salience of evolutionary science in these debates reflects its significance to questions of what it means to be human, and to beliefs about human exceptionalism.[3] However, especially since John Hedley Brooke's *Science and Religion: Some Historical Perspectives* (1991), historical studies of science and religion have

founded in Sydney in 2006. It teaches a set undergraduate liberal arts programme, including at third-year level basic biology, and history and philosophy of science, and otherwise comprising humanities subjects with an emphasis on "Western Civilisation". Avondale University of the Seventh-day Adventist Church, based in New South Wales, and the multi-campus, Pentecostal Alphacrucis University College both originated as bible schools but in recent decades have expanded their offerings to include business, teaching and counselling. Avondale also has programmes in nursing, the humanities and the natural sciences.

[2] James C. Ungureanu, *Science, Religion, and the Protestant Tradition: Retracing the Origins of Conflict* (Pittsburgh: University of Pittsburgh Press, 2019).

[3] Fern Elsdon-Baker, "Creating Creationists: The Influence of 'Issues Framing' on Our Understanding of Public Perceptions of Clash Narratives between Evolutionary Science and Belief", *Public Understanding of Science* 24, no. 4 (2015): 422–39.

moved away from the idea of an inherent antagonism between the two, to consider a range of more complex relations and connections between them.[4] Educational settings are instructive ones in which to explore the complexity of such relations.

As principally pastoral, residential institutions, the colleges do not have curricula or significant research programmes of their own, except that some have attached "theological halls" to train theology students in programmes separate from those of the main affiliated universities.[5] This article therefore draws not from the evidence of scientific research or teaching, but rather on student publications produced within the colleges, typically on an annual basis. The focus is not on scientific practice but on the ways science was understood. The earliest student publications began to appear in the first decade of the twentieth century, and some are still published today. In all, a corpus of 732 issues dating from 1907 to 2020 and affiliated with 17 colleges across the three universities has been examined for relevant materials, using a mixture of keyword searches (for those that are digitised) and manual perusal in hard copy. These publications shed light on the attitudes and beliefs of students – and some college staff, university academics and church figures – regarding evolutionary science, and science more generally, in relation to religion.

In some types of religious institutions student publications have typically been tightly controlled or censored by institutional administrators. That has historically been the case, for instance, for the student publications of the American fundamentalist universities documented by Adam Laats.[6] Such direct control, though perhaps exerted occasionally over the student managing committees of the Australian college annuals, is not the focus here. In any case, widespread changes in the publications' tone from around 1970, in line with shifts in wider student cultures, suggest a large scope for editorial freedom. Nor are the Australian denominational colleges fundamentalist, so greater acceptance of a range of student speech is more in line with their respective religious traditions. Nevertheless, any examination of science within religious institutions hinges on the premise that the institutional context has some significant bearing on the character of scientific practice or discourse. The focus therefore is on what Pierre Bourdieu calls the "field of opinion", and with it the limits of the sayable, which are structured less by moments of explicit censorship than by the social conditions of the institutional environment – in this case by the dual university-college setting.[7] The field of opinion and its limits are visible in aggregate, beyond mere individual opinion. In such aggregation, I am generally unconcerned with authorship, except where relevant to distinguish students from college staff, academics and others.

[4]John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991); David C. Lindberg and Ronald L. Numbers, eds., *When Science and Christianity Meet* (Chicago: University of Chicago Press, 2003); Ronald Numbers, ed., *Galileo Goes to Jail, and Other Myths about Science and Religion* (Cambridge, MA: Harvard University Press, 2009); Peter Harrison, *The Territories of Science and Religion* (Chicago, IL: University of Chicago Press, 2015); Bernard Lightman, ed., *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle* (Pittsburgh, PA: University of Pittsburgh Press, 2019); and Fern Elsdon-Baker and Bernard Lightman, eds., *Identity in a Secular Age: Science, Religion, and Public Perceptions* (Pittsburgh, PA: University of Pittsburgh Press, 2020).

[5]On the history of theological education in Australia, see Geoffrey R. Treloar, "Towards a Master Narrative: Theological Learning and Teaching in Australia since 1901", *St Mark's Review* 210 (2009): 31–53; and Les Ball, "A Thematic History of Theological Education in Australia", in *Theological Education: Foundations, Practices, and Future Directions*, ed. Andrew M. Bain and Ian Hussey (Eugene, OR: Wipf and Stock, 2018), 88–100.

[6]Adam Laats, *Fundamentalist U: Keeping the Faith in American Higher Education* (New York: Oxford University Press, 2018), 92, 192–200.

[7]Pierre Bourdieu, *Outline of a Theory of Practice*, trans. Richard Nice (Cambridge: Cambridge University Press, 1977), 164–70.

As the institutional setting is critical to how we read science-and-religion content in the college student publications, the first section traces the historical development of the Australian university-college model as a product of problems of public funding, moral instruction, and competing sectarian and secular interests. The second introduces the corpus of student publications under consideration, and the college contexts from which these publications emerged. The final part analyses the contents of the corpus, showing the complexity of ways in which evolutionary science was understood within the denominational colleges, and the limits set to those understandings by college authors' plural institutional contexts.

Religion and secularism in the formation of Australia's quasi-federal universities

The quasi-federal model of the older Australian universities, in which a secular, non-residential teaching and accrediting university is surrounded by a cluster of denominational residential colleges, was a product of sectarian tensions and problems of public funding in the founding of the University of Sydney in the 1850s. Among the university's founders, it was generally accepted that private endowments would not be sufficient, and that state funding would be necessary.[8] However, in a mixed religious community without an established church, in an age in which education was predominantly denominational – and indeed in which for many students a university education served as training for holy orders – public funding for education proved highly contentious. The answer was some sort of federal system, linking separate denominational colleges into an overarching university.

Between an initial structure proposed in 1849, and a final settlement in university-college relations reached in 1858, several quasi-federal models were tried out, drawing from the examples of Oxbridge, the Queen's Colleges in Ireland, and the University of London. The 1850s was a decade of contest between religious and secular interests, and between different confessional communities. The settlement eventually reached in 1858 was for a cluster of geographically proximate church-run colleges – Anglican, Catholic, Presbyterian and Methodist, the four main denominations in the colony – organised around a mainly secular central university. The solution represented the victory of the central secular institution over the colleges, as both teaching and accreditation fell to the main university, with the colleges becoming non-teaching residential facilities that provided students with religious instruction, extra tutorial assistance, pastoral care and – particularly as the university grew in size – corporate life on a more intimate scale than the central institution allowed.[9] Some in the colleges resented their reduction in status to non-teaching residential facilities well into the twentieth century.[10]

The University of Melbourne was founded just three years after its Sydney counterpart. The central Melbourne institution was more rigorously secular than that at Sydney, and emerged out of much calmer religious waters, Melbourne's founders having learned from the experience of Sydney a lesson in the dangers of sectarian controversy in the building of

[8]Clifford Turney, Ursula Bygott and Peter Chippendale, *Australia's First: A History of the University of Sydney*, vol. 1 (Sydney: University of Sydney in association with Hale & Iremonger, 1991), 25.
[9]Ibid., 4–15, 27–8, 38–56, 71–92.
[10]G. F. C., "Andrew's in Retrospect", *Magazine of St Andrew's College* 1, no. 36 (1939): 20–2; and M. E. Eyers, "Sidere collegium idem mutato", *Johnsman* (1967): 5–6.

new institutions. The first council included four clergymen, out of 20 members, but unlike at Sydney men in holy orders were expressly excluded from consideration for the founding professorial appointments. In 1881 the university's enabling Act was amended to explicitly prohibit the teaching of theology, a restriction reaffirmed in 1910.[11] Nevertheless, at Melbourne as at Sydney a quasi-federal system of denominational colleges likewise developed. A driver of this development was the belief of many, such as founding professor of mathematics William Wilson, that a secular, non-residential university without organised capacity for religious and moral instruction was "incomplete".[12] There was a large sense in which universities' relations with their students was understood to be *in loco parentis*, providing surrogate guardianship outside the family home.[13]

A key difference between the two universities' college systems was that whereas the Sydney colleges were funded and specifically enabled by legislation of parliament, the Melbourne University Act of Incorporation gave the university itself the right to affiliate with it "any College or Education Establishment".[14] Unlike at Sydney, there was no state funding for the Melbourne colleges, though the government did set aside land adjacent to the campus for the development of colleges. These were not initially envisaged as necessarily church establishments. However, the Catholic church in 1860 applied for a section of the allocated land, and by October 1861 a scheme had been agreed for the same four denominations as at Sydney to each receive around 10 acres.[15] The Melbourne colleges' reliance upon the private resources of their respective confessional communities meant that they were not established for another decade or more, commencing with the Anglican Trinity College in 1870. The college networks at both universities subsequently expanded beyond the original four denominational allocations at each, first from the 1880s by the addition of women's colleges and residential halls – the earliest colleges being for male students only – and then in the postwar period by the development of semi-collegiate and non-collegiate halls of residence and other alternatives to college residence. The latter broke down universities' *in loco parentis* status, as student cultures shifted in favour of greater independence.[16] Today most colleges are co-educational, though a small number remain for male and for female students only.

The university-college division of labour worked out at Sydney and Melbourne as a solution to problems of public funding, religious difference and moral supervision was more or less replicated, with local variations, at the rest of the first generation of Australian universities. At the Universities of Adelaide (founded 1874), Tasmania (1890, in Hobart), Queensland (1909, in Brisbane) and Western Australia (1911, in Perth), governments all followed the Victorian legislative model enabling universities to establish their own affiliations. That the colleges at all these institutions are for the most part church-run, residential and non-teaching bodies providing moral and religious

[11]R. J. W. Selleck, *The Shop: The University of Melbourne, 1850–1939* (Carlton: Melbourne University Press, 2003), 17, 22–4, 30, 174–5, 470–1.
[12]Ibid., 131–32; "Wilson, William Parkinson (1826–1874)", *Australian Dictionary of Biography*, 1976, https://adb.anu.edu.au/biography/wilson-william-parkinson-4870/text8143.
[13]Stephen Joseph Pascoe, "The Social and Spatial Construction of Student Housing: The University of Melbourne in an Age of Expansion" (MA thesis, University of Melbourne, 2011), 28–9.
[14]*An Act to Incorporate and Endow the University of Melbourne 1853* (Victoria), s. VIII.
[15]Philip Raymont, "An Australian Hybrid: Australia's Universities and Their Colleges", *History of Education Review* 30, no. 2 (2001): 73–85.
[16]Pascoe, "Social and Spatial Construction of Student Housing".

supervision traces in turn to the experience of Sydney in the 1850s.[17] Of the later "sandstones", Adelaide and Western Australia today have four undergraduate colleges each, plus the postgraduate Kathleen Lumley College at Adelaide. All of these are twentieth-century establishments. Tasmania remains a small institution today, with just three colleges.

Despite its late founding date, Queensland quickly built a college system comparable with those at Sydney and Melbourne; today it has eight colleges of a broadly Christian character (one non-denominational), plus several other colleges and halls with no religious affiliation. This network reflects the expansion of the university in the postwar period, especially in the later 1950s. In wider context such growth was part of a rapid national expansion of higher education from the mid-1950s, as the effects of the postwar baby boom kicked in. Between 1955 and 1966 national student enrolments tripled from around 30,000 to 91,000.[18] Expansion in this period was both enabled and guided by two major federal government inquiries into higher education, known as the reports of the Murray (1957) and Martin (1964–65) committees.[19] At Queensland, enrolments nearly doubled between 1955 and 1960, from 4,500 to 8,700 students, making it the third largest university in the country, behind Sydney and Melbourne with between 11,000 and 12,000 students each. In 1958 the new Monash University was founded in suburban Melbourne; on the recommendation of the Murray committee, it was established on a comprehensive disciplinary basis, to take enrolment pressures off Melbourne University. As this effect was felt from the early 1960s, Melbourne's student numbers levelled off, and by 1966 Queensland was the second-largest Australian university, with 14,400 enrolments.[20]

The college annuals and their institutional contexts

The college systems at Sydney, Melbourne and Queensland Universities exhibit some broad similarities but also local patterns of variation. In what follows, I consider only those colleges that produced student publications I have been able to examine, and exclude non-religious colleges and other non-collegiate halls of residence. For instance, I have included the publication of the non-denominational Christian Women's College at Queensland, but excluded that of Women's College at Sydney, which has no religious affiliation. Within these parameters, there are five relevant colleges at Sydney, six at Melbourne grouped into four denominational affiliations, and six at Queensland (Table 1). At Sydney the original four men's colleges are St Paul's (Anglican), St Andrew's (Presbyterian), St John's (Catholic) and Wesley (Methodist).[21] All are now co-

[17]Raymont, "Australian Hybrid".
[18]David S. Macmillan, *Australian Universities: A Descriptive Sketch* (Sydney: Sydney University Press, 1968), 77; and Commonwealth Bureau of Census and Statistics, *University Statistics, 1966*, Part 1 (Canberra: Commonwealth Bureau of Census and Statistics, Canberra. 1966), 7.
[19]Gwilym Croucher and James Waghorne, *Australian Universities: A History of Common* Cause (Sydney: NewSouth, 2020), 101–12, 119–29.
[20]Macmillan, *Australian Universities*, 77.
[21]In 1977, sections of the Australian Methodist, Presbyterian and Congregationalist churches merged to form the Uniting Church in Australia. Some of the colleges discussed are therefore now governed by state synods of the Uniting Church, or by multi-denominational boards. For simplicity, the denominations given are in all cases the original denominations only. David Hilliard, "The Religious Crisis of the 1960s: The Experience of the Australian Churches", *Journal of Religious History* 21, no. 2 (1997): 227, notes that the significance to Australian society of "denominational subcultures" declined from the 1960s.

Table 1. Relevant colleges of the Universities of Sydney, Melbourne and Queensland, and their student publications.

College	Original denomination	Gender	Publication title(s)	Date range examined*	Issues examined
Sydney					
St Paul's College	Anglican	Male, co-ed from 2023	*The Pauline*	1911–2006	102
St Andrew's College	Presbyterian	Male, co-ed from 2002	*The St Andrew's College Magazine*; *The Magazine of St Andrew's College*; *Andrews*; and variants	1908–77	72
St John's College	Catholic	Male, co-ed from 2001	*The Magazine of St John's College*; *John's*; *Johnsman*	1922–89	38
Sancta Sophia College	Catholic	Female, now co-ed for postgraduates	*Sancta Sophia*; *Sancta Sophia College*; *The Shimmie Gazette*; *The Sancta Shimmie*	1927–2002	34
Wesley College	Methodist	Male, co-ed from 1969	*Wesley College Journal*; *The Journal of Wesley College*	1924–65	30
Melbourne					
Trinity College and Janet Clarke Hall	Anglican	Trinity: male, co-ed from 1974; JCH: female, co-ed from 1973	*The Fleur-de-lys*	1907–79	73
Queen's College	Methodist	Male, co-ed from 1973	*The Wyvern*	1923–2020	92
Ormond College	Presbyterian	Male, co-ed from 1973	*The Ormond Chronicle* (also *Ormond Papers*)	1921–91	65
Newman College and St Mary's College	Catholic	Newman: male, co-ed from 1979; St Mary's: female, co-ed from 1977	*Newman*; *Vestra* (also *Newman Tracts*)	1919–2013	86
Queensland					
St John's College	Anglican	Male, co-ed from 1990	*Argo*	1920–99	41
Cromwell College	Congregationalist	Male, co-ed from 1973	*The Protector*	1957–76	10
Emmanuel College	Presbyterian	Male, co-ed from 1975	*Emmanuel College Magazine*	1936–90	23
St Leo's College	Catholic	Male	*Leonian*; *Euphoria*	1947–90	23
King's College	Methodist	Male, co-ed from 2020	*The Kingsman*	1944–90	29
Women's College	Non-denominational Christian	Female	*Eeyore*	1967–83	14
				Total	**732**

*Date ranges have been simplified by giving only the first and last dates examined. In all cases there are gaps, and in some cases multiple issues in a year or combined issues covering two years. For instance, the 30 issues of the Wesley College Journal examined comprised one issue a year for 1924–25, 1934–35, 1937–52, 1955–59, 1961–65.

educational at undergraduate level, this change happening unevenly, in 1969 at Wesley, but not until 2001 and 2002 at St John's and St Andrew's respectively, and only in 2023 at St Paul's. In addition, Sancta Sophia College was established as a Catholic college for women, and remains as such for undergraduates.

At Melbourne, the four original men's colleges are Trinity (Anglican), Ormond (Presbyterian), Queen's (Methodist) and Newman (Catholic). Early in their histories both Trinity and Newman established affiliated women's halls, Janet Clarke Hall and St Mary's Hall (now St Mary's College), with each pair acting in concert for many student activities, including for the production of their respective publications. The move to co-education happened relatively evenly at Melbourne, with all the colleges, both those originally for men and those originally for women, making the transition between 1973 and 1979.

At Queensland, six of the eight colleges with religious affiliations produced publications that it has been possible to examine, namely St John's (Anglican), Cromwell (Congregationalist), Emmanuel (Presbyterian), St Leo's (Catholic), King's (Methodist) and Women's (non-denominational Christian). Publications have not been identified for two further women's colleges, Duchesne (Catholic, originally Stuartholme College) and Grace (Presbyterian and Methodist, co-educational from 2022). The first five Queensland colleges listed above were originally for male students; except for St Leo's these are now all co-educational, the others making the shift between 1973 and 2020. Women's College remains for female students only.

Nationally, colleges and halls of residence housed around 13% to 14% of full-time students from 1956 to 1971. Over this period the proportion at Melbourne was generally a few percentage points above the national average; in 1956, 10.8% at Sydney and 28.7% at Queensland were in residence. Moves to co-education from the late 1960s were responses to changing student cultures, in which unisex college environments became of decreasing appeal to prospective residents.[22]

The publications produced by the students in these colleges were typically annuals, published towards the end of the academic year – which in Australia aligns with the calendar year – as summative memoirs, though some have occasionally been biannual. The first to appear was *The Fleur-de-lys* (Trinity and Janet Clarke Hall, Melbourne) in 1907, and over the succeeding few decades publishing annuals became a standard practice of college student associations. Some publication schedules, such as that of *The Pauline* (St Paul's, Sydney), have been remarkably stable. Others are highly irregular. As shown in Figure 1, the peak period for the annuals was between the end of the Second World War and roughly the 1980s, coinciding with the postwar expansion of higher education.[23] Though some are still published today, many were discontinued in the 1980s and 1990s, a decline that perhaps reflected the growth in their place of other forms of youth media, including music video culture, zines and the various outputs of desktop publishing.

The annuals exhibit a certain generic stability, while encompassing considerable internal variation. Typically they contain reports of sporting activities – a much-emphasised element of college life – and of social activities, college subcommittees, events such as student theatre,

[22]Pascoe, "Social and Spatial Construction of Student Housing", 78, 112–14.

[23]Figure 1 shows the number of issues I have been able to examine for each year, not the total number published. Nevertheless, I have sought to be as comprehensive as possible in collecting this material, and the sample is large enough to be considered broadly representative.

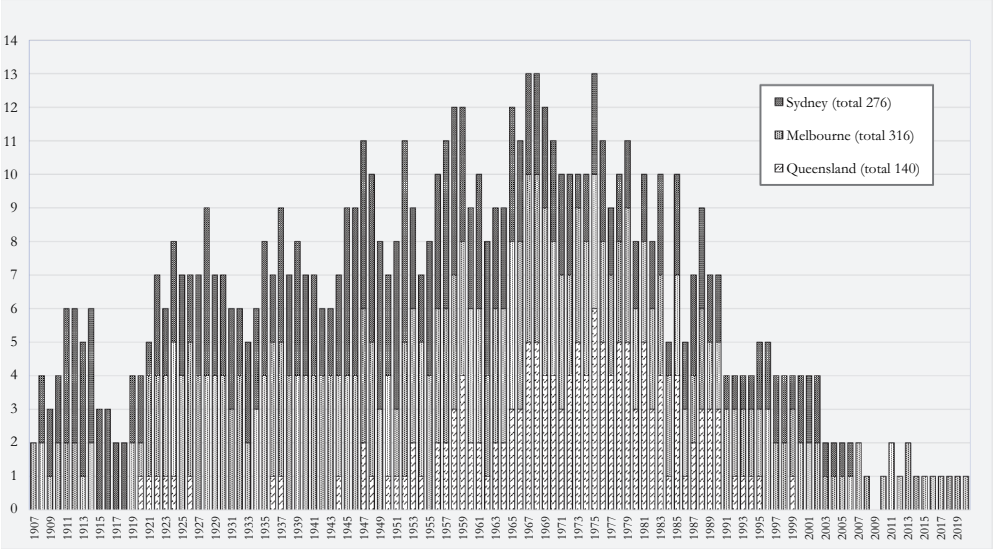

Figure 1. Number of issues examined by year.

prizes and other student achievements, and in some periods students' academic results. Some contain student essays – of greatest interest here – as well as fiction and poetry. Reports and essays by college staff and occasionally by university academics also appear. The general tone varies between the colleges and over time, with certain emphases in different periods. The publications of Newman and St Mary's Colleges, Melbourne, were notably pious in the early and mid-twentieth century. Through the 1950s and 1960s, the Methodist publications at all three universities stand out for their relative intellectual seriousness. Other publications focused mainly on sporting and social activities. In two cases at Melbourne, separate academic publications (*Ormond Papers*, 1965–69, and *Newman Tracts*, from 1996) were created to publish student and staff essays, leaving the main annuals principally as social records; these two publications, of particular interest here given their scholarly focus, have been included in the overall corpus. The colleges' integration into mainstream higher education also means that they have not been insulated from wider changes in student culture. From about 1970 many student publications became increasingly irreverent, even debauched in tone. After this content reached something of a peak in 1984 in *Argo*, of St John's, Queensland, the student editor the following year consciously sought to return to a more restrained tone, asking contributors to place less emphasis on "mindless vulgarity" and "bacchanalian forays and frolics".[24] From the 1980s there were in general fewer essays and less academic content, with many publications given over entirely to sporting and social reports. This shift coincides with the general decline of the annuals in the late twentieth century.

Within the annuals, reflections upon science, and specifically evolutionary science, are far outnumbered by items on sporting and social activities, and other such matters. Nevertheless, across the 732 issues examined, evolutionary science, science generally, and sometimes more broadly modernity – and their various relations to religious belief – appear

[24]Greg Munro, "Editorial", *Argo* 32 (1985): 3.

with sufficient frequency to support analysis. The prevalence of these topics in such contexts likely reflects the presence of science and medicine students within the colleges, for whom the institutional interface between university and college might in some respects be one between science and religion.[25] The annuals thus represent a space in which such students might perform a reconciliation between opposing intellectual and institutional imperatives. This is to put the institutional relationship in fairly stark terms, and the claim requires qualification. Of the three universities under consideration, only the University of Melbourne is constitutionally secular, with Sydney and Queensland both teaching programmes in divinity at various points.[26] These have, however, been peripheral aspects of their histories, the governance and pedagogies of the main institutions being broadly secular. Wider campus cultures have been fertile ground for the organisation of faith groups and movements, such as the influential liberal Christian group the Student Christian Movement (SCM), though again these are minor threads within generally secular histories.[27]

From the college side of the question, an important consideration is the role of key college staff trained in evolutionary science, who brought to their respective college communities personal visions of science-religion relations. One such was Raynor Carey Johnson, Master at Queen's, Melbourne, from 1934 to 1964, whose background was in the biological sciences. In his study *The Imprisoned Splendour* (1953) he outlined a model of reality based on the evidence of the natural sciences, psychical research and mystical experience.[28] Another relevant figure was Charles Birch, who from 1948 combined academic roles in the Sydney Department of Zoology with tutorial responsibilities at Wesley College. Birch's early career was shaped by working with Theodosius Dobzhansky, one of the "architects" of the modern evolutionary synthesis, on a study of natural selection in the fruit fly *Drosophila pseudoobscura*.[29] He was closely involved with the SCM and from the 1950s wrote and lectured widely on science and religion, advocating a philosophy of "panpsychism" inspired by the writings of Alfred North Whitehead, within a broadly Christian framework.[30]

Available statistics on the proportion of college students enrolled in science programmes are somewhat potted, and show considerable local variation, but on average

[25]Reflections on this structural arrangement include Rev. J. Burnheim, "The College and the University", *John's* (1960): 7–10; Don Treacher, "Theology at the University, Asset or Anomaly?", *Emmanuel College Magazine* (1967): 68–9; and Rev. J. J. Rheinberger, "Some Reflections on University Colleges", *Johnsman* (1976–77): 7–8.

[26]Turney et al., *Australia's First*, vol. 1, 519–20; Malcolm I. Thomis, *A Place of Light and Learning: The University of Queensland's First Seventy-five Years* (St Lucia: University of Queensland Press, 1985), 192, 289, 366. Treloar, "Towards a Master Narrative", 36–7, also highlights the significance of Australian scholars within university disciplines including history, philosophy and anthropology whose research focused on religious and spiritual topics.

[27]Renate Howe, *A Century of Influence: The Australian Student Christian Movement, 1896–1996* (Sydney: University of New South Wales Press, 2009); and Julia Horne and Geoffrey Sherington, *Sydney: The Making of a Public University* (Carlton: Miegunyah Press, 2012), 169–93.

[28]Raynor C. Johnson, *The Imprisoned Splendour: An Approach to Reality, Based upon the Significance of Data Drawn from the Fields of Natural Science, Psychical Research and Mystical Experience* (London: Hodder and Stoughton, 1953); Raynor C. Johnson, "Looking Back at Life", *Wyvern* (1971): 4–5; and Raynor C. Johnson, "My Current Interests", *Wyvern* (1974): 27–9.

[29]Charles Birch, "Man against Nature", *Wesley College Journal* (1955): 27–9; and Charles Birch, *Science and Soul* (Coogee: University of New South Wales Press, 2008), 15–28.

[30]Howe, *Century of Influence*, *passim*; Paul R. Ehrlich and Graham H. Pyke, "Charles Birch, 1918–2009", *Bulletin of the Ecological Society of America* 91, no. 2 (2010): 116–27. Panpsychism, sometimes called pansubjectivism or, where it has an explicitly theistic emphasis, panentheism, is the view that mind is latent in all elementary inorganic matter, rather than emerging in the course of the evolution of organic life. For overviews, see Birch, *Science and Soul*, 114–87; and Sewall Wright, "Biology and the Philosophy of Science", *Monist* 48, no. 2 (1964): 278–83.

align roughly with national figures on science enrolments.[31] Nationally, 12.3% of undergraduates in 1953 were enrolled in science degrees (excluding engineering, agriculture and veterinary science), rising to 15.5% in 1960, and generally around 16% or 17% from the 1960s to the 1980s.[32] Medical students, by contrast, have traditionally been overrepresented in the colleges. This pattern was particularly pronounced early in the century; for instance, medical students made up 43.7% of all students at Wesley, Sydney, from 1917 to 1938, and still comprised 38% in 1946.[33] In the postwar period, the overrepresentation of medical students appears to have been attenuated somewhat as universities expanded to offer a wider range of programmes of study. Statistics from Queen's, Melbourne, and St Andrew's, Sydney, both show a downward postwar trajectory in proportional medical enrolments.[34] Even still, a Melbourne graduate student who surveyed all the university's colleges and halls of residence in 1970 found that medical students were overrepresented in residence by 16%, relative to the university's enrolments in general; science students he found to be roughly proportionally represented.[35] At St John's, Sydney, medical students comprised a full third of the college in 1967.[36]

In addition to these disciplinary trends, the available statistics on patterns of religious belief in the colleges show something of their complexity. A key point is the porousness of denominational affiliations. Of the students at the Methodist Wesley College, Sydney, over its first two decades to 1938, only 35% were Methodists, these being outnumbered by Anglicans.[37] One student at St Andrew's in 1958 declared himself a theosophist.[38] In addition, over the period under consideration, international students, mainly from non-Christian Asian countries, were a minor but frequent presence. The place of non-belief in these contexts has also to be considered. The evidence is patchy, but it appears to align with the broader "religious crisis" of the 1960s, characterised by declining religious participation, a diminution of church authority, and the growth of radical theologies, commercialised forms of leisure, youth countercultures, and alternative forms of spirituality.[39] The Wesley Vice-Master in 1938 noted that the college had been welcoming of students of all beliefs, "with perhaps the recent exception of a professed atheist".[40] By contrast, a survey in 1961 of the 141 students at Queen's, Melbourne, identified four

[31] At St John's, Queensland, 31% of graduates in 1967, and 14.3% of new students in 1982, were in science. Paul Nicholls, *Venture of Faith: A Centenary History, St John's College, the University of Queensland* (North Melbourne: Australian Scholarly Publishing, 2014), 307. At Queen's, Melbourne, 13.6% of enrolments in 1958, and 14.5% in 1961, were in science. R. White and B. Brown, "College Census", *Wyvern* (1961): 22. At St Andrew's, Sydney, between 15.7% and 24.9% of enrolments were in science and engineering over 1960–73; a disaggregation from 1965 shows that often more than half of this group were in engineering. Various articles, *Magazine of St Andrew's College* (1961–73). At Wesley, Sydney, 8% of enrolments were in science in 1946. "Editorial", *Wesley College Journal* (1946): n.p. On the low end: at St John's, Sydney, only 3% of enrolments were in science in 1967. A. I. Tonking and J. M. Carter, "New Dimensions", *Johnsman* (1967): 4.

[32] L. H. Martin (chairman), *Tertiary Education in Australia*, 3 vols. (Melbourne: Commonwealth of Australia, 1964–65), vol. 1, 59; and Tertiary Education Commission/Commonwealth Tertiary Education Commission, *Selected University Statistics*, 1975–86.

[33] W. E. Fisher, "Records and Reflections", *Wesley College Journal* (1938): 7–8; and "Editorial", *Wesley College Journal* (1946).

[34] Queen's: medical students comprised 30.3% of enrolments in 1943, 17.1% in 1961; White and Brown, "College Census", 22. St Andrew's: 39.3% of enrolments were in medicine or dentistry in 1960, 18% in 1972; various articles, *Magazine of St Andrew's College* (1961–72).

[35] Alfred Milgrom, "On the Undesirability of Colleges", *Fleur-de-lys* (1970): 24.

[36] Tonking and Carter, "New Dimensions".

[37] Fisher, "Records and Reflections".

[38] J. Deakin, "Theosophy and the Theosophical Society", *Andrews* (1958): 51–2.

[39] Hilliard, "Religious Crisis".

[40] Fisher, "Records and Reflections", 7.

atheists, 18 agnostics and two humanists, with most of the rest (102) identifying as Christian. A little over half of the cohort (72 of 141) attended church weekly.[41] By 1974, a survey at Ormond, Melbourne, found that only 24.1% "practice a religion".[42] If "practice" in the Ormond survey is taken as roughly equivalent to the weekly attendance of the Queen's survey, the surveys together suggest a halving of such participation between 1961 and 1974. Denominational and institutional differences complicate the comparison, but the trend is broadly in line with wider contextual evidence. A survey of student religious beliefs and practices at the University of New England, in northern New South Wales, showed a steep decline in religious participation, and a smaller shift away from religious belief, between 1965 and 1977.[43] David Hilliard notes that in the general postwar "religious crisis", reduced religious participation was most evident among university students. Declining observance was a product not of older adults moving away from the churches, but of a loss of generational transmission, as teens and young adults, including students, built social patterns different from those of their parents.[44] These considerations warn against reductively reading student and staff positions on science and religion off the institutional context. Patterns of belief have been much too complex for that. Yet institutional settings shaped the overall field of opinion about evolutionary science, and its limits.

Science in the student college annuals

I begin with the limits. As the 1961 Queen's survey showed, atheist, agnostic and humanist students constituted a significant minority of college residents by at least the 1960s. It is, however, notable that such students did not generally declare their non-belief under their own by-lines. One may surmise, given the college setting, that the exclusion represents a limit of acceptable institutional discourse; answering a survey about belief in which results were aggregated and de-identified was another matter. One exception is a 1972 article on humanism in *The Wyvern*, of Queen's, though this was careful to frame humanism (clearly the author's own philosophy) as "non-theistic" rather than "rabidly anti-religious".[45] Other articles in the same publication rejected a personal God, and the immortality of the soul, but did not disavow theism in general.[46] One St Paul's student argued in a 1927 intercollegiate debate for "the non-existence of a personal god", but it is unclear whether this was an earnestly held position or an artefact of the debate format.[47]

The opposite limit is represented by outright rejections of evolutionary science in favour of young-earth creationist cosmologies. It is significant that across 732 issues, covering more than a century, it has been possible to find only a single item that explicitly embraces young-earth creationism. Again, the scarcity of such arguments suggests the normative effects of the institutional context, in which students were engaged with

[41]White and Brown, "College Census", 22.
[42]"The Ormond/Women's Survey", *Ormond Chronicle* (1974): 22.
[43]David Watkins, "Changes in the Religious Practices and Beliefs of Students at an Australian University, 1965–1977", *Australian Journal of Social Issues* 14, no. 3 (1979): 211–17.
[44]Hilliard, "Religious Crisis", 221, 226.
[45]David Copolov, "Humanism", *Wyvern* (1972): 24–5.
[46]John Forrest Davies, "Of Ourselves", *Wyvern* (1938): 18–9; and Clem Smith, "Existence", *Wyvern* (1963): 27–9.
[47]S. I.-H., "The Paul's-John's Debate", *Pauline* 24 (1927): 28–9.

mainstream science curricula. The article, in the *Emmanuel College Magazine* for 1974, coincided with the growth from the 1970s of the contemporary young-earth creationist movement and relied on the movement's literature.[48] It was a short summary of the palaeontological and geological arguments of Harrington Enoch's *Evolution or Creation* (1966), by a science student notable, according to his peers, for his conspicuous religiosity.[49] A further article in the 1992 *Wyvern* similarly rejected evolution and employed a literal reading of Genesis, but situated these arguments within an eccentric appeal to the esoteric fringe science theory of "ooparts" (out-of-place artefacts), rather than in a young-earth creationist framework.[50] Although creationism was not a popular topic for college authors in general, articles condemning creationist and evangelical fundamentalist movements as politically regressive and unscientific were in fact more common. One such, a substantial critical essay by a political science student, appeared in *Ormond Papers* in 1968; another by a Queensland PhD student in zoology was published in *Argo* in 1985.[51] In 2006 John Leslie, Professor of Plant Pathology at Kansas State University, addressed students at St Paul's on "Creationism v. Science: Intelligent Design and the Evolution of Creation Theory".[52]

The limits that the institutional context set to the feasibility of outright rejections of evolutionary biology did not mean that college authors were uncritical of mainstream science. Indeed, the most common note struck in discussions of science, and especially evolution, was a degree of discomfort, if not with its methods and findings then certainly with its explanatory capacities and its imputed metaphysics. Before discussing these responses, it is worth noting the significant volume of items in the annuals that indicate that evolutionary thought was part of the ordinary mental furniture of many college students. Nuanced understandings of the relations between religion and evolutionary science presupposed evolution in its simple facticity, something unavoidable in the comprehensive university setting. Evolution appears as ordinary in this manner in many ephemeral, comic and satirical items in the annuals, and in "internalist" or purely scientific articles that did not attend to the metaphysical, social or political implications of science. For instance, the 1969 issue of *Leonian*, of Leo's, Queensland, was themed "Revolution or Evolution?". Its front cover featured an image of a caged gorilla, while its lead editorial noted that "it has taken millions of years of evolution to produce the so-called 'naked ape'".[53] A cartoon in the following year's *Argo* linked evolution with the political movements of the period. In it, what appears to be some sort of small primate holds a sign saying "Stop evolving" toward a group of other animals, while in the background a protest crowd carries placards reading "Destroy capitalism", "Stop war" and "Smash US imperialism". The implication is the equal futility of both sets of

[48]On the history of creationism in Australia, see R. L. Numbers, "Creationists and Their Critics in Australia: An Autonomous Culture or 'the USA with Kangaroos'?", *Historical Records of Australian Science* 14 (2002): 1–12; and Thomas Aechtner, "Creationism with an Australian Accent: Politics, Schools, and Global Exportation", *Almagest* 12 (2021): 124–48.
[49]Gareth W. Dick, "Evolution?", *Emmanuel College Magazine* (1974): 24; and "Valedicts", *Emmanuel College Magazine* (1975): 55–6.
[50]Matthew Skinner, "Evolution?", *Wyvern* (1992): n.p.
[51]M. R. Edwards, "Fundamental Misconceptions: A Study of the Herbert W. Armstrong Evangelical Organisation", *Ormond Papers* 2, no. 1 (1968): 19–33; and Brian Paterson, "The Evolution and Ecology of Creationism", *Argo* 32 (1985): 18–9.
[52]"Academic Notes", *Pauline* 104 (2006): 36–7.
[53]*Leonian* 7 (1969): front cover, 5.

claims, given the inevitability of evolution.[54] Jokes about a particular student being insufficiently or peculiarly evolved appeared with some frequency; one such described the student in question as "the evolutionary stage between plant and animal".[55] In 1960 at Ormond, Melbourne, students staged a production of Jerome Lawrence and Robert Edwin Lee's play *Inherit the Wind* (1955), about the Scopes trial.[56] *The Wyvern* in 1965 published a short history of the modern evolutionary synthesis; similarly, *The Fleur-de-lys* in 1978 ran a highly technical essay, probably originally written for undergraduate coursework, on the genetic heredity of intelligence.[57] Darwin, Darwinism and evolutionary concepts appear in numerous other items in the annuals, as ordinary and unquestioned elements of students' intellectual lives.[58]

If evolution was generally treated as an uncontroversial fact, its relations to religion, and to wider senses of meaning and spiritual purpose, were subject to a range of more complex negotiations. In these, analyses of evolutionary science were of a piece with those of science and technology generally, and sometimes of modernity more broadly, the categories often being treated as continuous. "Materialism" appeared frequently in these articles as a danger to be opposed, though precisely what this meant varied across different contexts. Typically it was either a synonym for scientific naturalism or it described a this-worldly culture of technology and acquisitive consumerism.[59] Occasionally it referred specifically to Marxist historical materialism, or to physicalist theories of mind.[60] The latter were advanced most influentially by John Anderson, Challis Professor of Philosophy at Sydney from 1927 to 1958, and by his student David Armstrong, a subsequent holder of the same chair.[61]

That materialist science, and within this evolutionary science, represented an incomplete understanding of reality, of "man" or of the human experience was a common viewpoint of college writers. Concepts of "reality" and "truth" sat over and outside of disciplinary specialisms and the reductiveness of scientific methods. Such concepts were resonant as holistic counterpoints to disciplinary specialisation, especially in the postwar period when the growth of the sciences within universities, and the expansion of higher education in

[54]Rod Thelander, cartoon, *Argo* 17 (1970): 36.
[55]"Vale . . .", *Newman* 49 (1967): 52. Other examples include "Taboo", *Newman* (1932): 45; "St Leo's Awards 1982", *Leonian* (1982): 26; "Valetes", *Pauline* 81 (1983): 71; and "Exuent Alumni", *Pauline* 87 (1989): 75.
[56]"The Play", *Ormond Chronicle* 40 (1960): 7.
[57]Brian Cooke, "The Synthetic Theory of Evolution", *Wyvern* (1965): 22–3; and Craig Moritz, "Nature or Nurture?", *Fleur-de-lys* (1978): 12–5.
[58]E.g. W. S. Egerton, "An Amateur Anthropological Survey in Goilala, Papua", *Kingsman* (1952): 24; P. C. G., "A Meaning and a Method for History", *Pauline* 53 (1955): 62; Ian de Lacy, "Planned Breeding of *Home sapiens*", *Protector* (1960): 51; "Valete", *Newman* 46 (1964): 51; "Ave Atque Vale", *Pauline* 63 (1965): 74; S. J. S., "Endings, Continuities, Beginnings", *Wyvern* (1969): 6; Lucy Lyons, "Silent Revolution", *Fleur-de-lys* (1971): 10; "Reports: Debating", *Pauline* 79 (1981): 14; Michael Taylor, "An Occasional Address", *Pauline* 92 (1994): 36–8; Matt Roberts, "The Hand on Platform One", *Wyvern* (1995): n.p.; and Michiel Le Roux, "Life Ends at Twenty-one", *Wyvern* (2003): 60–1.
[59]E.g. respectively, "Regiomontanus", "Ancient Faith and Modern Science", *Newman* (1941): 17–20; and H. V. E., "Out of the Deep", *St Andrew's College Magazine* 15 (1917): 10–2.
[60]E. J. Stormon, "Communism and Christianity", *Newman* (1954): 24–7; Barry Taylor, "Are Minds Brains?", *Ormond Papers* 2, no. 2 (1969): 12–20; Chris Brickhill, "Scientific Faith", *Ormond Papers* 2, no. 2 (1969): 39–44; and "Exeunt Praesides", *Pauline* 68 (1970): 21. Sometimes it is unclear which meaning was intended: e.g. "Editorial", *St Andrew's College Magazine*, 18 (1920): 3–4; "Foreword", *Newman* (1927): 3–4; and "Editorial", *Sancta Sophia* (1948): 3. Occasionally multiple categories (in this case scientific naturalism and Marxism) were explicitly collapsed as supposedly amounting to the same thing: Alan R. Kidd, "The Great Amphibian", *Kingsman* 1, no. 4 (1951): 36–8.
[61]Horne and Sherington, *Sydney*, 179–85.

general, generated new anxieties about the fragmentation of knowledge.[62] According to Johnson, reflecting on his time as Master of Queen's, "the materialistic outlook of science was due to an abstraction of scientific data from a far greater reality".[63] "Science cannot explain ultimate principles", insisted a Queensland arts and divinity student in 1957.[64] In a 1956 essay on the writings of Cardinal Newman, Newman College's namesake, the Rev. Guildford Young argued that "positive science is by definition naturalistic, in the sense that it does not go beyond nature", but that there was "more truth than the truth of science . . . which positive science neglects by virtue of its very method". Beyond science's self-imposed limitations were domains of values and of philosophical and religious truth.[65] An article in *The Wyvern* for 1947 grounded a critique of the incompleteness of science in institutional context, noting the predominance in the university of scientific studies that described life "in terms of quantity". These methods, the writer claimed, the "Christian does not decry . . . but he does declare the incompleteness and the futility of such representation, unless it is transcended by a representation of reality in terms of quality". Truth in a fuller, qualitative sense was "religious in quality, and to seek truth, divorced from religious life, as a secular University claims to do, is a contradiction in terms". The colleges, as centres of Christian influence, were said to be institutional spaces in which truth might be pursued more fully.[66] In 1960, the Melbourne student Hugh Lacey, subsequently a philosopher at Swathmore College in Pennsylvania, argued in *Newman* that "the formal fields of science and theology do not even interact". Science was a tentative, hypothesis-forming, probabilistic method "concerned only with the material world", whereas Christian theology advanced no hypotheses but was concerned with final truths through revelation.[67] This was a position close to what the American historian of science Stephen Jay Gould would later label *nonoverlapping magisteria*, or what Ian Barbour, in his influential "ways of relating science and religion", would identify as their "independence".[68] Independent or non-overlapping positions were implicit in many other articles advancing claims for the incompleteness of scientific meaning.[69]

Related to efforts to relativise science were persistent critiques of technology and technological society. The character of these critiques varied over time. Around the time of the Second World War the dangers of technological militarism loomed

[62]Joel Barnes, "The 'Two Cultures' in Australia", *History of Education* (2022), doi:10.1080/0046760X.2022.2097742.
[63]Johnson, "Looking Back at Life", 4.
[64]Ron Potter, "Science versus Philosophy", *Kingsman* 1, no. 10 (1957): 30.
[65]Rev. Guildford Young, "Christian Faith and Freedom of the Intellect in Newman", *Newman* (1956): 14–6.
[66]H. L. Perkins, "Aedificamus in Aeternum", *Wyvern* (1947): 9–10.
[67]Hugh M. Lacey, "Christianity and Science", *Newman* (1960): 19–22.
[68]Stephen Jay Gould, "Nonoverlapping Magisteria", *Natural History* 106 (March 1997): 16–22, 60–2; and Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues* (New York: HarperCollins, 1997), 84–9.
[69]The many further reflections on the incomplete explanatory power of science include F. E. M., "Concerning a Limitation and a Danger", *Argo* (1922): 12–4; W. S., "The Reality of Progress", *Argo* (1923): 8–9; Eric Horning, "Evolution and a God!" *Newman* (1924): 41–3; Ikon, "A Modern Iconoclast", *Argo* 8 (1937): 22; F. A. R. M., "Alfred Noyes", *Newman* (1941): 8–11; K. C. W.-S., "Beyond Reason", *Fleur-de-lys* 4, no. 42 (1942): 14–5; C. G. "Argumento Collegiae", *Kingsman* (1944): 20; Bryan O'Sullivan, "Library and Archives Report, June, 1945", *John's* (1945): 45–7; I. McA. Fardon, "The University as I See It", *Wesley College Journal* (1948): 30–2; "One of Them", "Concerning Theology and Theological Students", *Emmanuel College Magazine* (1956): 21; "The War Memorial Chapel", *Pauline* 56 (1958): 14; R. H. Talbott, "What I Believe about God", *Protector* (1958): 64; R. Girle, "Modern Philosophers", *Emmanuel College Magazine* (1959): 12; Robin Haack, "The Modern Predicament", *Wyvern* (1962): 35–6; P. J. Stewart, "Classical Civilization and the Modern World", *Newman* (1965): 6–9; Christopher Cordner, "A Note on the Uni", *Fleur-de-lys* (1971): 11; Tony Endrey, "Theology and Science: Complementary or Antithetical?", *Wyvern* (1972): 19; Max Charlesworth, "The Future of Religion", *Newman* (1973): 9–11; Kidd, "Great Amphibian"; Taylor, "Are Minds Brains?"; and Brickhill, "Scientific Faith".

large.[70] Later criticisms, only some of which were framed in explicitly theological terms, turned to the dehumanising effects of modern technocracy.[71] A common refrain was the need for spiritual values to keep pace with technological achievement, or for religion, sometimes in combination with the humanities disciplines, to serve as an ethicising and humanising leaven to technology. Such sentiments were often expressed as a lament that the violent catastrophes of the twentieth century had been precipitated by such an imbalance.[72] Similarly, *Newman* in 1986 ran a student poem accusing scientists of "play[ing] God".[73] Elsewhere college writers addressed the social responsibilities of scientists, typically criticising the belief that "pure" science could be separated from the moral effects of its applications.[74]

Against these major trends can be noted some minor countercurrents. Several college authors wrote subtly and sympathetically about scientific methods in general.[75] In 1984 *The Pauline* ran a long student essay that traced the development of naturalism in science, but which showed a commitment to the detail of the history of science more than to any normative metaphysics.[76] In 1948 and 1950, J. H. Noon, physicist and Vice-Master of King's, Queensland, wrote several enthusiastic and optimistic articles in *The Kingsman*, one on "The Importance of Physics", and a second arguing that science and religion were both positive social forces based on "a desire for knowledge", between which there was no conflict.[77] In a different register but to similar ends, an essay by a former Newman physics student in the 2002–3 *Newman Tracts* surveyed nineteenth-century theological debates over Darwinian evolution and the claims of twentieth-century creationism to argue that there was no "fundamental conflict" between science and religion. The essay was framed in terms familiar to science-and-religion studies today, drawing especially on Gould's *nonoverlapping magisteria*.[78]

A notable implication of the preponderance of efforts to position science as inadequate and materialist in its explanatory capacities, and as in need of ethicising by spiritual

[70]J. W. Wastell, "Religion and Art", *Wyvern* (1940): 18–19; "Editorial", *Wesley College Journal* 17 (1940): 8–9; A. L., "Forces in History", *Wesley College Journal* (1941): 20–3; W. B. C., "First and Last Men", *Fleur-de-lys* 4, no. 42 (1942): 19–22; R. J., "Have We a Solution?", *Journal of Wesley College* (1942): 18–9; G. J. C., "New Gods for Old", *Journal of Wesley College* (1944): 21–2; Raynor C. Johnson, "Atomic Energy from Nuclear Fission", *Wyvern* 23 (1945): 7–8; and Fardon, "University as I See It", 31.

[71][Wheeler?], "Think", *Leonian* (1969): 13–4; G. G. Daily, "Man and Machine", *Newman* (1974): 9–12; and Stuart Ritchie, "Can Scientists Be Trusted?", *Fleur-de-lys* (1976): 4–6.

[72]"Editorial", *Kingsman* 1, no. 10 (1957): 3; David Bollen, "In Search of El Dorado", *Wesley College Journal* 34 (1957): 29–30; Rev. James Duhig and Charles F. De Monchaux in "The Centenary Meeting of Council", *John's* (1958): 33–4, 39–40; Raynor C. Johnson, "The Balanced Life", *Wyvern* (1962): 5–6; Neville Crago, "Towards an Idea of Social Evolution", *Wyvern* (1962): 51–2; and Rev. Robert Runcie, "Godliness and Good Learning", *Argo* (1985): 16. The Prime Minister, Sir Robert Menzies, expressed similar sentiments when visiting St John's, Sydney, in 1962: "The Menzies Wing", *John's* (1962): 14–6. These were standard tropes for him: Bob Bessant, "Robert Gordon Menzies and Education in Australia", *Melbourne Studies in Education* 19, no. 1 (1977): 75–101. On the disciplinary, science-and-humanities dimensions of such claims, see Barnes, "'Two Cultures' in Australia".

[73]Brendan Condon, "Marvellous Science", *Newman* (1986): 19.

[74]G. M. Willis, "Science and Society", *Wyvern* 14 (1936): 27–8; Gerard Early, "Of Forces beyond Control", *Johnsman* (1968): 22–4; R. Brinkworth, "The Social Responsibility of Scientists", *Emmanuel College Magazine* (1972): 9, 17; Glenn Ross, "A Modern Dilemma", *Argo* (1976): 32; Max Charlesworth, "The Morality of Science", *Newman* (1979): 91–3; and W. B. C., "First and Last Men".

[75]Andrew Bell, "Uncertainty", *Wyvern* (1966): 41–2; and Jim Desmarchelier, "The Modern Witchdoctor", *Newman* (1967): 29–30.

[76]Peter Bennie, "The Age of Reason", *Pauline* 82 (1984): 35–40.

[77]J. H. Noon, "The Importance of Physics", *Kingsman* 1, no. 1 (1948): 17–21; and J. H. Noon, "Science and Religion", *Kingsman* 1, no. 3 (1950): 37–9.

[78]Lachlan Hastings, "Evolution: Science v. Religion?", *Newman Tracts* (2002–3): 60–8.

and humane values, was the limited expression of more theistic or idealist conceptions of evolution or of science generally. One significant college figure who advocated such a position was Birch, though his evolutionary panpsychism is not evident in his several short articles in the *Wesley College Journal*.[79] Similar ideas appear in pieces by other authors, though only occasionally. In the *Emmanuel College Magazine* for 1936 the theology student Richard Maxwell Crawford outlined a narrative of the history of evolutionary thought in which nineteenth-century science, positioned as mechanistic, had been superseded by a modern view in which the "orderliness of nature is but a vast uniformity in the working of mind or spirit". Though he did not use the term, this account appeared to be underpinned by a version of panpsychism.[80] Comparable historical narratives, of a modern scientific holism overcoming nineteenth-century materialism, were advanced at Melbourne in the 1930s by the Lamarckian Professor of Anatomy Frederic Wood Jones, whose influence can be seen in several items in *The Fleur-de-lys*.[81]

Other alternative visions of science were more eclectic. *The Wyvern* for 1938 ran a short piece in which the history of biological life was understood in terms of the idea of an "experimenting God".[82] The *Wesley College Journal* for 1958 contained an article that used Sir Walter Moberly's *The Crisis in the University* (1949) as a starting point to consider how all academic disciplines, including the sciences, required epistemic presuppositions, which might include theistic ones.[83] In early 1964 Wesley hosted the British mathematician, theoretical physicist and Methodist lay preacher Charles Coulson; its journal printed an article of his arguing for the sacramental value of "things" – non-human nature – consideration of which provided "a point of contact between the Christian and the scientist".[84] The second issue of the *Ormond Papers* included a sensitive essay by the Vice-Master John Alexander on Pierre Teilhard de Chardin – unusually, in comparison with D. H. Lawrence, both as seekers, in very different ways, after synthetic wholeness.[85] In a packed lecture at St John's, Sydney, in 1981, the Hungarian-American priest and philosopher of science Stanley Jaki argued that "the more science has progressed, the more it points us back to theology, back to God". The claim built upon the development of the theory of relativity, growing evidence that the universe had a finite beginning, and the narrowness of the conditions of possibility for the development of complex life.[86] These examples are somewhat too miscellaneous to be considered a minority thread or tradition in the life of the colleges. The predominance within them of outside academic guests is also

[79]L. C. Birch, "Oxford of the Middle West", *Wesley College Journal* (1948): 43–5; Charles Birch, "The Strange Meeting of Biology and Physics", *Wesley College Journal* (1949): 13–5; and Birch, "Man against Nature".
[80]R. M. Crawford, "Theology and Evolution", *Emmanuel College Magazine* (1936): 15–16. Similarly, see W. S., "Reality of Progress".
[81]Frederic Wood Jones, *Life and Living* (London: Kegan Paul, Trench, Trubner, 1939), 1–26, 159–214; Frederic Wood Jones, *Design and Purpose* (London: Kegan Paul, Trench, Trubner, 1942); "College Notes", *Fleur-de-lys* 3, no. 30 (1930): 3; and J. C. M. Crotty, "Quo Vadis? Or, the Triumph of Reason", *Fleur-de-lys* 3, no. 32 (1932): 23–6.
[82]Norman Pask, "The Experimenting God", *Wyvern* (1938): 20.
[83]Alan Black, "We Who Prattle", *Wesley College Journal* 35 (1958): 28–30.
[84]C. A. Coulson, "A Secular World? – God and 'Things'", *Wesley College Journal* (1963): 16–8. This issue appears to have been published belatedly in 1964.
[85]J. C. Alexander, "Teilhard de Chardin and D. H. Lawrence: A Study in Agreements", *Ormond Papers* 1, no. 2 (1966): 5–13, subsequently reprinted in expanded form as John C. Alexander, "D. H. Lawrence and Teilhard de Chardin: A Study in Agreements", *D. H. Lawrence Review* 2, no. 2 (1969): 138–56.
[86]David Arthur and Chris Grainger, "The Jaki Lecture", *Johnsman* 12 (1980–81): 15–6.

notable. But each in its different way represented means of thinking about science and religion not determined by the forms of terse negotiation and reconciliation that was a far more common feature of the annuals.

Conclusion

Understandings of evolutionary science in the denominational colleges of Sydney, Melbourne and Queensland Universities were shaped both by the institutional environments of the colleges themselves, and by their interface with the mainstream, mostly secular, comprehensive public universities with which they are associated. This institutional relationship set limits to student (and college staff) discourses about science, on the one side of the rejection of all theism, and on the other of the embrace of young-earth creationist cosmologies in place of evolutionary science. Between these limits, the annuals commonly represented a space in which students might perform reconciliations between the competing imperatives of the dual institutional settings of which they were a part. For the most part these performances were indeed reconciliations, between naturalistic science on the one hand and religious belief on the other. Only occasionally, and then sometimes by outside guests, did the annuals offer more holistic syntheses that rethought scientific naturalism, in line with Ian Barbour's category of the "integration" of science and religion.[87] The relative rarity of such integrative efforts makes them appear idiosyncratic compared with the major patterns in which materialistic science was relativised as metaphysically incomplete, and technology and technological society were criticised as dehumanising and morally dangerous. These findings hold good over a number of decades and across locations and denominations, including across both protestant and Catholic traditions. The lack of denominational differentiation is somewhat surprising, but suggests the importance of shared institutional contexts. These major and minor discursive patterns are apparent only in aggregate. In aggregate the limits of the field of opinion are likewise visible in their occasional breach. The field of college student and staff opinion about science, and its limits, reflects the unique patterns of development of religious institutions within Australian higher education.

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[87]Barbour, *Religion and Science*, 98–105.

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