

Cosmology and Empire

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Abstract: What is the link between the discovery of the relativistic expanding universe and British imperialism? A public panel debate in the early days of relativistic cosmology shows how fundamental scientific research, whether there are obvious political stakeholders (like biosecurity and climate) or not, runs real-time risks of being repurposed for political ends.

In September 1931, a debate took place at the Centenary Meeting of the *British Association for the Advancement of Science* (BAAS) in London. To a public audience of thousands, including international popular press, researchers at the vanguard of the newly emerging discipline of relativistic cosmology were asked to give their take on ‘The Expanding Universe’. The debate was held in Central Hall Westminster, the Astronomer Royal Frank Dyson presided, and notable panelists included Willem de Sitter, Arthur Eddington, James Jeans, and Georges Lemaître.

This debate should be seen as a turning point in the history of relativistic thinking about the large-scale cosmos [1]. The experts above all expressed support for a new minimal consensus view: a relativistic model of a dynamical (specifically, expanding) universe, which is empirically supported by a distance-velocity relation for observable nebulae. They disagreed, meanwhile, about future directions for research based on that consensus—normal science, in other words. From an intellectual history perspective, it is this display of new normal science at the meeting, which constitutes the formation of the empirical discipline that we today recognize as ‘relativistic cosmology’.

But the debate was also something else: ongoing scientific research served up as entertainment for the general public. And importantly, as an event intended toward the public, the debate spotlighted additional ‘expert’ voices beyond the scope of relativistic astrophysics. Several of the debate panelists were humanistic scholars, whose expertise led them to focus on drawing connections between the newly developing science of the expanding universe and broader views on life, humanity, and society. Our central historical point is that the inclusion of these voices in the debate was not so very innocuous—far from what one reporter subsequently described as “a philosophical diversion to distract [the audience’s] attention and ease [their] mind” [2]. And so, we also find a general lesson in retrospect: scientists should care about how new directions in fundamental research get packaged in real time to a wider engaged audience, with special attention paid to what it is that might explain that demonstrated wider engagement.

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Let's turn back to the debate itself. Originally focused on unifying and championing the achievements of the scientific community within the UK, by 1931 the BAAS had come to see their work as furthering British interests across a unified Commonwealth system [3], [4]. In the years preceding the Centenary, a tradition had begun which rotated the location of the annual meetings of the BAAS around the Empire. The BAAS's dissemination of scientific knowledge to and for the public thereby came to be packaged as part of a broader triumphant narrative about ongoing British imperial projects. (Communications from the BAAS to their patron, the King, reflect this view [5, p. xvi].)

The most recent prior meeting of the BAAS outside of the United Kingdom was in South Africa in 1929. In that meeting, Jan Christiaan Smuts—years earlier, and years later, the Prime Minister of South Africa—played a prominent role. The BAAS subsequently honored Smuts with an appointment as President for the 1931 Centenary meeting. Smuts thereby became both one of the few to date non-scientist and the first 'foreign' Presidential appointment in their organization's history, demonstrating the BAAS's new aim to "widen the aspirations of the British Association to the entire empire" [4, p. 158]. Indeed, this imperial focus was no secret; Smuts was himself aware of the political motivation behind his appointment. In his recorded inaugural remarks as President, he states: "Nothing can equal this occasion where, in your desire to mark the Imperial character of this Centenary Meeting, you have chosen me as a Dominion representative to preside over it [...] The British Empire has given yet another instance of that breadth of conception and human sympathy which has made it the greatest and most beneficent political society that has ever existed." [5, p. xvii-xviii]

As suggested by the quotation, Smuts was an ideal choice of Centenary president, given the political aims of the BAAS by 1931. A recognized science enthusiast, in his professional life, Smuts was also a vocal champion of British imperialist efforts—particularly those that cemented white settler colonialism as the ideological backbone of the era. Political scientist Jacob Kripp summarizes that according to Smuts, "White internationalist unification was the cosmological destiny of humanity, a higher form of spiritual life that made global order more pacific" [6, p. 940]. In other words, Smuts's political ideology was one in which global peace is achieved and sustained through infrastructure supplied by efforts expended toward white international unification. This vision, ultimately linking global racial hierarchy to the cosmological destiny of humanity, thus served to justify the more immediate project of British imperialism: as instrumental toward that destiny [6]. In South Africa, this vision translated itself into a gradual segregationist politics. (Unfortunately, this was the 'moderate' position in a precursor to the post-World War II apartheid system. For instance, Smuts' Unionist party was defeated in 1924 by a Nationalist-Labour pact that argued for stricter segregationist policy [4, p. 67].)

In light of the imperial politics of the BAAS, prominent debates organized by the BAAS for the public, such as the widely advertised Centenary debate on the Expanding Universe, served to convert cutting-edge scientific developments into triumphant narratives of (British-centered)

social progress. But if this were all—the BAAS’s commitments to empire on one hand, an influential panel debate about cosmology on the other—the history would be largely unremarkable. Even the introduction of one additional surprising fact—that Smuts was himself one of the humanist panelists in that debate—might be accounted for, merely on the basis of his surrounding involvement with the BAAS, coupled with his well-known enthusiasm for the sciences. Meanwhile, all developments in the intellectual history of science occur in a political context—a context that has, in many cases, been one of empire.

But Smuts’s role in the panel debate was considerably more subtle. In particular, Smuts spoke within the debate not as Centenary President of the BAAS or as an influential Commonwealth statesman, but in his capacity as a philosopher of science. Prior to the Centenary meeting, Smuts had already published a sprawling work on the relationship between contemporary science and social philosophy [7], and he had demonstrated his ability to put ongoing scientific research to work in his broader philosophical worldview at the 1929 BAAS, as the main speaker in a joint discussion on ‘The Nature of Life’ arranged by the zoology, botany, and physiology sections. That event had been conceived by physiologist John Scott Haldane specifically as a debate that would spotlight Smuts’s philosophy of holism applied to recent challenges in the life sciences, against mechanistic approaches to these challenges [4, p. 119-124].

And just six days prior to the debate on the Expanding Universe, Smuts’s Presidential Address articulated a wide-sweeping perspective on the scientific world-picture of the day, inclusive of developments in physics as well as the life sciences. It is that context—his reputation as a humanistic scholar, adept at synthesizing new scientific knowledge across disciplines and distilling it into socially relevant philosophy—in which, to the public audience in the thousands, Smuts’s voice was added to those of the experts in the newly forming empirical science of relativistic cosmology.

That last point, in our opinion, is the problem. Smuts’s function in the debate was to provide philosophical gravitas to the statements of recognized authorities on the new science like Jeans, de Sitter, and Eddington. And what gravitas does he provide? Elaborating on some of the themes of his Presidential Address, Smuts’s remarks focus on fitting the astrophysical developments discussed by the scientific experts at the debate into a physical foundation for teleological narratives about the evolution of life and mind: “Truth is a whole, and the truth of physics will be found to link on and to be but part of that larger truth which is the nature and the character of the universe [...] we find that the evolution [of the universe] also comprises the emergence of life and mind, of the human soul and human personality, and a whole new world of values of all sorts.” [5, p. 604] The “new world of values” he references are ultimately “social and spiritual values, which form our own human phase of this cosmic process” [5, p. 604].

But in light of his prevailing cosmological views, the social and spiritual values he has in mind are presumably those that culminate, in his day, with the racialized colonial advance of the

British Empire. (Recall from the quoted comment above that he saw the British Empire as “the greatest and most beneficent political society that has ever existed”.) Smuts’s remarks in the panel debate offer a vision similar to that which he lays out in [7]—a vision which he had already developed before the relevant achievements in relativistic cosmology. Now at the BAAS, he offers relativistic cosmology as a promising new physical foundation for the directedness of both biological evolution and social progress. In short: he is in this panel debate engaged in a kind of apologetic, implicitly defending his preferred ideological project by fitting it into a grand new physical science of the (directed) evolution of the large-scale cosmos.

So it goes: some people have disappointing views. What is striking, however, is the prominent seat those views were given at this watershed moment in the intellectual history of relativistic cosmology. Smuts’s apologetic is presented to the general public simultaneously with a celebratory presentation of the new discovery of the expanding universe. From the perspective of hindsight, then, it strikes us as a further disappointment that none of the scientists involved touch on his ideas in their officially prepared remarks. (Another humanist on the panel, the Lord Bishop of Birmingham, did focus on similar themes, ultimately emphasizing a project in planetary diplomacy in the face of a newly perceived plausibility of the evolution of extraterrestrial intelligent life.)

The scientists’ silence may be a result of their assumption of a fundamental duality between “the world of life” and “physical world” --- something remarked by Herbert Dingle about some of the expert participants involved, in the introduction to the report of the debate printed in *Nature* [8]. From that dualist perspective, Smuts’s claims about a creative advance simply do not fall within the scope of the new relativistic models of an expanding universe. But regardless of the merits of that perspective, because it was not explicitly articulated, the effect of the scientists’ silence was to permit Smuts’s philosophical repurposing of their new scientific research to go unchallenged. Because the scientists in the debate did not take on (favorably or unfavorably) Smuts’s contributions, the connections drawn between the new science and British imperial ambitions were left intact.

This is troubling, especially because it would seem from the tenor of the public’s interest in the new scientific developments that the common view is closer to Smuts’s than the version of dualism implied by Dingle of the physicists. For instance, the reporter Collinson Owen summarizes after the event, “Discussion on the Evolution of the Universe [...] Here is a subject which affects us all, perhaps even more gravely than the question of the gold standard...” [2].

It is difficult to understand the implicit urgency perceived by the public regarding the physicists’ novel discovery (not to mention the relevance of such fundamental physics topics to the Lord Bishop’s musings about planetary diplomacy), *except* in the context of a larger philosophical project like that offered by Smuts, which anchors social affairs in a physical foundation of the expanding universe. Indeed, such public sentiment regarding the physicists’

work is readily explainable: usage of the term ‘cosmology’ in the time period primarily concerned a grander conception of the evolution of the universe than just the physical large-scale cosmos.

We take this historical episode as a cautionary tale. New directions in fundamental scientific research can be appropriated for political ends in the public eye, *even where the ends seem quite far removed from what scientists perceive to be their novel subject matter*. And it seems to us that scientists, in choosing silence in situations where their fundamental research is so appropriated, miss an opportunity to wrestle questions of profound social import back into their own domain of expertise—a role only experts on the subject matter can suitably fulfill.

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Competing interest statement

The authors declare no competing interests.

Bibliography

- [1] De Baerdemaeker, S. and M. D. Schneider (2022). Better appreciating the scale of it: Lemaître and de Sitter at the BAAS centenary. *HOPOS: The Journal of the International Society for the History of Philosophy of Science* 12 (1), 170–188.
- [2] Owen, C. (September 30, 1931). Is the universe merely an ash-heap? *The Daily Mail*. Retrieved from Archives de l’Université catholique de Louvain | Archives Georges Lemaître, BE A4006 FG LEM-1541.
- [3] Dubow, S. (2017). A commonwealth of science: The British Association in South Africa, 1905 and 1929. In *Science and society in southern Africa*, pp. 66–99. Manchester University Press.
- [4] Anker, P. (2021). Imperial ecology. In *Imperial Ecology*. Harvard University Press.
- [5] British Association for the Advancement of Science (1932). *Report of the British Association for the Advancement of Science, 100th Meeting (1931)*. London.
- [6] Kripp, J. (2022). The creative advance must be defended: Miscegenation, metaphysics, and race war in Jan Smuts’s vision of the League of Nations. *American Political Science Review* 116 (3), 940–953.
- [7] Smuts, J. C. (1926). *Holism and evolution*. Macmillan
- [8] Dingle, H. (1931). The evolution of the universe. *Nature* 128, 699–701.

