

## Exceptionalism and the broadcasting of science

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### Abstract

During the course of several decades, several scientists and groups of scientists lobbied the British Broadcasting Corporation (BBC) about science broadcasting. A consistent theme of the interventions was that science broadcasting should be given exceptional treatment both in its content, which was to have a strongly didactic element, and in its managerial arrangements within the BBC. This privileging of science would have amounted to 'scientific exceptionalism'. The article looks at the nature of this exceptionalism and broadcasters' responses to it.

### Keywords

History of public communication of science; Public understanding of science and technology; Science and media

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### Introduction

In a special issue devoted to the history of science communication it is perhaps appropriate to reflect on some high-level questions. For example, what distinguishes science communication from other sorts of communication? Its subject matter is, naturally, distinctive; but is anything else distinctive? Are the practices and principles of science communication different from those of sport, politics, history, literature, music or geography? To put the question another way, if a general statement can be made about science communication (such as a tendency to assume a knowledge-deficit in the audience), does it apply equally well to communication about other subjects? Continuing this line of speculation, is the history of science communication a special type of communication history, or simply communication history centred on science?

I do not suggest universal answers to these questions, but I suggest that the field of British science broadcasting has been distinctively characterised by a conviction among some high-ranking scientists that their subject was owed special treatment by programme planners. This branch of science-communication history could therefore be construed, at least partly, as a history of scientists' claims for special treatment or, to put it another way, as a history of claims for 'scientific exceptionalism'.

### Exceptionalism

The term 'exceptionalism' has become part of the vocabulary of historians, political thinkers, and social scientists. It relates to claims that a particular country, institution, or system of governance or administration is qualitatively different from others that it could reasonably be regarded as comparable with. A widely

discussed instance is American exceptionalism, which Koh [2003, p. 1481, note 4], says 'has historically referred to the perception that the United States differs qualitatively from other developed nations, because of its unique origins, national credo, historical evolution, and distinctive political and religious institutions.'

Exceptionalism is not restricted to history or political thought. For instance Donna Haraway [2008] has critically explored the notion of 'human exceptionalism'. However, exceptionalism of any kind would be of little interest if it merely posited qualitative difference. Interest arises from exceptionalism's assumed ethical dimension. Krislov [2001, p. 9], observes that American exceptionalism is associated with 'the classic American feeling of generating a newer, purer, and more natural society,' and Kammen [1993, p. 11], citing the work of sociologist Daniel Bell [1975], says 'Bell acknowledged [that American exceptionalism] was initially based upon a belief in moral superiority.'

Bimber and Guston [1995, p. 556–560], identify various types of scientific exceptionalism that have been used to support 'claims about the scientific enterprise' in policy and administration. One type is epistemological exceptionalism. This is based on the truth-seeking character of science. According to Bimber and Guston, epistemological exceptionalism leads to an expectation among scientists that their advice will be heeded in political communities where truth is valued [Bimber and Guston, 1995, p. 556]. If 'political community' is expanded to include the governance of the BBC—a large publicly funded broadcaster—Bimber and Gaston's observation is borne out in the following narrative.

In relation to the history of science, Alder [2013, p. 89], associates scientific exceptionalism with a prevailing belief that science is:

a state-of-of-the-art summation of all and only those prior discoveries that possess current value.

As a historian of science, Alder sees this as misrepresenting the evolution of scientific knowledge. Rather, science history should be understood, like any other form of history, as:

a recapitulation of the past on its own terms and in a manner oblivious to the tug of present-day concerns. [Alder, 2013, p. 89],

Alder therefore *rejects* scientific exceptionalism in order to establish parity between science historians and other historians:

we should . . . treat the history of any given scientific subject in a manner no different than 'general' historians treat the history of any nonscientific subject. [Alder, 2013, p. 89],

I wish to extract two particular points from this excursion into exceptionalism. The first is that exceptionalism is often associated with claims to status, authority, merit, entitlement and privilege. The second is that denial of exceptionalism can be a way of rejecting such claims, or a way of declaring conformity with other practices or domains of interest.

Some of the episodes in this paper have been reported in earlier publications [see Jones, 2012; Jones, 2014; Jones, 2016; Boon, 2008], but without explicit connection to the concepts of 'exceptionalism' and 'scientific exceptionalism'.

## J. G. Crowther

James Gerald Crowther (1899–1983) was one of the Britain's earliest professional science journalists. In his 1928 book *Science for You* he wrote, 'One of the necessities of the hour is that the public should know more about science' [Crowther, 1928, p. vii]. To justify this claim, Crowther alludes to science's role in meeting society's material needs:

The public should be made to realize that their own existence is largely the result of the application of science. [Crowther, 1928, p. 236]

For Crowther, the association of science with material provision elevated it above other human pursuits. Those other pursuits were made possible by science's elimination of material want, and therefore were contingent on science. According to Crowther, the public were largely ignorant of science's role as the primary enabler of modern life, and especially ignorant if:

they happen to utilize the privilege of their science-begotten existence for the study of the ancient classics. [Crowther, 1928, p. 236]

There is a pre-echo here of the notorious 'two-cultures' controversy initiated three decades later by the British novelist and science advocate C. P. Snow.<sup>1</sup>

Crowther took his exceptionalist convictions to the BBC, where he proposed special treatment for science—and attempted, unsuccessfully, to create a job for himself. In December 1926 he wrote a six-page 'Memorandum on the organisation of Science Talks' to the BBC in which he set out how science broadcasting should be organised. He observed that science programming was unsystematic, as it did not follow a syllabus designed to teach the subject progressively.<sup>2</sup> According to Crowther, talks should be planned coherently, and graded according to the degree of knowledge assumed of the audience.<sup>3</sup>

Crowther's proposals, if implemented, would have privileged science within the BBC, where departments were not organised by subject as they would be in a university [Briggs, 1965]. Hilda Matheson, the BBC's Head of Talks at the time of Crowther's proposals, was unconvinced by Crowther's special pleading for science. She noted on his memorandum:

Almost everyone is interested in science when it's shoved under their noses. But I think not quite so much as this man suggests.<sup>4</sup>

<sup>1</sup>See Ortolano [2009] for a thorough account of this controversy.

<sup>2</sup>BBC Written Archives Centre (hereafter 'WAC'), Caversham, Reading, UK, J. G. Crowther file, memorandum from Crowther to Matheson 6 December 1926.

<sup>3</sup>WAC J. G. Crowther file, memorandum from Crowther to Matheson 6 December 1926.

<sup>4</sup>Ibid., handwritten note by Matheson.

Another instance of Crowther's scientific exceptionalism came in 1931 when BBC producer Mary Adams (1898–1984) asked him to broadcast a topical item based on a reported deformity in many of London's sparrows. Adams suggested that this story would catch listeners' attention, and could act as bait for leading them to more serious scientific topics. She commented:<sup>5</sup>

I am afraid bitter experience has shown me that it is only by this round about method that the great B.P. [British Public] will listen to a wireless talk on science.<sup>6</sup>

Adams, who earlier in her career had been a practising scientist (unlike Crowther), here advocated assimilating science to other popular forms of broadcasting. Crowther disagreed, saying that science on the radio ought not to be presented as entertainment. He nevertheless gave the broadcast.<sup>7</sup>

## Second World War

With the outbreak of World War II, science's importance to the war effort provided a fresh set of reasons for regarding science as exceptional. This is exemplified by events following a lecture tour of the USA by the British scientist and sinologist Joseph Needham in the summer and autumn of 1940.<sup>8</sup> During the tour, Needham stressed to his American audiences that the war in Europe was, among other things, a threat to science: 'If the Nazis should win in Europe, science will be set back for several generations, perhaps longer,' he told them.<sup>9</sup> Needham found a growing pro-British and anti-Nazi sentiment in the USA, but he observed that the supply of pro-British propaganda in the USA was 'woefully deficient.'<sup>10</sup> This contrasted markedly with the more effective provision of Nazi propaganda in the USA. There were, for instance, Nazi bookshops in New York city.<sup>11</sup>

Needham's report went to the Ministry of Information, which asked the British Council to undertake the promotion of British science abroad.<sup>12</sup> A British Council Science Committee was established to undertake this, with Sir William Bragg as the Chairman and J. G. Crowther as Secretary.<sup>13</sup> One result was *Monthly Science News*, a pamphlet produced by Crowther and distributed in several languages [Crowther, 1970, p. 228].

Setting up this initiative was fairly straightforward, but it was a different story when Bragg and Crowther tried to extend their initiative to broadcasting. Initially Bragg's and Crowther's overtures to the BBC went well. A series *Science Lifts the*

<sup>5</sup>WAC, Crowther Contributor File, Letter 20 Aug 1931 from Mary Adams to Crowther.

<sup>6</sup>Crowther Archive, SxMs 29/9/10/1, Adams to Crowther, 7 September 1931.

<sup>7</sup>WAC, Crowther Contributor File, Letter 3 Sept 1931 from Crowther to Mary Adams.

<sup>8</sup>University of East Anglia, Zuckerman Archive SZ/TQ/2/7. Letter from Needham to Zuckerman, 16 January 1941.

<sup>9</sup>University of East Anglia, Zuckerman Archive SZ/TQ/2/7. Report on Four Months' Tour in the United States, June–November 1940, by Joseph Needham, p. 4.

<sup>10</sup>Ibid.

<sup>11</sup>Ibid., pp. 6 and 7.

<sup>12</sup>University of East Anglia, Zuckerman Archive SZ/TQ/2/7. Letter from Lord Melchett to Solly Zuckerman, 26 March 1941.

<sup>13</sup>Crowther Archive, SxMs 29/5/2/5, letter from B. Ifor Evans [?] at British Council to Crowther, 2 April 1941.

*Veil*, largely devised by Bragg and Crowther, was broadcast weekly on the Empire Service.<sup>14</sup> Subsequently Bragg requested that the series be repeated on one of the BBC's domestic services for UK listeners as a corrective to the public's misapprehension of science and its place in society.<sup>15</sup> Bragg's request for a re-broadcast was passed down to George Barnes, the Director Of Talks, who was unenthusiastic. He judged *Science Lifts the Veil* to have been:

... very uneven indeed. Some [talks] have been brilliant —namely Sir William Bragg's own introduction— but others have been exactly the kind of talk which we have had in the past and which has not secured a wide audience.<sup>16</sup>

The episode reveals the contrasting sensibilities of the scientist and the professional broadcaster. For the scientist, the public's misapprehension of science put an obligation on the BBC to promote scientific knowledge. For the broadcaster, the public's view of science, whether accurate or inaccurate, was not the issue. Engagement with the listener was the primary requirement, and science was not exempt from this requirement.

## Reconstruction

December 1942 saw the publication of the report *Social Insurance and Allied Services*, produced by a committee chaired by Sir William Beveridge. It proposed the setting up of national schemes of medical provision, social security, unemployment benefit, and other forms of social welfare. Following the report's publication, post-war reconstruction became a matter of widespread and enduring general interest [Briggs, 1995, pp. 548, 552].

In keeping with the mood of the times, the British Association for the Advancement of Science held a conference in March 1943 entitled 'Science and the Citizen: the Public Understanding of Science', where issues relating to the post-war world were discussed. Eight months after the conference, a delegation from the Association called on the BBC's Director General to pursue ideas that had arisen at the conference. The delegation had two proposals for the BBC:

1. that a standing committee of representatives of science should be created to put forward ideas and plans for science in broadcast programmes,
2. that a science programme officer should be appointed to co-operate with the committee and with those responsible for the arrangement and organisation of programmes.

Members of the delegation spoke in support of these proposals, and BBC managers responded non-committally. Privately, though, BBC managers strongly opposed the proposals. William Haley, a senior BBC manager at the time of the visit, pencilled against the second proposal 'most dangerous'.<sup>17</sup> The very proposal that would have given science exceptional status was the most alarming. A few months later

<sup>14</sup>WAC R51/523/5, undated memo/press release.

<sup>15</sup>WAC R51/523/3, letter 2 March 1942.

<sup>16</sup>WAC R51/523/3, memo 4 March 1942.

<sup>17</sup>WAC R51/529, memo 24 November 1943.

another delegation, this time from the Association of Scientific Workers, arrived at the BBC to make essentially the same proposals—and met a similar response.<sup>18</sup>

It would be easy to see the BBC's non-engagement with these proposals as indicating an institutional bias against science. Within the organisation, though, some staff members were distinctly pro-science. In March 1942, about 20 months before the visit of the first delegation described above, an internal BBC review of science broadcasting had elicited views from BBC production staff. One staff member observed that, because of the war, many people ('especially young women') found themselves unexpectedly working in scientific jobs and as a result 'A special public for popular science has arisen.'<sup>19</sup> The same producer stressed the need for scientific broadcasts to inculcate a 'scientific attitude' in listeners. These views would have harmonised with many of the views of the two scientific delegations above.

### Pilkington committee

The issue of scientific exceptionalism re-surfaced more intemperately about 15–20 years after the war-time interventions, at around the time of the Pilkington Committee. The Pilkington Committee was set up in July 1960 to review the BBC's Charter. The Charter sets out the BBC's constitutional position and has a fixed term of generally 10–15 years. Towards the end of each Charter period a review committee is set up to recommend to Government the terms on which the Charter should be renewed. The Pilkington Committee was the first such review committee to receive submissions on science broadcasting. Four scientific submissions were received, from the Royal Society (Britain's élite scientific body), the British Association for the Advancement of Science, the Department of Scientific and Industrial Research (DSIR), and crystallographer Kathleen Lonsdale (who was also Vice President of the Royal Society and General Secretary of the British Association for the Advancement of Science).<sup>20</sup> One proposal appeared in all four submissions, with variant wordings: the appointment of a scientist to the BBC to operate at policy and planning level and be responsible for all science broadcasts. Justifications for these proposals included science's transformation of society in the last 100 years (of which many people were said to be ignorant); the fear some people had of science, and their view of scientists as irresponsible, uncultured materialists; and the need for high quality scientists and technologists to ensure the country's future prosperity.<sup>21</sup>

The report produced by the Pilkington Committee deflected the issues raised by the scientific submissions back to the BBC. The task of reviewing the submissions and, ideally, of resolving an issue that was by now regarded as chronic within the BBC, fell to two senior managers. At a joint meeting of BBC managers and representatives of the Royal Society and the British Association for the

<sup>18</sup>WAC R51/529, Record of Interview, 12 February 1944.

<sup>19</sup>WAC R51/523/3, Richard Palmer, *Broadcast Science*, 2 March 1942.

<sup>20</sup>WAC R6/239/1 Memorandum from The Royal Society 'Science and Broadcasting', 13 December 1960. WAC R6/239, British Association for the Advancement of Science, *Broadcasting and Science*, 13 December 1960/June 1961. WAC R6/239/1 Memorandum from the Information Division of the Department of Scientific and Industrial Research to the Committee on Broadcasting, August 1961 (DSIR, 1961). WAC R6/239 Kathleen Lonsdale, Memorandum: Evidence for the Pilkington Committee, 30 June 1961.

<sup>21</sup>WAC R6/239, British Association for the Advancement of Science, *Broadcasting and Science*, 13 December 1960/June 1961.

Advancement of Science, the scientists stressed that they were not critical of the content of science programmes on the BBC.<sup>22</sup> The problem was an insufficiency of science broadcasts, given the importance of science in contemporary life, and a lack of overall policy in science programming.<sup>23</sup> In defence, the BBC representatives cited the BBC's own professional expertise as the basis for deciding the appropriate amount of science to broadcast. The managers warned of:

... the risk of boring and irritating the public by giving them too much of any one subject merely because it was thought right to do so.<sup>24</sup>

The reference here to 'boring' and 'irritating' could be regarded as tendentious, but the most salient point is in the final few words, which reject the idea that importance of subject automatically translates into amount of air time. This countered the recurring argument that the importance of science entailed special exposure for the subject. Indeed the managers commented in their report that the scientists were behaving just like other specialists:

... these [scientists] are specialists arguing for their own subject, and most specialists believe that their own subject is under represented.<sup>25</sup>

From the BBC's point of view, to claim to be exceptional was to demonstrate parity with everyone else, thereby negating the claim to be exceptional.

Regarding the scientists' criticism that there was no coordination of science broadcasts (that is, the broadcasts were not organised into a curriculum), the BBC managers pointed out that science was no exception to other subjects within the BBC: 'Nor is there [coordination] for literature, history, art, drama, sport or any other subject.'<sup>26</sup> The scientists, if they had had a right of reply, might have responded that the equal treatment of science with other subjects was the problem in their view.

A compromise was adopted in which a scientific advisory committee was set up. This solution did not encroach on the BBC's professional competence and, as it had precedents, was not exceptional, although it was unusual. To many participants' surprise this compromise turned out to satisfy each side, although it gave the scientists little of what they had lobbied for.<sup>27</sup>

## Horizon

The most celebrated and longest-running television science series in the UK is *Horizon*, first broadcast in 1964. Timothy Boon's [2015] work on the series has shown that although it became a flagship for the new television service BBC2 (launched in 1964), its initiation was fraught with problems, and the programme's success was by no means assured. In relation to science programming of the time,

<sup>22</sup>WAC R6/239/1, notes of a meeting held at Burlington House 12 December 1962.

<sup>23</sup>Ibid.

<sup>24</sup>Ibid.

<sup>25</sup>WAC R1/99/1 Board of Governors Papers 1963, 1-20. R. d'A. Marriott and S. Hood, 'Science Broadcasting', 14 Jan 1963.

<sup>26</sup>Ibid.

<sup>27</sup>BBC WAC R6/239/3, memo from assistant director of sound broadcasting to director of sound broadcasting, 11 October 1965.

*Horizon* was exceptional—but not in the ways the scientists earlier in this article had sought. Boon quotes memoranda written by members of the programme team during the planning stages. In *Horizon*, science was not to be presented ‘as a set of impersonal facts and discoveries’ [Boon, 2015, p. 103]. Also embargoed was ‘the straightforward teaching and demonstrating approach as an end in itself’ [Boon, 2015, p. 98]. As a press release by Gordon Rattray Taylor, the Editor of *Horizon* from June 1964, put it ‘... *Horizon* is not an educational programme, though I hope it will be educative!’ [Boon, 2015, p. 114]. This was a different approach to science from the one urged by the scientists who lobbied the BBC.

Initially the model for *Horizon* lay in the celebrated arts-discussion television programme *Monitor*. Although *Monitor* was abandoned as a model for *Horizon*, its influence persisted in the programme team’s aspiration for a programme oriented towards ideas, culture and the social processes of science. This aspiration persisted through a long series of debates within the team covering such topics as whether there should be one topic per instalment or several, or whether there should be an anchor person or voice-over (or both), or whether programmes should be studio-based or filmed on location. These could seem superficial points of presentation style, but as Boon shows, they are of as much concern to the broadcasting professional as content. Aubrey Singer, a leading light in the inception of *Horizon*, commented in a public lecture: ‘The televising of science is a process of television’ [Singer, 1966, p. 3]. I take this to mean that televising science is not to be understood as a straightforward transmission scientific content. Rather, the choices made in production (such as those above), and the televisual techniques used, are the principal determinants of what we comprehend by ‘televised science’. Possibly not all producers would accept Singer’s radical foregrounding of the medium itself, but his merging of medium and content encompasses a quite different conception of science communication from one that scientists had traditionally held. Singer, who was not a scientist, also said in the same public lecture:

The aim of scientific programming ... is not necessarily the propagation of science, rather its aim is common with all broadcasting, an enrichment of the audience experience [Singer, 1966, p. 9].

Two points in particular are worth noting here. First, scientific programming was not for the propagation of science. Second, the aim of scientific broadcasting was the same as for all other kinds of broadcasting. These two points precisely counter the exceptionalist arguments of the scientists discussed earlier, for whom the propagation of scientific knowledge was imperative, and hence justified exceptional treatment of science in broadcasting.

## Conclusions

Like any history, this brief account of scientific exceptionalism in British broadcasting has been selective, and as with any history it pays to glance at what has been omitted. My account says nothing about the years and decades of perfectly cordial relations between scientists and the BBC. At the individual level, scientists and BBC staff got on well, or no worse than any other almost-random pairing of individuals. The episodes of scientific exceptionalism reported here were relatively infrequent, but when they occurred they were taken seriously and typically went to Director-General level. The scientists involved nearly always represented institutional science, notably The Royal Society and the British



Association for the Advancement of Science. Crowther was an exception, as he was a relatively minor figure when he first approached the BBC, and did not at that time enjoy access to upper reaches of BBC management on that occasion.

Also missing from my account are the many producers employed by the BBC over this period. There were so many that one would not expect them all to share a consistent view on science broadcasting. Some science producers, as I have shown, thought that inculcating scientific knowledge in the public was part of their professional responsibility. However, this did not necessarily translate into advocacy of exceptionalism of the kind pursued by the scientists in this story. I have not seen any document suggesting that producers would have been comfortable with outside agencies assuming the degree of influence over BBC science production that was sought.

Where the public understanding of science is concerned, scholars have observed that the focus has generally been on the public, who have traditionally been regarded as problematic. In recent decades, however, scholarly scrutiny has turned towards scientists themselves, and their possible motivations for promoting science. As commentators have remarked, 'public understanding of science' tends to be conflated by scientists with 'public appreciation of science', and an assumption that the public would be better disposed to science and scientists if it knew more about the subject (see for example Wynne [1995]; Gregory and Miller [1998, pp. 1–18]; Gregory [2016]). On such an interpretation, scientists' promotion of science could be seen to have an extra-scientific motivation. It is striking that the episodes recounted here had overt, extra-scientific motives. For example, Crowther was exercised by a need to impress on the public science's role as the primary enabler in modern life. Whether science has this role is not itself a matter of science, and could reasonably be challenged without resorting to anti-science. The war-time interventions described here were, in one case, explicitly propagandistic and, in the other, influenced by social policy considerations for the post-war world. The Pilkington-related interventions were motivated by a range of factors, including a need to impress on the public the importance of science, a need to improve the status and perception of scientists, and the economic necessity of science. In all these we see not so much the promotion of scientific knowledge or understanding, but the promotion of the institution of science and its influence.

In relation to the public understanding of science, the other protagonist is the public itself. Yet in the accounts presented here the public was not the object of the scientists' persuasive efforts. Instead it was BBC managers —the gatekeepers of access to the public in the restricted broadcasting market of mid-twentieth century Britain. These managers, as has been shown, were wary of ulterior motives behind the promotion of science. (And for at least one manager, ulterior motives were revealed in 'the political bias shown in many popularisations of scientific subjects.')

<sup>28</sup>

BBC autonomy seems to me crucial factor in the BBC's resistance to exceptionalist claims for science. The BBC has always made much of its independence and its guardianship of public-service broadcasting (though I leave aside whether it has ever been truly independent, and the ill-defined nature of 'public service').

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<sup>28</sup>WAC R51/523/3 Director of Talks [George Barnes] to Controller (Home) [Richard Maconachie], memo 14 January 1942.

Autonomy and impartiality loom large in the professional ethics of BBC employees, among whose responsibilities is withstanding interference from external agencies, such as professional or commercial organisations. (Again, I leave aside whether reality has always matched the intention.) For the BBC to have promoted science as the scientists wanted risked compromising its independence.

Since the 1980s, following several high-profile incidents which called into question scientific expertise (such as the Chernobyl disaster, and in the UK the outbreak of bovine spongiform encephalopathy or 'mad cow' disease), traditional forms of science dissemination have, in policy-making circles, yielded ground to public engagement [Gregory and Lock, 2008]. Fundamental to public engagement is two-way communication between scientists and the lay public, who are acknowledged to have experience, expertise and understanding that scientists might lack. Gregory [2016] observes that this shift, while appearing to open up science communication, can be seen as a managerial phase in the history of science communication, and plays to the increasing policy-orientation of research-funding decisions. In this context, traditional one-way communication from scientists to the public can seem outmoded, particularly in view of alternatives afforded by the Internet. Nevertheless, publicly funded public-service broadcasting still exists, though increasingly threatened by market-based ideologies in governance and by new forms of electronic dissemination [Arriaza Ibarra, Nowak and Kuhn, 2015, pp. 3–4]. An appearance on the BBC continues to carry a prestige not endowed by other forms of dissemination. Consequently the BBC is still a favoured route for reaching, and possibly influencing, a substantial section of the public. Such prestige depends on the BBC maintaining its autonomy and selectivity; or, to put it another way, on rejecting all claims to exceptionalism except, perhaps, its own.

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DOI: [10.4135/9781412990127.n24](https://doi.org/10.4135/9781412990127.n24).

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## How to cite

Jones, A. (2017). 'Exceptionalism and the broadcasting of science'. *JCOM* 16 (03), A05.



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ISSN 1824-2049. Published by SISSA Medialab. [jcom.sissa.it](http://jcom.sissa.it)