

ADVANCED REVIEW

Reid Bryson: The crisis climatologist

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Abstract

Reid Allen Bryson (1920–2008) was a forceful orator who consistently fought against institutional pressures to get his messages out to the public. In the 1960s, Bryson was a leader in the wider academic turn toward politically charged interdisciplinarianism. To the dismay of many of his colleagues, he publicly made climatological prognoses in the 1970s, becoming a significant figure in the media landscape. He was not swayed by the arguments for global warming, even as the framing became the recognized face of climate change in the late 1980s. By examining the controversies that Bryson instigated and the currents that he swam against, we can see the wider community crystallizing and promoting positions that may have previously gone unstated. In addition, Bryson's personal contribution to the rise of climate discourse has been under-explored in the historical literature. Bryson was instrumental in bringing climate onto the political radar during the World Food Crisis of 1973, shocking both the US and Canadian political establishments into paying more attention to the issue. Bryson's narrative linking climate change to both food supply and a series of climate anomalies in the 1970s remained predominant in the first World Climate Conference of 1979. Bryson also helped break a seal on climatologists speaking directly to the media, leading to unprecedented climate discourse in the 1970s and giving climate change a springboard to become one of the defining issues of the 21st century.

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climate change, climate politics, interdisciplinarianism, Reid Bryson, world food crisis

1 | INTRODUCTION: CLIMATE THE SCIENCE, CLIMATE THE ISSUE

In 1964, Charles Keeling ran out of funding for measuring atmospheric carbon dioxide, leading to a gap in an otherwise continuous record since the late 1950s (Keeling, 1998). By the late 1970s, however, climate change had become an issue that was seen as worthy of substantial public support, culminating in the first World Climate

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Conference in 1979. The reasons for this change in the status of climate science are multifaceted and complex. In the late 1960s, charged debates regarding supersonic travel helped establish climate change as an issue that held political currency (Howe, 2014). In a wider context, the rise of environmentalism as an acceptable force around the beginning of the 1970s led to a shift in attitudes among some scientists, allowing climate change to take its place among a host of other environmental problems during conferences themed around environmental concerns (Weart, 2008, pp. 66–67). In addition, practitioners of neomalthusianism, represented by books such as 1968's *Population Bomb* and 1972's *Limits to Growth*, were able to use climate variation to accentuate their arguments that food supply was no longer able to keep up with population (Ehrlich, 1968, pp. 59–61, 212). As a final example here, interest in energy alternatives increased with hydrocarbon price in the OPEC oil crisis of the mid-1970s, and promoters of nuclear power found that climate change could add another arrow to their quiver (Weart, 2008, pp. 102–103).

With this milieu in mind, there was an interesting turn within climate change discourse around the middle of the 1970s that has been previously mostly overlooked. Joshua Howe has described early involvement of scientists in environmental politics circa 1970 as a relatively conservative “science-first” environmental advocacy (Howe, 2014, p. 45). This approach was reflected by the early conferences such as *Study of Critical Environmental Problems* and *Study of Man's Impact on Climate*, which although ground-breaking in highlighting climate change as an issue, were careful in their recommendations not to stray too far into sensitive policy considerations (SCEP, 1970; SMIC, 1971). A lack of strong policy engagement may have been reflected by a lack of recognition outside of meteorological circles—in 1973, senior politicians investigating food price rises demonstrated a lack of knowledge regarding climate during congressional hearings, and aid workers on the ground in the Sahel region of Africa thought that a long-term drought they were experiencing was a temporary climatic aberration and that each year would be the last (Sheets & Morris, 1974, p. 29; U.S. Congress, 1974, pp. 112, 119). In late 1973, it appears that the rules of engagement changed for a significant minority within the climatological community, as rising food prices around the world precipitated what became known as the World Food Crisis. In conferences, books and interviews, we see a new policy-oriented “food-first” environmental advocacy emerging within the Anglophone climatological community, closely interlinked with neomalthusian arguments being put forth more widely within the environmentalist movement (Bryson & Murray, 1977; Hanley, 1976; Roberts, 1975; Rockefeller Foundation, 1974b; Schneider & Mesriow, 1976; Winstanley, 1973). Although the possibility of climatic changes had been namedropped as an ancillary argument to support neomalthusian positions before (e.g., Ehrlich, 1968), this group within climatology reversed this relationship. Population pressures often became ancillary to the climatic threat—a threat that some of these climatologists claimed had the potential to precipitate the fall of civilizations. As a result, these academics were willing to publicly recommend specific policies such as increasing food reserves to provide a buffer against climate-induced famine.

As an important member of this group, Reid Bryson's contributions to the framing of climate change as an existential threat were consequential and deserve more attention. Bryson became a leader within the academia-wide movement toward politically charged interdisciplinarianism in the late 1960s, reflected by overtures to policy made in his scientific publications, as well as his pioneering contributions to urban meteorology and historical climatology.¹ The World Food Crisis of 1973 opened the political sphere to Bryson, and he took full advantage, gaining the ear of influential politicians such as former Vice President Hubert Humphrey through his controversial linkage of rising food prices and climatic changes. Bryson became one of the public faces of climate in the 1970s within the Anglophone world, writing the bestselling *Climates of Hunger*, and making an appearance in most popular articles on the topic during the period. Even as much of the wider climatological community shook their heads at Bryson's climate prognoses and claims of being a representative of climatological discourse, they followed his rhetorical emphasis on food supply in order to consolidate funding and institutional support for what was until then a minor area of study. This framing, as well as other contributors, helped lay the foundation for the first World Climate Conference in 1979, the impact assessments of which were mainly focused (both directly and indirectly) around agriculture. Nevertheless, Bryson's brazenness in the political sphere was highly embarrassing to some senior figures within US meteorology, and he was largely outcast from mainstream circles. This position became entrenched in the 1990s, when Bryson became a notable critic of global warming narratives. However, his later obscurity should not distract from his earlier influence, and Bryson should be acknowledged as an important, albeit controversial, character in the history of climate change.

2 | THE MAKING OF A CYNIC

Via two accounts given in the last decade of his life, Bryson has left us his own analysis for why he undertook his most controversial climatological forecasts in the 1970s, which was tied to his wartime service (Bryson, 2000; B. Henderson, 2009). Bryson graduated with a degree in geology from the University of Denison, Ohio in 1941, before becoming a graduate student in the same subject at the University of Wisconsin. Upon US entry to the war, Bryson joined the Army Air Corps meteorological programme at the University of Chicago, becoming a course instructor upon commissioning. In 1943, he was sent to study at the Institute of Tropical Meteorology at the University of Puerto Rico, where he also became a teacher after a couple of months (Figure 1). In 1944, Bryson was assigned to forecast for the 20th Air Force in the Pacific theater, where it appears that he thrived in an ad-hoc world of limited observations and back-of-the-napkin calculations. However, Bryson's later accounts made absolutely clear his disdain for senior officers, especially ones that contradicted his recommendations, as is shown by a passage regarding a Typhoon trajectory forecast that was about to be transmitted to an admiral: "At that point the senior aerologist (as the navy called meteorologists) walked into the room, drunk as a lord. [...] Captain Lockhart blearily looked at the message. When his eyes focused he roared out, 'Nonsense! Typhoons don't recurve at that longitude at this season, they move straight west! Change that—forecast'." (Bryson, 2000, p. 2395). The parable predictably ends with Bryson's forecast being proved tragically correct, making a "strong and lasting impression" on him (ibid). Along similar lines, Bryson recalled an incident in late 1944 where Admiral William "Bull" Halsey's Third Fleet lost 790 sailors to Typhoon Cobra (Bryson, 2000, p. 2396; B. Henderson, 2009). In summary, Bryson saw authority figures within the US Navy as inept and disregarding of his forecasts, resulting in tragic consequences.

The extent to which we can believe every detail of Bryson's accounts of his wartime experience should remain a matter of debate. Bryson was prone to hyperbole and was recalling events that had happened more than 60 years before—one of his wartime accounts has been called out for saying that Carl-Gustaf Rossby "probably never made an operational forecast" (Bryson, 2000, p. 2394; Persson & Phillips, 2001, p. 2023). Nevertheless, these accounts are useful for demonstrating Bryson's searing disdain of authority, a personality trait that reflects some of his later actions. They also demonstrate the self-image that Bryson tried to project—of an anti-establishment champion who tried in vain to shield the common man against the snobbery and arrogance of the elite. In his accounts, Bryson recalled how he had met fellow veterans after the war—an ashen faced captain who told him that he had been made a scapegoat of a similar weather-related incident; a radio officer of Halsey's fleet who insisted that he had passed Bryson's warning up the chain



FIGURE 1 Reid Bryson before his direct wartime experiences (NOAAHRD, 2014)

of command; a meteorologist who claimed that Halsey had declared “I don’t believe any aerologist. Maintain present course.” These characters were as much the victims in Bryson’s narrative as the men who died, and Bryson claimed that the lesson was clear. In June 1974, when “full awareness of the climatic events of 1972 had still not quite gotten into the official skull” (Bryson, 2000, p. 2393), Bryson was challenged by a friend, Stephen Schneider, who claimed that it was dangerous for Bryson to make climatic prognoses in public with such uncertainties at their base. As Schneider wrote around a year later, Bryson recalled one of his wartime forecasting experiences, afterward saying: “From that day on I swore to myself if ever I could issue a forecast to save someone’s life, I’d stick my neck out as far as possible to get the message across.” (Schneider & Mesriow, 1976, p. 140). Bryson was willing to admit that his climatic prognoses were very much personal and political, and embraced the idea that he was messianically sacrificing his own scientific reputation to save lives.

3 | INSTITUTION BUILDER AT WISCONSIN

After his wartime service, Bryson returned to the University of Chicago where he worked on his PhD in meteorology supervised by Carl-Gustaf Rossby. According to Bryson, the student-advisor relationship was dysfunctional, even hostile. Bryson felt his work deserved more attention than Rossby was willing to give it, with Bryson later claiming that Rossby had never read his dissertation (Lewis, 1992, pp. 1431–1432; Hart & Cossuth, 2013, pp. 1842–1843). Bryson eventually received his PhD in 1948, but by then he had already moved on from Chicago. In the Spring of 1946, Bryson visited the University of Wisconsin, and in the summer he accepted a position as assistant professor in meteorology and geology within the geography department. Bryson’s interdisciplinary nature must have already been on display, as he was almost immediately appointed by Dean Baldwin of the College of Agriculture to an interdepartmental committee that aimed to co-ordinate meteorological and agricultural data in collaboration with the US Weather Bureau. In 1947, the interdepartmental committee was expanded into an all-university steering committee (G. Kutzbach, 1979, pp. 1167–1168). Around this time, for unknown reasons, Bryson was told he would lose his position within the geography department. In a later interview, Bryson suggested that perhaps figures within the geography department had felt threatened by him shifting the focus of his meteorology courses toward discussions on climate—a shift that would compete with other research interests (Bryson, 1986, p. 13). Based on the source material available, it is easier to imagine that older professors felt more threatened by Bryson’s direct contact with the senior university hierarchy through the all-university steering committee. If this was the concern, giving Bryson the sack was not an effective measure. In 1947, after he was told he had no future at the university, Bryson used his position within the all-university steering committee to advocate for the formation of a separate department of meteorology at Wisconsin, principally in order to recruit Bryson’s personal friend Verner E. Suomi (the later “founder of satellite meteorology”) with whom Bryson had floated the idea on a fishing trip in 1946. Bryson was granted his request in early 1948, leading Suomi to join the new department in the spring. Bryson and Suomi, who jointly bought a piece of land the same year and became neighbors for life, alternated the departmental chairmanship over the next decade (Broad, 1989; Bryson, 1986; G. Kutzbach, 1979).²

In its early years, the University of Wisconsin’s meteorology department was quite literally a two-man outfit—in 1952 Bryson and Suomi received tenure by simply voting for each other. The department was housed in two rooms with a part-time student helper as secretary. During the first semester in 1948, there was one graduate student and 15 nonmajors. A major was established in 1950, with an average enrolment of 15 across 12 courses. Early research largely consisted of investigating weather and climate as it pertained to Wisconsin agriculture, including micrometeorological research into the heat and radiation budget of farmsteads. Another early project, also interdisciplinary nature, investigated the currents of Lake Mendota, forming the basis of much follow-up work (Bryson & Bunge, 1956; Bryson & Suomi, 1952; Clarke & Bryson, 1959; Dutton & Bryson, 1962; Haines & Bryson, 1961; Lathbury et al., 1960; Shulman & Bryson, 1961). It appears that Bryson drove ideas and funding, whereas Suomi worked on improving instrumentation, developing new radiation meters and sonic anemometers. Although close, the relationship between Bryson and Suomi fluctuated, with Bryson later suggesting that Suomi patented several ideas that they had developed together. The International Geophysical Year of 1957–58 led to a rapid expansion of the department, with the graduate enrolment rising from seven in 1957 to forty-four in 1961, faculty membership growing from three in 1957 to eight in 1963, and research funding rocketing from around \$50,000 per annum in the mid-1950s to \$700,000 per annum in 1963. Bryson himself received a new funding stream in 1957 from the United States Office of Naval Research for subarctic climatology, from which Bryson helped develop new techniques for the aerial sensing of land and water surfaces (Bryson & Baerreis, 1967). However, around this time, the professional relationship between Bryson and Suomi soured further as

their research methods and hiring priorities diverged—Bryson wanted to investigate the atmosphere via the historical record, Suomi via improved instrumentation. In 1963, Bryson received the department's first National Science Foundation grant for "interdisciplinary research in climatology" that allowed him to establish the Centre for Climatic Research, saying later "We decided to work in mutually exclusive areas so we wouldn't tread on the other guy's territory." (Broad, 1989; Bryson, 1986; G. Kutzbach, 1979).

Bryson's new Centre for Climatic Research included carbon-14, pollen, and tree-ring laboratories—essential for investigating past climatic changes. Many of Bryson's projects in the 1950s and 60s involved identifying and explaining historical weather patterns, and Bryson very much enjoyed linking climatic changes to archeological evidence during undergraduate lectures much to the delight of his students (J. Kutzbach, 2006; Bryson & Lowry, 1955; Horn & Bryson, 1960; Bryson & Dutton, 1961; Sabbagh & Bryson, 1962). As the 1960s dawned, Bryson began making tentative steps toward archaeology, a subject he held a lifelong passion for, collaborating with anthropologist David Baerreis to publish in local archeological journals theorizing links between cultural and climatic changes (Baerreis & Bryson, 1965, 1966). This avenue of study clearly resonated with Bryson on a deep level: "I was working with Dave all the time, every day practically, on questions of archaeology and history and climate and environment." (Bryson, 1986, p. 34) Perhaps Bryson's most consequential scientific output came in 1967, when Bryson and Barreis, partially informed by archeological sources, theorized a complex but reversible feedback loop between human-caused dust release and desert expansion in the Thar Desert of India (Bryson & Baerreis, 1967). This article represents a shift in Bryson's writing style, with Bryson making several de-facto policy recommendations to the Indian government advocating for a desert reclamation project (Bryson & Baerreis, 1967, p. 142):

Partial relief to the food and land problem provides time during which India can achieve further industrialization, population stabilization, and eventual resolution of her economic problems. The availability of reclaimable lands in this area is also of psychological importance to the nation in providing a real means by which the aspirations of the dispossessed farmer, for partition created many landless refugees, or the farmer whose inherited lands have become so fractionated as to be uneconomic, can be resolved.

Bryson's shift toward politically charged interdisciplinarianism was not unique within the university or academia in general, and Bryson formed part of a wider institutional turn toward what historian Michael Egan has termed "crisis disciplines," that are characterized as adisciplinary, reactionary, mission-oriented, and acting before knowing before all the facts (Egan, 2017). Starting in 1962, Bryson was involved in several interdisciplinary committees that eventually culminated in the formation of the University of Wisconsin-Madison Institute for Environmental Studies in 1970, to which he was named inaugural director. In this position, Bryson reported to the Chancellor of the campus directly, and oversaw five research centers from across the academic spectrum—the Marine Studies Center, Center for Biotic Systems, Center for Geographic Analysis, Center for Human Systems, and Bryson's own Center for Climatic Research (Bryson, 1978). In publications during the 1970s, Bryson became ever more crisis discipline-oriented, and increasingly used an emotive, politically engaged writing style. Bryson's "crisis climatology" saw no divide between the atmosphere and society, reflected by some pioneering work done on urban meteorology and engagement with emerging narratives regarding global anthropogenic climate change (Bryson, 1970, 1973a, 1974; Bryson et al., 1974; Hebbert & Janković, 2013; Wendland & Bryson, 1970). Bryson's move toward crisis disciplines and the resulting bold, untested ideas met resistance from some of the wider academic community. His 1967 relationship between human dust release and desert expansion was singled out for criticism in a USAID report that he contributed to, and one of his articles given on anthropogenic climate change was, according to Bryson at least, not received positively at a meeting of the American Association for the Advancement of Science in December 1972 (USAID Office of Science and Technology, 1972, p. 5; Hoopman, 2007).

4 | CLIMATE AND CRISIS IN 1973

The 1970s mark the decade of crisis. Due to a complex of circumstances, food prices (and the prices of several other commodities) across the world rose dramatically during 1973, constituting what became known as the World Food Crisis (Garcia, 1981; Gerlach, 2015). The World Food Crisis became emblemized by a number of climate events throughout the world, most notably a devastating famine in the Sahel region of West Africa. In response, and acting very much within the vein of crisis disciplines, Bryson circumnavigated the slow peer-review process, producing an

Institute of Environmental Studies report in August 1973 that published a hypothesis explaining the Sahel disaster and extrapolating it into a worldwide semi-apocalypse. This was his most emotive piece to date, liberally quoting newspaper reports, and UN officials to underline the human impacts of the famine. For example, he quoted Mourtada Diallo, a regional director of the United Nations Economic Commission for Africa, as saying “If the problem is not solved in two months, nearly six million people may die.” (Bryson, 1973a, p. 1). Bryson’s own choice of language was clearly meant to resonate on an emotional level: “What perversity of nature had withheld the life-giving rains in the most hunger-ridden part of the world?” (Bryson, 1973a, p. 3). Bryson hypothesized that atmospheric dust and carbon dioxide could act in tandem to increase altitudinal and equator-pole temperature gradients. Utilizing the hydrodynamical experiments of Dave Fultz, Bryson claimed that these temperature gradients would displace the Sahel monsoon south, causing the drought and devastating famine. Separate to this hypothesis, Bryson published a graph of reconstructed temperature over the past millennium, arguing that temperatures would soon decrease to fit the historical trend. The report was a pessimistic tour de force, ending by narrating the fall of historic empires and cities, asking “Do such events lie ahead?” (Bryson, 1973a, p. 11; Naylor, 2021).

With his background of linking agricultural output to atmospheric conditions, Bryson spent the World Food Crisis interacting with political centers of power, advocating for increased grain reserves to offset climate-driven changes in production. This influence was partly due to a couple of smooth political operators with whom Bryson had formed relationships. During a change in executive leadership at the University of Wisconsin-Madison in 1970, Bryson invited Charles Engman, then the vice president of the campus, to join the Institute for Environmental Studies as associate director. Engman accepted the offer and brought with him an extensive network of contacts in Washington. As Bryson later boasted: “He knew everybody in Washington and people in Washington knew about IES. I think IES is more famous in Washington than it is in Madison.” (Bryson, 1986, p. 46). Whether or not this claim was true, it was difficult for relevant congressional committees to avoid Bryson’s testimony or those of his acolytes, even if Bryson’s reception apparently cooled off in the latter half of the decade (U.S. Congress, 1974, 1976, 1977). In a Canadian context, Bryson had got to know Kenneth Hare in the 1960s, an impressive speaker who served as a scientific advisor to the Canadian Department of the Environment from 1972 to 1974 (Kenworthy, 2003). Hare later described Bryson’s impact on the Canadian establishment (Hare, 1979, p. 1173):

I remember inviting Reid to come up to Ottawa about that time to try to shake the Canadian bureaucracy out of its complacency about the food situation and about wheat reserves. And he came. He told them what he has told us many times before and afterward about the impact that climate was making upon the crops; about the assumptions being made about the sale of those crops, and the storage of those crops, by the agricultural economists. He said that the large-scale fluctuations of the 1970s might be the precursors of something even more horrendous. And he shook the bureaucrats visibly. For at least an hour after he left they were altered men. And that is much longer than anybody else has ever succeeded in shaking the Canadian economic bureaucracy!

Bryson’s political resonance during the World Food Crisis is well demonstrated by a testimony he made before the U.S. Senate’s Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices and Subcommittee on Foreign Agricultural Policy in October 1973, co-chaired by former US vice-president Hubert Humphrey. Bryson relayed the ideas put forth in his August report, resonating with Humphrey’s pessimistic language and tone. He also incorporated other politically salient events into his narrative, including poor harvests in the Soviet Union and the United States. He dismissed the arguments made by the economists who had spoken before him, portraying climate change as a threat to world political stability, and bewailed the loss of grain reserves. In response, Humphrey was “visibly moved,” advocating for more public funding for climate research as it pertained to food supply (U.S. Congress, 1974; Naylor, 2021; The Washington Post, 1973). This funding materialized for Bryson in the form of a total of \$3m worth of grants for IES from the National Science Foundation, NASA, the Wisconsin graduate school, and a Rockefeller Foundation contribution of \$250,000 (Rockefeller Foundation, 1974a, p. 97; Bryson, 1978, p. 90). Although not all of this money was earmarked for climate research, Bryson was in control of the purse strings. For context, the research budget for Wisconsin’s meteorology department of around 20 faculty members in 1968 was around \$1m (G. Kutzbach, 1979, p. 1169).

Bryson’s political prominence was reflected by an elevated public profile. Bryson was an important popularizer of climate narratives during the 1970s. As was said by historian of physics Spencer Weart: “Scarcely any popular article on climate in the 1970s lacked a Bryson quote or at least a mention of his ideas” (Weart, 2020, p. 18). The same month that

Bryson was making his statement to Congress, his argument was being printed in the popular environmentalist journal *The Ecologist*, resonating with similar viewpoints being put forth by a fringe of the UK meteorological community (Bryson, 1973b). As was the case in the 1960s, Bryson was a leader within a wider movement, with comparable controversial climatic prognoses being tentatively made by other interdisciplinarians such as Hubert Lamb (founder of the University of East Anglia's Climatic Research Unit), with whom Bryson later collaborated in order to hypothesize a climate-based mechanism for the fall of the bronze age Mycenae civilization (Bryson et al., 1974; Lamb, 1973).³ In May 1974, Bryson, Lamb, Hermann Flohn (Founding Director of the Meteorologisches Institut of Bonn University), and several other climatologists met in Bonn, Germany, emphasizing an observed cooling in the Northern hemisphere and releasing an apocalyptic statement that hammered home the threat of this climate change on food supply: "The facts of present climate change are such that the most optimistic experts would assign near certainty to major crop failures within a decade. If national and international policies do not take these near certain failures into account, they will result in mass deaths by starvation and probably in anarchy and violence that could exact a still more terrible toll." (Anderson, 1974a, p. 27; Roberts, 1975, p. 63).⁴ The high point of Bryson's fame came with the publication of the bestselling *Climates of Hunger* in 1977, written in collaboration with the journalist Thomas Murray, representing a popular synthesis of much of Bryson's work to date (Figure 2). Naturally, Bryson's epic apocalyptic narratives were on full display (Bryson & Murray, 1977). *Climates of Hunger* underwent three print runs in less than 2 years, and the book received mostly positive reviews from outside immediate climatological circles (Biswas, 1978; Gribbin, 1978; Parry, 1980; Spink, 1978; Warren, 1979).⁵ However, Cambridge climatologist Alfred Grove complained that the book oversimplified its ideas about the atmosphere so much as to mislead its popular audience (Grove, 1981).

Grove's criticism was one of many—Bryson's fame came at a price. Soon after the events of 1973, many other members of the meteorological community let it be known that Bryson had gone too far in making climatological forecasts. For much of the community, the politically charged turn toward crisis disciplines had not happened and the "more data is required" mantra remained prevalent. The usual method of public communication within climatology was to release public statements from conferences, which mostly went little further than recommending further research (National Research Council, 1973; Pecan & Woodwell, 1973; SMIC, 1971). Not only did Bryson break a taboo by speaking to reporters directly, but he was also instrumental in organizing meetings that released political statements advocating for changes in agricultural policy (Roberts, 1975; Rockefeller Foundation, 1974b). This was highly embarrassing to senior figures. Bryson later recalled how a member of the National Academy Committee on Atmospheric Sciences came into

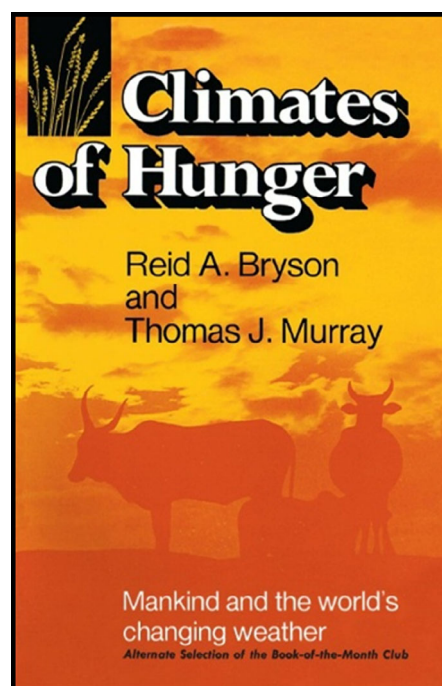


FIGURE 2 Paperback cover of Reid Bryson's bestselling book, making clear the association between climate, food, and the crisis in the Sahel (Bryson & Murray, 1977)

his office and told him to stop speaking to reporters (Bryson, 1986, p. 27). It should also be pointed out that much of the meteorological community simply thought that Bryson was wrong in his climatological forecasts and may have been uncomfortable that Bryson had suggested himself as a representative of wider meteorological discourse on multiple occasions (Anderson, 1974a; U.S. Congress, 1974, p. 125; Roberts & Lansford, 1979, pp. 72–73). In the end, the National Center for Atmospheric Research was forced to actively enter the media landscape to do battle with Bryson's audacious claims, curtailing and redirecting Bryson's influence with political elites (Anderson, 1974a, 1974; Lansford, 1974). However, when it came to the politicization of climate, Bryson had already won within the sphere of discourse. In high-level political speeches, government reports, and science funding applications climate was now tied to food supply, with several climate scientists joining Bryson in embracing the public arena and discussing agricultural policy, most notably a young Stephen Schneider (Central Intelligence Agency, 1974, 1976; Kissinger, 1974, pp. 580–581; Roberts & Lansford, 1979; Schneider & Mesirov, 1976; McQuigg et al., 1973; USCGARP, 1975; G. Henderson, 2014). At the first world climate conference in 1979, food was a dominant theme. Much of the opening statement of chairman Robert M. White, with its emphasis on the Sahel disaster, synthesis of disparate climate events, and bemoaning of the lack of food reserves, could have been written by Bryson himself six years before (World Meteorological Organization, 1979b, pp. 1–10).⁶

5 | BRYSON THE PARIAH

Despite his new status as a somewhat embarrassing firebrand, most of Bryson's friends stuck by him on a personal level. Stephen Schneider (who later courted his own controversies with the media) decried what he saw as abuse: "...to listen to some of the vicious remarks about Bryson's *motives* made by some members of the discipline makes me wonder just who in the profession is being most unethical." (Schneider & Mesirov, 1976, p. 141). Kenneth Hare, while distancing himself from Bryson's prognoses, said at a dinner speech in 1979 "Well, Reid and I are very great friends; he is perhaps my closest friend. We're opposite in a great many ways. I would never have the gall to do some of the things that Reid has chosen to do. I don't have the guts. I'm a conservative. He's a radical. I am a stay-at-home, he's a traveller." (Hare, 1979, p. 1173). While the professional relationship between Bryson and Suomi was placed under ever more strain, the two men still got along personally, with Suomi saying in 1989: "Heavens. We're neighbours to this day and don't fight." (Broad, 1989). Walter Orr Roberts, the former director of the National Center for Atmospheric Research, was even willing to (indirectly) give Bryson some credit for publicly shining a spotlight on climatological issues (Roberts & Lansford, 1979, pp. 106–107). Most academics who knew Bryson well maintained that Bryson believed what he was saying and had noble motivations. Nevertheless, when it came to Bryson's methods and communication style, the split was clear. Bryson's divorce from meteorological institutions was very much mutual. In 1980, he published a rather eclectic poem perhaps aimed at some colleagues: "He knows no fact; He knows but theory. He does not know that he is dreary. The outside world is big and wide—to learn from it is 'neath his pride'. This ostrich, when he's thus disposed, leaves his backside so exposed!" (Bryson, 1980). For Bryson, the idea of boiling climate down to a theoretical hydrodynamical system was misguided, and his crisis climatology held many more dimensions. First, Bryson believed the long-term history of the climatic system was absolutely essential for understanding its present, and felt that the drive toward mathematical modeling suppressed this avenue of enquiry. Second, Bryson could not envision a climatology in which "the science" was separated from the politics. For Bryson, science and society were completely inseparable, both from a methodological and ethical standpoint.⁷

Bryson quietly retired from his administrative duties in 1985, but continued to be active in research and teaching (American Meteorological Society, 1985). In an interview from 1986, Bryson appears to be tired and burnt out (Bryson, 1986, pp. 52–54). His successor as head of the Institute for Environmental Studies, despite regarding Bryson as a mentor, saw the abdication as something of an opportunity: "Fifty years ago, this institute was, like, one angry dude. That's what it was. [...] I mean, he did great stuff. Never talk Reid down. But it was just one guy. Now it's different." (Allen, 2020, p. 24). Toward the end of his life, Bryson characteristically refused to bend to changes in the wind. He was highly critical of the environmentalist mode of study that he helped shape in the 1960s, for example criticizing the separation of humanity from the environment: "Even the bulk of the ecologists with whom I talked wanted to consider ecosystems without people in them." (Bryson, 1993, p. 786) As global warming became the accepted face of climate change, he maintained his position that anthropogenic carbon dioxide would have little effect on global temperatures (his own climate change hypothesis in 1973 included anthropogenic carbon dioxide as a contributor, but this was not the same as global warming). Interestingly, Bryson was critical of James Hansen's famous appearance before a congressional subcommittee on a hot day in 1988, unable to see any echoes of his own congressional testimony during the

World Food Crisis (Bryson, 1993, p. 792). Bryson's position on global warming became increasingly unacceptable as time went on. Correspondingly, Bryson became louder and louder, although he repeatedly made clear that his lack of support for global warming should not be understood as support for unlimited fossil fuel use (Bryson, 1993, 2007; Hoopman, 2007).⁸ When Bryson died in 2008, Wisconsin's institutional obituary tiptoed around his legacy. It tells the story of Bryson as an institution builder, a visionary interdisciplinarian, an inspiring teacher and communicator; but neglects to mention his controversial aspects (Devitt, 2008). The pages of the history of climate studies are filled with spotless institutional figures. Bryson was not one of them, but he has a legacy nevertheless, and a good part of this legacy was forged because of his controversial nature, not in spite of it.

6 | CONCLUSION

Reid Bryson was a soldier who hated taking orders, an aspiring archeologist in the physical sciences, an interdisciplinarian in the age of numerical modeling. Maverick though he was, his story cannot be dismissed as a mere footnote in histories of climate change. Through congressional testimony, we can bear witness to Bryson convincing former Vice-President Hubert Humphrey of climate change's apocalyptic potential—a recorded conversation that was only the tip of the iceberg of Bryson's interactions with political elites in North America during a period of economic crisis. Toward the end of the conversation, Humphrey declared that Bryson's words should be “driven home to people in high positions of leadership and responsibility” (U.S. Congress, 1974, p. 121). The narrative connecting food supply to climatic changes during the World Food Crisis was later taken up by US Secretary of State Henry Kissinger during a speech to the UN general assembly in April 1974 (Kissinger, 1974, pp. 580–581). Climate change had arguably never had such high-profile exposure before. This was a foreshadowing of what was to come.

There have been recent arguments that climate activism represents an “empty radicalism”—a vague movement with even vaguer proposals for societal change (Nordhaus, 2019). Under Bryson, climate already fulfilled Andrew Ross's description as a “volatile, political commodity” (Ross, 1991, p. 7) that had to be treated with care—after all, it was hurting ordinary people's pocketbooks—and Bryson had specific and radical policy proposals to tackle it. His proposal of increased food reserves was anathema to the economic policy trajectory in 1973, which prioritized the increased production and sale of food above all else (Roberts & Lansford, 1979, pp. 131–132; Schneider & Mesirov, 1976, pp. 31–32). Predictably, Bryson's proposal was never seriously taken up. In the end, Bryson's biggest impact was on discourse, and much of the apocalyptic language used regarding climate change today can be traced back to the 1970s. This raises a stark question. For half a century, the political sphere has been battered by the idea of climate apocalypse, and yet real societal change is yet to materialize. Perhaps Bryson would tell us that hammering home the message of climate should not be the focus of activism, and instead we should be looking at the deeper, more holistic issues of our societies of which climate change is only one part.

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CONFLICT OF INTEREST

The author has declared no conflicts of interest for this article.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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ENDNOTES

¹ I take Nissani's fairly simple definition of interdisciplinary here: (Nissani, 1995).

² It is interesting that the recent biography of Verner Suomi makes little of this lifelong relationship: (Lewis et al., 2018).

- ³ Lamb also received a substantial injection of funds (\$120,000) from the Rockefeller Foundation, which had close links with the US government. Both Bryson and Lamb have suggested that Rockefeller money was more or less controlled by the administration: (Rockefeller Foundation, 1974a, p. 64; Bryson, 1986, p. 38; Lamb, 1997, p. 203).
- ⁴ This complicates the argument of Peterson et al. (2008). The myth of a global cooling consensus did not just arise within the media, but was also actively encouraged by a minority within academia during the 1970s.
- ⁵ The University of Wisconsin Press was able to provide the author with a lower sales limit of 20,000 for *Climates of Hunger* (over 10,000 each for cloth and paperback). It is possible that the actual sales were much higher. One imperfect measure of Bryson's fame is Google's ngram tool, which shows "Reid A. Bryson" having more mentions than "Stephen H. Schneider," "Helmut E. Landsberg," and "Walter Orr Roberts" in the latter half of the 1970s (smoothing of three).
- ⁶ Bryson was present for the full period of the first World Climate Conference, but was not mentioned in the final report presented to policymakers: (World Meteorological Organization, 1979a, 1979b). Bryson's influence on political discourse coincided with a much quieter turn towards emphasizing economic aspects within meteorological institutions and discourse, which also contributed to the linkage of climate change and food supply within the political sphere: (Berggren, 1975; Janković, 2015; Maunder, 1970).
- ⁷ In many of these views, Bryson was supported (in a more polite manner) across the channel by Hubert Lamb, who also believed that the drive towards numerical modeling suppressed other ways of knowing (Martin-Nielsen, 2015).
- ⁸ Despite all this, Bryson seems to have made the most of his retirement, retracing the route of the Silk Road as one of his travels: (Devitt, 2008).

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