



Karl W. Butzer

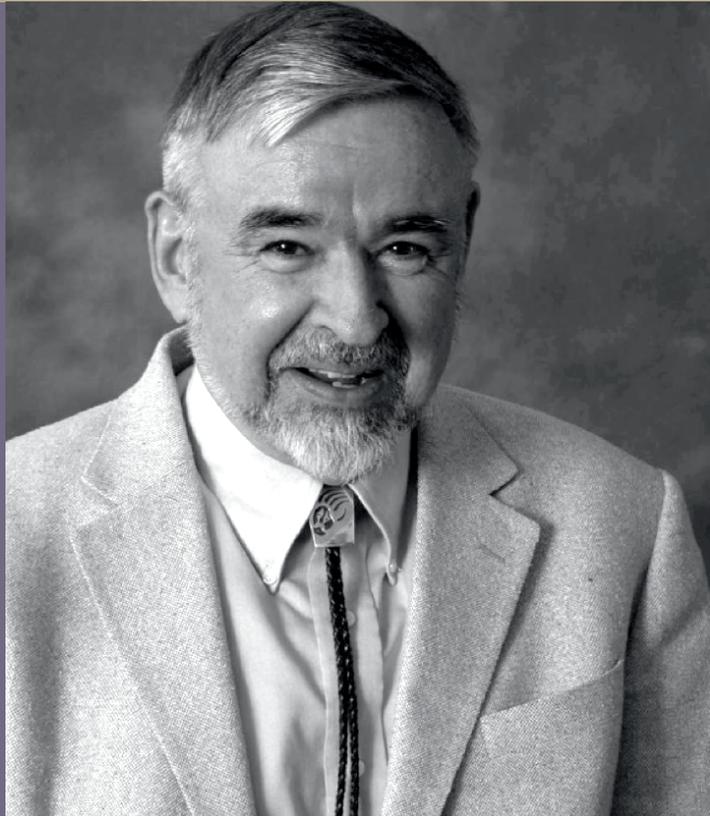
1934–2016

BIOGRAPHICAL

Memoirs

A Biographical Memoir by
B. L. Turner II

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NATIONAL ACADEMY OF SCIENCES

KARL WILHELM BUTZER

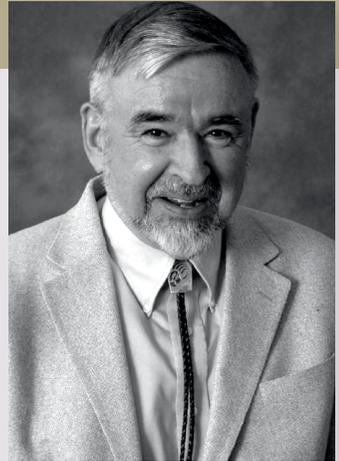
August 19, 1934–May 4, 2016

Elected to the NAS, 1996

Karl Wilhelm Butzer was a pioneer of ge archaeology and a preeminent human-environment scientist. His research examined nature-society relationships from the earliest hominins to civilizations ranging from ancient Egypt to colonial Mexico.

Born in Mülheim an der Ruhr, Germany, Karl and his brother Paul were smuggled out of the country in 1937 under the seat of a school bus, joining their father and mother who had escaped previously. Making their way to England at the outbreak of World War II, the family was moved by the British government several times, including a stop at the Isle of Man internment facility, before settling them in Bournemouth. The family was permitted to emigrate to Canada in 1941, eventually settling in Montreal, where Karl attended McGill University. He obtained a B.Sc. in Mathematics with Honors and a M.Sc. in Meteorology and Geography in 1954 and 1955, respectively. He returned to Germany to take a Dr. rer. nat. (D.Sc.) in Physical Geography and Ancient History from the University of Bonn in 1957.

Karl's research achievements were honored by three disciplines—geography, archaeology, and geology—recognizing not only his contributions to each but his integration of them. What were these contributions that positioned Karl as the preeminent paleo-human-environment scientist of his generation?



Karl Wilhelm Butzer

By B. L. Turner II

Skeptical of his choice of study, Karl's parents made a bargain with him that propelled him toward his life's work. If Karl completed his undergraduate degree in mathematics with honors, he would be allowed to enter the masters program in meteorology and geography at McGill, fields of study which his parents viewed skeptically. Completing his M.Sc. degree in one year, Karl returned to Germany for his doctoral studies under the tutelage of the geographer, Carl Troll, who coined the term landscape ecology in 1939 and whose integration of physical and human geography attracted Karl's interests.

During his first semester break in 1956, Karl took an excursion to Egypt. While exploring the coast line of El Alamein, he discovered a major fault zone interrupting the Pleistocene beach ridges at the western edge of the Nile Delta, which led to a 1960 article that remained highly cited for decades. So began Karl's interest in the paleoenvironments of Egypt, and the beginning of what would become his geoarchaeological approach: start by examining the stratigraphy of an area, usually one occupied in the recent to distant past; examine sediments from the area in the lab; and link the human occupation of the area to the paleo-physical evidence in order to assess the human-environment conditions of the time and place in question. This approach would go on to reshape much of archaeology and would generate the interdisciplinary subfield geoarchaeology.



Karl and Lis, Kimberly, South Africa, 1974.

By graduation in 1957, Karl had amassed seven publications, a prodigious accomplishment for that time, landing him a position as a research associate in the Academy of Science and Literature in Mainz, Germany. In 1959 he married Elisabeth (Lis) Schloesser. Their honeymoon involved the exploration of incised marine inlets of Mallorca, Spain! Thus began a lifetime of travel and cooperative research for the couple. In 1959, Karl accepted an assistant professor post in the Department of Geography, University of Wisconsin-Madison, eventually being promoted to associate professor in 1963. Not permitted to teach geomorphology, he developed a course dealing with the reconstruction of Pleistocene environments and human-environment relationships up to the beginning of agriculture in the Near East. This course led to his renowned

book, *Environment and Archaeology: An Introduction to Pleistocene Geography* (1964), which was anointed on its release as a classic and subsequently a pedagogical landmark by a preeminent archaeologist and geoarchaeologist, respectively. A much-expanded edition of *Environment and Archaeology* appeared in 1971 with the subtitle *An Ecological Approach to Prehistory*.

Karl departed Wisconsin for the University of Chicago in 1966, courted foremost by paleoanthropologists but taking the position of full professor in two programs, anthropology and geography. There he redirected some of his field research, joining Clark

Howell and the search for early hominins in eastern Africa. This field effort led to contacts with Richard Leakey, who had just found a 130,000 year-old, anatomically modern cranium. Karl provided sediment evidence and interpretations for some of the finds, which assisted in the development of the “out of Africa” hypothesis of modern humans. Chicago also afforded Karl the opportunity to work with Richard Klein in South Africa, where Karl helped to demonstrate the environmental conditions of early modern humans there over 100,000 years ago.

Karl expanded his efforts on the social dimensions of human-environment relationships via interactions with anthropologists engaged in the emerging cultural ecology subfield. He delved into assessments of the political demise of Egyptian dynasties in relation to irrigation systems and the failures of Nile floodwaters, registered in his book *Early Hydraulic Civilization in Egypt: A Study in Cultural Ecology* (1976). He framed this case and human-environment relationships at large within a complex systems approach. This before the current attention to such systems emanating from ecological and resilience sciences.

In 1981, Karl tested the waters as Chair and Professor of Human Geography at the Swiss Federal Institute of Technology in Zürich for one year before returning to Chicago. In Zürich he advanced a full-fledged human-environment science of the past in *Archaeology as Human Ecology: Method and Theory for a Contextual Approach* (1982). Karl amplified his challenge to paleo-environmental and archaeological researchers to appreciate the complexity of human-environment interactions and to allow the exploration of a full range of evidence. From 1982 until 1987, Karl and Lis carried out a comprehensive study in eastern Spain, combining archaeological excavation, archival documentation, and settlement and land use studies.

Karl took his final position as the Raymond C. Dickson Centennial Professor of Liberal Arts, Departments of Geography and Anthropology, University of Texas at Austin in 1984. Now in driving proximity to Mexico, Karl and Lis took up extensive field work in the Bajío of north-central Mexico, addressing the environmental impacts of Hispanic land uses. With Lis focused on archival documentation and Karl on sediments, this research challenged claims about the environmentally degrading land uses of the Colonial period, noting that numerous indicators of pre-Hispanic land degradation were prevalent in the Bajío, some of which improved under Hispanic dominion. Karl, insisting on an evidence-based interpretation of land changes in Mexico, challenged the popular position accompanying the Columbus Quincentenary that the Spanish introduction of

Over his career, Karl slowly shifted the balance of his research from geoarchaeology to cultural ecology, that is, from interpretations of past environmental conditions to the reciprocal relationships between the environment and society.

herd animals and the plow were the fundamental land-degrading elements of Colonial Mexico.

Over his career, Karl slowly shifted the balance of his research from geoarchaeology to cultural ecology, that is, from interpretations of past environmental conditions to the reciprocal relationships between the environment and society. Following the traditions of natural history, he believed that both inductive and deductive approaches, always informed by empirical evidence, were required to arrive at robust interpretations. Karl was suspicious of purely theoretically driven research applied to

past and present human-environment interactions, commonly responding by demonstrating instances in which the evidence ran counter to theory or, at least, required a much more nuanced understanding of the processes in question. This understanding was not fully gained by the mechanistic explications of the natural sciences but required an appreciation of what historical, ethnographic, and cultural evidence had to offer.

He was not tolerant of what he interpreted to be poorly informed simplifications. At one science conference he became sufficiently disgruntled with several presentations on the societal consequences of contemporary global environmental change that he requested to be placed ad hoc on the presentation agenda. What followed was an empirically rich example of human-environment interactions cast in a complex systems viewpoint in which the punchline was that the environmental and social outcomes of contemporary global environmental change were difficult to predict and should be forecasted with caution.

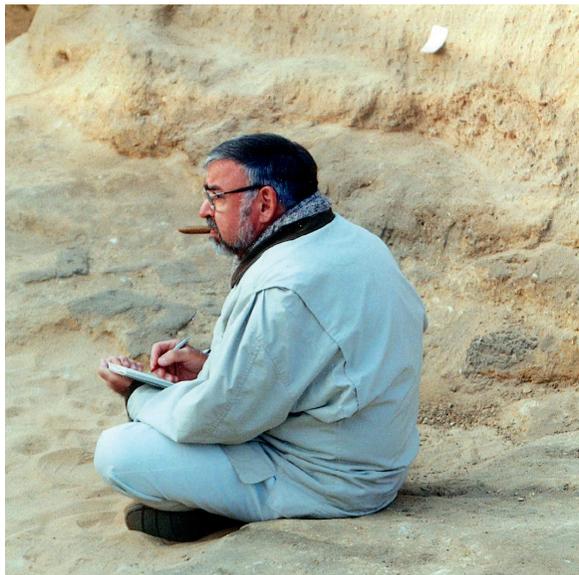
In another example, Karl was suspicious of simplifications about past social-environmental collapses and their use as analogues for understanding contemporary environmental tipping points. His response was to put together a special feature in the *Proceedings of the National Academy of Sciences* (2012), drawing on other Butzerian-like researchers, examining past societal devolutions and the complexity of their causes. His insistence on empirical detail and careful interpretation of multiple dimensions of the problem resulted in articulations that rarely could be distilled into simple sound-bites of the kind that capture the attention of non-academic outlets. His base message from that *PNAS* effort exemplified: “Successful societal transformation probably does involve centrifugal processes, yet what is logical in contemporary perspective may be

unpredictable in the light of good field, archival, or other primary sources for historical time.”¹

Karl loved field research, presenting his results to the science community, and teaching-mentoring, especially at the graduate level. In regard to the last, he received the Outstanding Graduate Teaching Award from the University of Texas at Austin in 2005. His research output was prodigious, including 14 books and monographs, several acclaimed as noted, and 275 refereed articles, book chapters, and encyclopedia entries written in English, German, and Spanish, and translated into six languages. He was, however, most at home in the field, and his field research was extensive: Egypt and Nubia, 1956 dissertation research, 1958

for the German Archaeology Institute, 1962-63 for Yale University project, and 2001-02 for Ancient Egypt Research Associates; East Africa, 1967-69 for the University of Chicago Omo Expedition, and at Axum, Ethiopia in 1971 and 1973; South Africa, nine field seasons between 1969 and 1983; Spain, 1969-71 research in Mallorca and Catalunya, 1961-63, 1967, and 1980-81, University of Chicago Excavations at Torralba-Ambona, and 1980-87, Sierra de Espadan Project (director); Mexico, 1995-2000, Laguna Project (director); Australia, 1999 and 2000; Nova Scotia, Canada, 2000; Cyprus, 2004; Portugal, 2010-2011.

The range of honors and awards for Karl’s research spanned three disciplines—geography, archaeology, and geology—and included: Honors, Association of American Geographers (1968); John Simon Guggenheim Fellowship (1976); the Busk Medal of the Royal Geographical Society (1979); the Fryxell Medal for Interdisciplinary Research from the Society of American Archaeology (1981); the Henry Stopes Medal from the Geologists’ Association of London (1982); election to the American Academy of Arts and



Karl logging Nile flood deposits in 2001.

1. K. W. Butzer. Reply to Pearson and Pearson: Reflections on historical vs. contemporary information. *PNAS* 109 (2012): doi: 10.1073/pnas.1207996109.

Sciences (1984); the Archaeological Geology Award of the Geological Society of America (1985); election as a honorary fellow of the American Geographical Society (1985); the Pomerance Medal from the Archaeological Institute of America (1991); and an honorary doctorate from the University of Stirling, Scotland (2011); among others.

Karl was not caught up in the many awards and honors he had received, and he did not take well to others trumpeting their own professional import. At the end of one major international meeting individuals stood to announce which significant entity, such as an international science agency or government head, they would meet within the next week to extend the lessons and messages emerging from the meeting. Karl viewed this event as an exercise in the self-aggrandizement of the individuals speaking more so than as a record of the potential impact of the meeting. He also avoided pomp and circumstance, when possible, perhaps the reason why Karl never signed the Great Book of the National Academy of Sciences. Indeed, he never stepped within the halls of the Academy building.

Karl self-described as a no-nonsense, tell-it-like-it-is individual who did not take to game playing in professional contexts and who was quick to call out those who did. His fearless academic persona, however, belied a worldview that appreciated cultural differentiation, cared for the dispossessed, especially refugees, and championed the underdog. He credited these attributes to his life history, one that involved discrimination by other Germans and the German state towards those not subscribing to National Socialism and, of course, towards Jews; distrust of German refugees and the involuntary movements of his family around England; and the poor treatment he received in his Canadian schooling as a German Canadian during WWII, a treatment that was also shared by the sole French Canadian student in his class. All this and more shaped his worldview and his persona.

Despite crossing three disciplines, holding joint appointments with anthropology-archaeology—the latter practitioners described as “the most interesting, stimulating, and receptive professionals” he had encountered in academe—and receiving initial resistance from geography (and geology) for his vision of research, Karl aligned himself foremost with the geographical sciences.² This alignment, I suspect, followed from his discovery of geography at McGill and to the great Germanic geographic traditions melding natural history and human-environment relationships, those shaping his mentor. Surely Karl’s contributions to those traditions, linked to archaeology and geology, were transformative.

Karl is survived by Lis, two daughters, Helga and Kieke, and two sons, Carl and Hans, seven grandchildren, and his older brother, Paul.

2. Butzer, K. W. (1986). Response by Karl Butzer. *Bulletin, Geological Society of America* 97:1397-1398.

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