

## James Burke: A Historian?

By Kevin Lydy

*The traffic lights turn red, the traffic slows, and you cross the road. In doing so you express a modern confidence in the way society functions that was generated in Western Europe over eight hundred years ago.<sup>1</sup>*

If you have never heard of him, you have most likely seen him popping in and out of periods in history and explaining how certain inventions came to be. If you have never read any of his books, you have most likely watched him on television linking inventions from different time periods together. James Burke, author, producer, and director is well-known one way or another. His works extensively focus on science and technology, particularly on the development and the connectedness of inventions. This scientific focus gives probable cause to associate Burke with scientists and scientific inquiry. On the contrary, James Burke is very much a historian: his television series and books trace the development of inventions throughout history, linking up seemingly unrelated events, people, and even geographic regions into one cohesive history.

In order to classify Burke as a historian, one must define what it is that a historian actually does. Bernard Bailyn describes the historian as "someone who develops, in one way or another, what [Carl] Becker called the 'artificial extension of social memory'—by recovering, through the evidences of the past, aspects of what happened."<sup>2</sup> The "artificial extension of social memory" refers to the fact that, due to the vast amount of time that has elapsed in the history of the world, there are many events that have been lost. Thus, the historian acts as society's memory in order to remember what has occurred. Hayden White shares the same belief that "historians seek to refamiliarize us with events which have been forgotten through either accident, neglect, or repression."<sup>3</sup> In his books and television series, Burke attempts to illustrate how modern day technology (e.g., television, computers, telephones) came about. Contemporary society takes what it has for granted, oblivious to the origins of modern conveniences. Thus, as a historian, Burke helps society remember how inventions of the past developed into modern conveniences.

James Burke was born in 1936 in the small town of Londonderry, Northern Ireland. He later emigrated to England where he received his Master of the Arts in English from Oxford University. With his degree, Burke decided to travel to Italy where he would teach English at the Universi-

ties of Bologna and Urbino. In addition, he directed the English Schools at both Rome and Bologna. While in Italy, he assisted in the creation of a major Italian-English dictionary (Zanichelli) and edited sections of the Weidenfield and Nicholson Encyclopedia of World Art.<sup>4</sup>

With the connections Burke made in Italy, he landed a job on Italian radio where he served as interpreter to the B'Nai Brith representative at Vatican II. It wasn't until 1965 that Burke finally became exposed to television. He served as a reporter for an expansion station of Britain located in Rome. It was during this time that Burke first "became fascinated with television and its potential to entertain and inform."<sup>5</sup> In 1966 Burke moved back to England and began his long career with the British Broadcasting Company. During the span of about twelve years, he worked on documentaries, co-hosted a weekly science series, covered the Apollo moon flights, and from 1972-1976 he "produced, wrote, and presented the weekly prime-time one-man science show, 'The Burke Special,' for which he received the Royal Television Society's silver and gold medals for excellence in television."<sup>6</sup>

His experience in broadcasting soon led to Burke's most renowned piece of work: "Connections." The project began as a television series explaining the development of social and technological change, and has evolved into myriad television specials and companion books. The "Connections" series produced Burke's first major book, also called *Connections*; the book serves as a companion to the series and covers the same major topics it. While Burke has written several other wide-ranging books and produced many different television series, with topics that range from the examination of the brain and human perception to the Greenhouse Effect, it is his books and television series covering the development and connectedness of technology that have given him prestige. Since the first installment of "Connections," Burke has written and produced the 20-part series "Connections 2" which resulted in a companion book similar to *Connections* called *The Pinball Effect*. For the last few years Burke has been writing a monthly column for *Scientific American* entitled (what else?) "Connections" and is currently producing the third installment to the "Connections" television series, "Connections 3." The entire "Connections" compilation covers technological development, and as the title insists, attempts to link inventions across the globe and across time. Burke's prestige has landed him on "the U.S. lecture circuit, keynoting for organizations such as IBM, NASA,

MIT, VISA, the United Nations and the European Parliament.<sup>7</sup>

One can easily formulate an argument against the notion of James Burke as a historian by taking a simple trip to the library. Several historical authorities do not even list Burke nor do they contain any information about him. First and foremost, the American Historical Association's *Guide to Historical Literature* contains no reference to James Burke or his "Connections" series. Nor does the American Historical Association's *Historical Review* contain a review of Burke's book *Connections*, a book B. C. Hacker believes "belongs in every general collection."<sup>8</sup> In addition, Burke is left out of the *Humanities Index and Historiography: An Annotated Bibliography of Journal Articles, Books, and Dissertations*, which leads one to question whether James Burke truly is a historian.

Burke's style of writing and presenting history in the "Connections" series has received mixed reviews among scholars. He attempts to link up inventions with other inventions and connect times and places in history, refuting the notion of labeling history according to ages, such as the Dark Ages or the Middle Ages. "To give any period a specific label is to ignore the overlapping nature of the passage of events."<sup>9</sup> Burke's attempt to link almost everything together, this overlapping nature, could be seen as his first indiscretion. As David Breeden notes, "one must sometimes surrender all skepticism to accept Dr. Burke's gambols [sic] across three centuries as if they were a day. Across continents and languages as if all the world were a neighborhood."<sup>10</sup> Thus, the way Burke writes and presents history forces the public to assume these changes happened so simply and are easily connected. For example, Burke claims that "it was the automated organ . . . that was to solve a major problem for the French silk industry in Lyons, set up by Louis XI in 1466."<sup>11</sup> The reader is led to believe that the automated organ directly solved a problem for the French. In yet another example, taken from his television series, Burke explains how one can link up the invention of the vacuum pump to the discovery of air, to the discovery of Oxygen, and the functioning of the lungs to modern respiratory medicine. The vacuum pump could also lead to the steam engine and then the locomotive. Even more, the vacuum pump could also be linked up with the investigation of gases, to the experimentation of electric sparks sent through gases, to the cathode ray tube, and to RADAR.<sup>12</sup> One can easily see Breeden's critique--how Burke's connections are almost too trivialized.

Ed Regis criticizes Burke's facts more than his ability to draw connections. Reviewing *The Pinball Effect*, Regis uses the following quotation as an example of Burke's blindness to facts:

It was through the use of this technique that in 1952 Francis Crick and James Watson were able to confirm the three-dimensional structure of a molecule of protein. They saw that it took the form of a double helix, which agreed with what they had already deduced chemically. Their X-ray diffraction pattern confirmed the existence of the discovery of DNA, science is already well on the way to the Biol-

ogical Revolution.<sup>13</sup>

Regis points to several mistakes in this passage:

(1) DNA is not a "molecule of protein" but a molecule of nucleic acid. (2) Mr. Watson and Sir Francis Crick did not discover DNA, nor did they confirm its existence. Nucleic acids were isolated in 1869 by the biochemist Johann Friedrich Miescher; in 1929 Phoebus Levene separated RNA from DNA; in 1944 Oswald Avery showed that DNA was the agent of heredity. (3) The Biological Revolution (Mr. Burke means genetic engineering) is due not to the discovery of DNA but to the use of restriction enzymes and ligases (molecular scissors and glue), techniques that date from the early 1970s.<sup>14</sup>

In short, Regis feels that "Mr. Burke either doesn't understand the scientific point at issue or else is content to describe matters so loosely and imprecisely that the truth is lost."<sup>15</sup> Even though Fritz Stern suggests that "in explaining the past there are no hard and fast rules,"<sup>16</sup> one must admit that presenting the facts truthfully has to be a major rule for a historian.

Burke depicts a generally positive picture of history. The stories he presents look at all the successful inventions that paved the way to modern conveniences. A couple of reviewers feel Burke has left out the negative pictures of history from his works. Donald E. Marlowe suggests that "more attention to development failures would be a useful anecdote"<sup>17</sup> to *Connections*. Indeed, as Deborah Fitzgerald points out, in Burke's *The Day the Universe Changed*, "there are few ambiguities, false starts, errors of omission, or losers to progress."<sup>18</sup>

Despite all of the negative reviews, Burke has generated several positive reviews concerning his "Connections" series. B.C. Hacker's review disagrees with David Breeden's critique of Burke's ability to connect events and locations. He says "the great merit of [*Connections*] is that it presents the history of technology as a continuing and interconnected process."<sup>19</sup> Indeed, although Breeden criticizes Burke on that particular issue, he insists that "the trip [Burke] invites us to take is worth it."<sup>20</sup> An overwhelmingly positive review of *Connections* claims that "history books will soon be rewritten to include these patterns of interconnecting events, inventions and discoveries leading to technological change."<sup>21</sup>

These positive reviews, juxtaposed with the negative reviews, generate two totally opposite opinions of James Burke. On one hand, there are those who feel Burke is unsuccessful in his quest to link up events and inventions across time and across the globe. On the other hand, there are those who believe Burke is highly successful. However, what the negative reviews fail to realize is Burke's attempt to create a kind of history that has been debated for decades: a world history.

Presenting a world history, one that includes every corner of the earth, is no simple task. Connecting two entirely distinct societies from different locations on the globe is extremely difficult. In fact, some historians find it nearly impossible to create such a vast, sweeping history of the world. On

the issue of creating a truly comprehensive history, Bernard Bailyn insists that "I sometimes conclude that it isn't possible. Yet, I like to think that it is."<sup>22</sup> James Burke, connecting different times and places, succeeds in creating what Bailyn thinks is possible.

As early as the 1830s historians saw a need for a world or universal history. The great historian Leopold von Ranke believed "the historian must keep his eye on the universal aspect of things"<sup>23</sup> and that historians "must work in two directions: the investigation of the effective factors in historical events and the understanding of their universal relationship."<sup>24</sup> This debate has become one of modern historiography's central arguments: can a historian place events into a "universal aspect?" Ernst Breisach, in *Historiography, Ancient, Medieval and Modern*, says that there have been three possible approaches to creating a world history.

In the absence of a generally accepted conceptual scheme which could provide the framework of unity, those attempting to write world history have so far used three approaches: the sequence of cultures model, in which all cultures are subject to the same developmental pattern; the progress models now on a global scale; and the world system model.<sup>25</sup>

Of the three approaches, the progress model comes closest to the thinking of Burke. The progress model focuses on how industrialization will eventually occur in all societies, giving the world unity. Burke focuses on technology—how one invention led to the invention of another, creating a network of connections that can be traced throughout history. Some may argue that this "unity" resulted from the domination of the West over other cultures and societies, and even that Burke, too, incorporates this "Western dominance" into his works. However, he credits many of the inventions the West developed to non-western lands such as the Islamic East and Southern Asia. In just one example Burke shows that "the major inventions attributed with certainty to the Chinese include paper, silk weaving, clockwork, astronomical instruments, the horizontal loom, the spinning wheel, and the water wheel. These are inventions fundamental in the history of man."<sup>26</sup> Thus Burke's web of technology connecting the globe is not necessarily Western dominated.

World history attempts to connect several unrelated events into a comprehensive history. As Hayden White contends, "histories, then, are not only about events but also about the possible sets of relationships that those events can be demonstrated to figure."<sup>27</sup> History is often seen as separate spheres of events, each relevant only to the immediate times surrounding them. What world history seeks to accomplish is to shatter those spheres and create a framework that connects periods and places in history. Bernard Bailyn notes: Perceptive historians, immersed in their materials, note gaps in our knowledge that should be filled and anomalies in the data—inconsistencies and discrepancies—which impel them or others to find explanations. In the documentation and in the existing literature they see connections, parallels, and implications that suggest new patterns, whole worlds, large or small, that have not been seen before.<sup>28</sup> Indeed, Burke

creates connections that no one had ever thought of before when he mentions how "the making of breakfast at the same time by millions of people across the country is as much a part of the production line as is work at the conveyer belt an hour later."<sup>29</sup>

The kind of world history that Burke demonstrates is similar to what William H. McNeill practices. Burke illustrates how the invention of one device can affect the way an individual in a different part of the world approaches a problem. Likewise, McNeill remarks:

The ultimate spring of human variability, of course, lies in our capacity to invent new ideas, practices, and institutions. But invention also flourished best when contacts with strangers compelled different ways of thinking and doing to compete for attention, so that choice became conscious, and deliberate tinkering with older practices became easy, and indeed often inevitable. . . . Approaching the conceptualization of world history in this fashion, separate civilizations [become] the main actors in world history.<sup>30</sup>

McNeill's comment reverts back to Burke's non-West dominated world history. Each society or "civilization" contributes to the creation of world history though the means of technology and invention.

World history is often included as a subject in many high school and university curricula. To be sure, history is not the most popular of subjects as the numerical breakdown of majors of any college will show. Combine those numbers with the amount of information that a solid world history course contains and one will not find many students in line to sign up for the course. These students need some way to filter the information into one enormous outline or, as James Burke does, connect the information in a way that students can see links between various times and places. Indeed, Bailyn utilizes the latter style when he tries to "link America and the rest of the world, because that connection also helps explain. . . how we got where we are. And that, in the largest sense, is what history should do for the general reader and for the beginning student."<sup>31</sup> Deborah Fitzgerald, who criticized Burke's lack of failed inventions, also sees the potential in Burke's works to educate:

Burke's book would be a useful and entertaining introduction to the field for beginning students or interested laymen. The illustrations are an exceptional collection of paintings, broadsides, mechanical drawings, advertisements, cartoons, and photographs, and Burke's writing style is lively.<sup>32</sup>

Aside from Burke's "entertaining" value, the way he presents information proves conducive to student learning. The virtual network of connections eases the burden of committing to memory the many "unrelated" events and facts of history. Mary C. Burke (no relation) sees "Burke's design for

perceiving history as a process of connections culminating in a single object can be used in the classroom to enlighten students to the complexity and chance of history. It can also help them to understand the idea that the present is a composite of the past.<sup>33</sup> Perhaps the most convincing evidence of Burke's educating potential is the fact that some 350 colleges and universities utilize his works in their curriculum,<sup>34</sup> one of which happens to be Wittenberg University.

Fitzgerald's comment about Burke's entertainment value conjures yet another topic concerning history—public disinterest. History has already happened; it is over. In today's on-the-go world it seems as though eyes are on the future, especially with the new millennium rapidly approaching. The topics of history do not seem very relevant to this type of setting. In fact, since the reality of today appears so radically different from the realities of the past, "the broad public is simply bored."<sup>35</sup> Today's "rush rush rush" society is not interested in the slow motion of history. This can easily be seen in the number of best-selling, multi-volume histories that have hit bookstore shelves in the last couple decades. "Hence the historian, in order to perform the task of his profession, has to compose the narrative of events in such a way that the readers emotions will be stirred by it as if by reality itself."<sup>36</sup> James Burke's style of history is able to "stir emotions" in such a way that history looks more and more like the present. In a recent article in *Scientific American*, Burke mentions the advocacy of contraception, a woman who publicly spoke out for the utilization of contraception, and how those who did so were deemed "obscene and likely to pervert morals,"<sup>37</sup> all of which took place in the 1830s! Even in many of today's societies, publicly condoning contraception is a rather controversial subject; one that brings out many emotions in people. Burke is able to tap into the emotions of the reader as well as to illustrate the link between the present and the past.

The readdressing of Ed Regis' critique of Burke's facts, in which he claims several of Burke's claims to be false, conjures up one final issue concerning the validity of classifying Burke as a historian. In order to view Burke as a historian, one needs to realize the existence of various levels of historians. A historian is not born; all historians must progress and learn the ways of historiography in order to pursue that profession. There must be a natural curiosity about history which propels the search for more complete knowledge.

The beginning historian is what Carl Becker describes in *Everyman His Own Historian*. This beginner has a lack of excess knowledge, but possesses an intrinsic need or want to do something about it. The beginning historian starts by examining documents in order to learn essential but unknown facts.<sup>38</sup> For example, few Americans have heard the story of George Washington chopping down a cherry tree and not believed it to be, at some point in their lifetime, historical fact. The beginning historian takes that information and wonders whether it holds true when juxtaposed with other sources. Success comes when the beginning historian finds the information either true or false.

The novice historian takes this process of discovering his-

torical information one step further. Rather than revel in the success of disclosing the truth, this historian delves into the topic further. The novice historian looks at why events occurred. The facts are not enough; thus there is a desire to discover the motivations and reasoning behind the actions and decisions of the past.

Finally, the professional historian reaches the pinnacle of historiography. This type of historian performs the most extensive work of all three. While the beginner and the novice seek out facts for the reassurance of the information at hand and the reasons that explain the facts, the professional historian seeks to inform others on their findings. The title of "professional" should not be misleading for, as Bailyn suggests, "that does not confine historians to people who teach in colleges and universities. One of the interesting things about the practice of history these days is that history, while largely the domain of academicians, is not entirely so."<sup>39</sup> Professional historians publish their findings and even generate the kind of information that beginning historians become interested in. Henceforth, the process begins all over again.

James Burke lends a hand to all three levels of historians. His style of presenting history produces the kind of information that causes a beginning historian to inquire. Commenting on Burke's presentation of history, Deborah Fitzgerald exclaims how she "would rather have students who are entirely ignorant than ones who believe that people in the Middle Ages were morons."<sup>40</sup> However, a beginning historian must have an intrinsic desire to uncover truths, something that a teacher can only hope to create within a student. Burke is not preaching dogma in his writings; he merely presents information, in a rather entertaining manner, so that a beginner might become interested and pursue that curiosity a bit further. Doris Kerns Goodwin, at a colloquium at Wittenberg University, commented on the benefits of this kind of history. She believes if historical material is presented in such a way that it gets people interested, then it has done a good job.<sup>41</sup> The entire world seems interested in what Burke is doing, as his "Connections" series has been aired in more than fifty countries.

Burke addresses the needs of the novice historian in much the same way as he does the beginning historian. For example, Burke claims that "without the ability to cut metal very precisely the Industrial Revolution could not have taken place."<sup>42</sup> The novice historian takes this information and seeks out the reasons why this would be.

For the professional historian James Burke provides the greatest assistance. Burke generates history which causes professional historians to revisit their field. Burke keeps them on their toes, constantly creating history, forcing them to check and double-check the information presented. In a sense, he compels historians to keep on learning. To be sure, when Burke narrates a history concerning the Revolutionary War and connects it with sixteenth-century Italy,<sup>43</sup> a professional historian might wonder where such a connection exists and hence begins to look for it.

Creating a genuine world history is not easy. Linking different societies and cultures as well as different times to-

gether is a nearly impossible task. In order to do so, one must generate a common denominator: something which the entire world shares. This denominator is the key to connecting those societies and those times together on a giant web of events. James Burke finds a common denominator in the inventions of mankind. He creates one cohesive history while tracing the development of inventions, linking up seemingly unrelated events, people, and geographic regions. His connections allow members of present-day society to remember where they have originated. Revisiting Bernard Bailyn's definition of a historian as "someone who develops, in one way or another, what [Carl] Becker called the 'artificial extension of social memory'-by recovering, through the evidences of the past, aspects of what happened,"<sup>44</sup> one finds James Burke personifying that description.

### Endnotes

- 1 James Burke, *The Day the Universe Changed* (Boston: Little, Brown and Company, 1985), 19.
- 2 Bernard Bailyn, *On the Teaching and Writing of History* (Hanover, New Hampshire: University Press of New England, 1994), 8.
- 3 Hayden White, *Tropics of Discourse: Essays in Cultural Criticism* (Baltimore: Johns Hopkins University Press, 1978), 87.
- 4 Paul Laszlo, (1997) "James Burke - Biography," in The Unauthorized James Burke Web Experience, [Online], Available: <http://members.aol.com/plaszlo/burke/bio/bio2.htm> [1997, October 25].
- 5 Ibid.
- 6 Ibid.
- 7 Ibid.
- 8 B.C. Hacker, review of *Connections*, by James Burke, *Library Journal* 104 (October 1979): 2228.
- 9 James Burke, *Connections* (Boston: Little, Brown and Company, 1978), 108.
- 10 David Breeden, (1996), "Review of - The Pinball Effect: How Renaissance Water Gardens Made the Carburetor Possible-And other Journeys Through Knowledge"- by James Burke, in *Culture Cafe*, [Online], Available: <http://www.davidbreeden.com/revpinball.htm> [1997, November 10].
- 11 Burke, 108.
- 12 James Burke, *Death in the Morning*, directed by Mick Jackson and David Kennard, 52 min., Ambrose Video Publishing, 1983, videocassette.
- 13 Ed Regis, review of *The Pinball Effect*, by James Burke, *The New York Times Book Review*, 101 (September 1996): 9.
- 14 Ibid.
- 15 Ibid.
- 16 Fritz Stern, ed., *The Varieties of History* (New York: Vintage Books, 1973), 30.
- 17 Donald E. Mazlowe, review of *Connections*, by James Burke, *Science Books and Films*, 15 (May 1980): 267.
- 18 Deborah Fitzgerald, review of *The Day the Universe Changed*, by James Burke, in *Isis* 78 (September 1987): 292.
- 19 B. C. Hacker, review of *Connections*.
- 20 Breeden, taken from <http://www.davidbreeden.com/revpinball.htm>
- 21 Review of *Connections*, by James Burke, *Choice*, 16 (December 1979): 1328.
- 22 Bailyn, 33.
- 23 Leopold von Ranke, "Fragments of Literary Remains [1830s]," in *The Varieties of History*, ed. Fritz Stern (New York: Vintage Books, 1973), 59.
- 24 Leopold von Ranke, "Fragments of Literary Remains [1860s]," in *The Varieties of History*, ed. Fritz Stern, (New York: Vintage Books, 1973), 62.

- 25 Ernst Breisach, *Historiography, Past, Medieval and Modern*, 2d ed. (Chicago: The University of Chicago Press, 1993), 395.
- 26 Burke, *Connections*, 68.
- 27 White, 94.
- 28 Bailyn, 41.
- 29 Burke, *Connections*, 154.
- 30 William H. McNeill, "The Changing Shape of World History," *History and Theory* 34:2 (May 1995): 15. 31Bailyn, 17.
- 32 Fitzgerald, 293.
- 33 Mary C. Burke, "The Object, the Past, and the Social Studies Classroom," *Social Studies* 74 (Spring 1983): 193.
- 34 Taken from <http://members.aol.com/plaszlo/burke/bio/bio2.htm>
- 35 Breisach, 342.
- 36 Wilhelm von Humboldt, "On the Historians Task," *History and Theory* 6:1 (1967): 60.
- 37 James Burke, "Connections," *Scientific American*, January 1997, 117.
- 38 Carl Becker, *Everyman His Own Historian* (New York: F.S. Crofts & Co., 1935).
- 39 Bailyn, 8.
- 40 Fitzgerald, 293.
- 41 Doris Kerns Goodwin, interview by author, 5 November 1997, Springfield, OH, Wittenberg University, Springfield, OH.
- 42 Burke, *Connections*, 145.
- 43 Burke, "Connections," *Scientific American*, March 1997, 130.
- 44 Bailyn, 8.

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