

An Academic Genealogy on the History of American Field Primatologists

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ABSTRACT In this paper, we present the academic genealogy of American field primatologists. The genealogy has been compiled to formally document the historical record of this young field. Data have been collected from three main sources: 1) e-mail surveys, 2) library and Internet research, and 3) verbal communication through forums such as American Association of Physical Anthropology meetings. Lineages of primatologists have been graphically displayed using Microsoft Visio. As of September 2005, 672 names and 239 affiliated universities, organizations and institutions have been recorded in 19 lineages. Five hundred and thirty-eight of the 672 names, 80.1%, are field primatologists. The Hooton/Washburn lineage is the largest; 60.6% of the recorded field primatologists are linked to this lineage. In addition, four of the five professors

who have mentored a comparable number of field primatologists at American universities since Washburn are linked to the Hooton/Washburn lineage; and the school where Washburn mentored a majority of his students, UC-Berkeley, continues to have the highest overall graduation record for this subdiscipline. However, the field of primatology has been diversifying since the 1960s, and different universities are now responsible for graduating a substantial number of primatologists. We conclude that while the Hooton/Washburn lineage has remained remarkably homogeneous in its anthropological focus, the field is also becoming increasingly enriched by primatologists who have had training in fields such as zoology, psychology, and ecology both in the United States and abroad. *Am J Phys Anthropol* 132:406–425, 2007. ©2006 Wiley-Liss, Inc.

In this paper, we present the academic genealogy of American field primatology. This genealogy has been compiled to formally document the historical record of this young field in the United States. We recognize that the term “American” is most correct when used to refer to the whole American continent. However, for the sake of simplicity, we have chosen to use the term for North American researchers as do both this journal and “American Anthropologist.” The work presented below represents a decade of intermittent research, three consecutive years of continuous research, and multiple media sources (see Methods later). Therefore, we feel that the presented genealogy is as complete a record as is possible for such an endeavor.

The genealogy presented in this paper is certainly not the first academic genealogy that has been written, and it is of note that genealogies have also been constructed for the related but much older disciplines of biology and psychology (Williams, 1993; Robertson, 1994; Bennet and Lowe, 2005). The rationales for creating these genealogies have ranged from tracing ideologies (Robertson, 1994), to honoring an eminent member of the field (Tyler and Tyler, 1992; Bennet and Lowe, 2005), to satisfying curiosity about one’s own academic roots (Stella, 2001). Our genealogy derives from all three rationales. First, the idea to create this genealogy was initiated in 1996 by RWS, who conducted the preliminary research for this project to generate discussion at a Wenner-Gren Foundation international conference in Brazil. The topic of this conference was How and Why Ideas About Primate Society Have Changed within the short history of field primatology (Strum and Fedigan, 2000a). Therefore, the first draft of this genealogy was completed for the specific purpose of tracing changes in ideology throughout the subdiscipline’s short history. Second, the creation

of this genealogy also is in many ways a tribute to Sherwood Washburn (1911–2002). Prior to the creation of the genealogy, it was well-known that Hooton’s former student, Sherwood Washburn, would be the direct academic ancestor of many active primatologists. Indeed, an earlier paper on the history of primatology in the United States had already ascertained that by the late 1970s, the Hooton/Washburn lineage had produced over half of the anthropological primatologists in the United States (Gilmore, 1981). Third, curiosity and reverence for academic mentors has perhaps been the most profound rationale in perpetuating the development of this genealogy. While this last rationale may seem trivial, it is perhaps the most important. For the same curiosity that drives questions of “who” and “when” will inevitably lead to questions of “what did they do” and “why.” Since the fields of (first) anthropology and (more recently) primatology have long been used to interpret the moral tone of our civilization (see Kroeber, 1935; Gould, 1996; and Sussman, 1999 for examples), sound primatological theory can only be developed through those familiar with history as well as science. Thus stated, we wish to emphasize that the thoughtful questions, suggestions, and oral stories of numerous reviewers on earlier drafts of this genealogy from students and professors alike

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have contributed to the project's growth and meaning well beyond its original intentions. Some of these accounts are shared in the discussion. We thank all those who have contributed to this project.

BACKGROUND

The first primatologist to have a lasting impact on American field primatology was Clarence Raymond Carpenter, who conducted his early research in the 1930s. However, the ideology from which most contemporary American field primatology is based dates only to the Cold Spring Harbor Symposia of Quantitative Biology in 1950, where 129 prominent members of biology and anthropology from the United States and abroad met to discuss (among other topics) human evolution (Sussman, 1997; Sussman, 2000). Inspired by the symposia, the then primate anatomist Sherwood Washburn wrote a proposal titled *The New Physical Anthropology* (1951), in which he stated that physical anthropologists need to become uninhibited in the use of technique to effectively research human evolution (1951; see also Fedigan and Strum, 1999). Washburn at that time was most interested in pursuing questions of evolutionary continuance between Old World simians and modern humans through the use of population genetics and the collaboration of social scientists, geneticists, anatomists, and paleontologists (see also Sussman, 2000). However the discovery a few years later that the large-brained but morphologically ape-like Piltdown Man was a fraud further accentuated the idea among anthropologists that there is evolutionary continuity between nonhuman primates and hominins, and that primate field studies could provide significant contributions towards interpreting the behavior of human primate fossils (Sussman, 2000; Sussman, 2007). Evidence that this idea profoundly influenced the birth of American field primatology lies in Hooton's (1954) paper titled *The Importance of Primate Studies in Anthropology*, which he wrote very late in his career (1887–1954). It is he who provided the fertile ground from which the academic genealogy of American field primatology is most firmly based.

MATERIALS AND METHODS

We have defined a behavioral field primatologist as a researcher whose primary academic interest includes the behavioral ecology of nonhuman primates within their natural or semi-free ranging habitats or both. However, researchers whose interests do not fit this definition are also included in the genealogy when they have a direct link to a field primatologist as either his (or her) mentor or student (see below for more details on criteria and analysis). We have attempted to identify these other researchers by listing their professions below their names when that information was available. Yet we recognize that we may be erroneously representing a minority of these researchers as field primatologists. These errors are most likely to occur among primatologists who study the social behavior of primates, but whose research has solely been with captive animals.

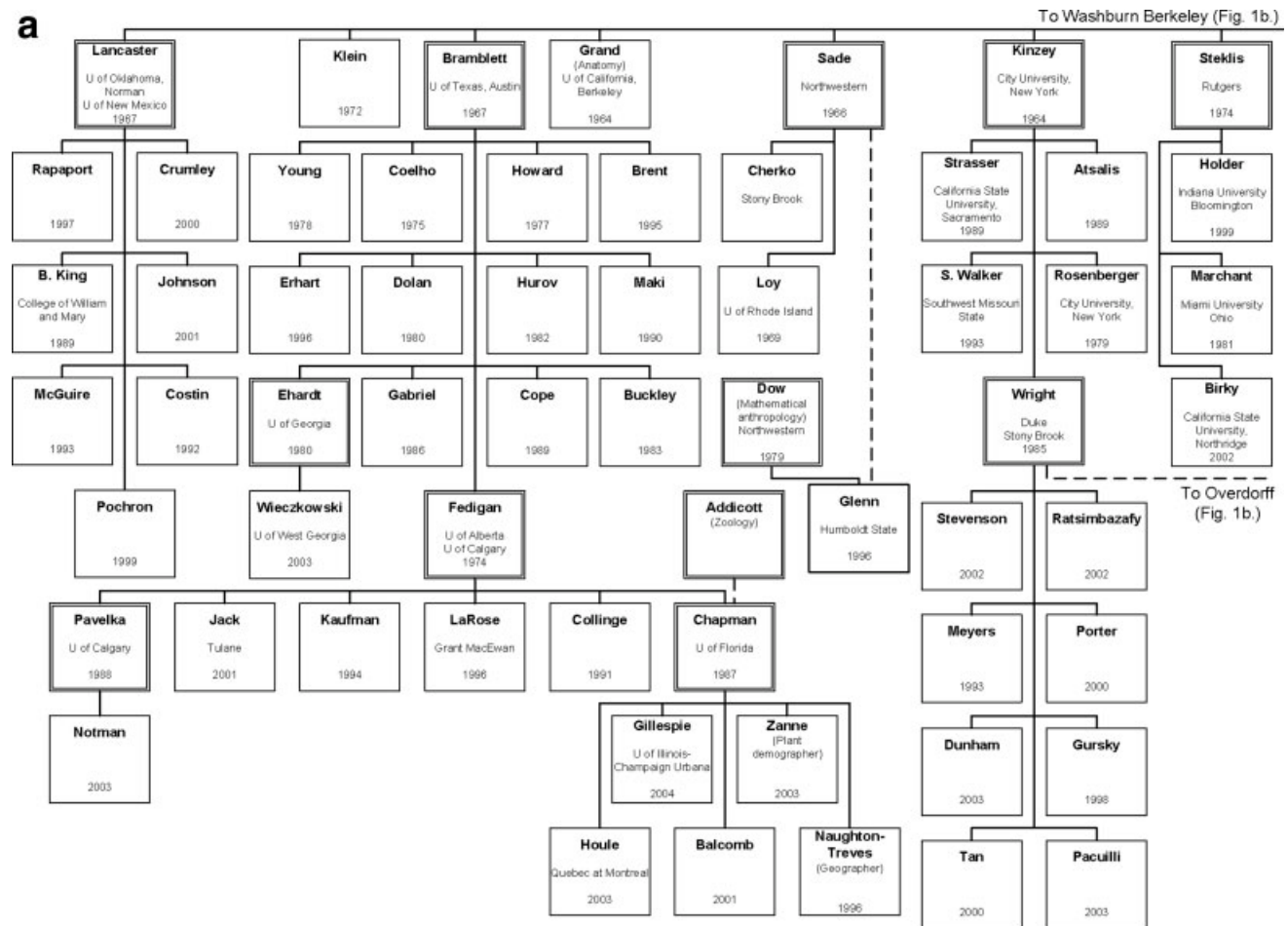
In addition, early in the process we made two decisions that perhaps can be improved upon in the future. First, we only included first initials to those with duplicate last names as we did not foresee that the genealogy would grow to the size it is today. In hindsight, including first initials would have been better, but to go back to

include all of the first initials would require a review of almost 10 years of data collection. When the accompanying website is completed, (<http://arts.wustl.edu/~eakelley/index.html>), we will include first and middle name initials as they are provided. Second, only those who have completed their Ph.D. are included in the genealogy. Unfortunately, this criterion also excludes several students of American-based primatologists who have obtained advanced degrees that are not Ph.D.s from primate habitat countries. As more American-based professors mentor students from primate habitat countries, it is likely that these students will have a major impact on the future direction of American field primatology. We therefore encourage others to incorporate this component into the genealogy in the future.

Data have been collected through three main sources. First, surveys were e-mailed to those whose names were listed in the 2004 and 2005 directories of the American Association of Anthropology (AAA), the International Directory of Primatology (IDP) and through Internet sources such as Google and university websites. Consultation of all four databases was necessary since none of the databases are all-inclusive and a majority of the listed researchers in IDP are either currently students and/or are not based at an American university. One hundred and twelve researchers responded to these surveys. Second, library research was conducted through sources that included edited volumes of articles, published obituaries, biographies, autobiographies, and the Comprehensive Dissertation Index database. Third, verbal information was collected throughout the study. Much of these data were collected at the following national meetings: the April 2004 American Association of Physical Anthropology meetings in Tampa, Florida, the October 2004 Midwest Primate Interest Group meetings in Champaign-Urbana, Illinois, and the April 2005 American Association of Physical Anthropology meetings in Milwaukee, Wisconsin.

Since field primatologists do not always receive their training from other field primatologists, a system of standardized guidelines was created to determine who should be included in this genealogy. The guidelines were as follows: 1) Every field primatologist is connected to his (or her) major advisor(s) by a solid line regardless of whether another mentor has been more influential to that person's career; 2) the students of a major advisor whose academic focus is outside of field primatology is included in the genealogy only if he (or she) has been the major advisor for at least one student who is a field primatologist; 3) since this genealogy is restricted to the growth of US American field primatology, field primatologists who have neither worked in a permanent position at a US American university nor obtained their degree from a US American university are not necessarily included in the genealogy. All of the statistical analyses in this paper include only researchers who are field primatologists. Research on the genealogy was completed in September 2005.

Lineages have been graphically displayed using Microsoft Visio. The names of professors who have been major advisors to one or more former doctoral students are represented by double-lined boxes; all others have single-lined boxes around their names. Within all of the completed boxes are the names of the researchers, the academic institution(s) where they are or have been major advisors, and the year(s) when they received their Ph.D. If the researcher is not a field primatologist, the aca-



demographic subdiscipline is also listed. Dotted lines have been used to connect students to a second major advisor when applicable. In general, there is no substantive difference between a dotted line and a connected line. However, there are a few exceptions when dotted lines have been used to connect influential but informal secondary advisors. For example, the dotted line between Paul Simonds and Sherwood Washburn has been made to acknowledge Washburn's advisory presence on Paul Simonds' Ph.D. committee. In this case, the historical interest of this link merits recognition (see Discussion).

RESULTS

As of September 2005, 672 researchers and 239 affiliated universities, organizations, and institutions are recorded in the genealogy. Of the 672 researchers, 538 of them are field primatologists. The lineage that consists of Sherwood Washburn's students is the largest; 60.6% ($n = 326$) of the recorded field primatologists are linked to this lineage (Fig. 1a-j).

The breadth of the Hooton/Washburn lineage has been shaped by the students of Sherwood Washburn, as Washburn had a substantial number of students graduate with doctoral degrees in field primatology ($n = 17$). However, many professors of American universities since

Washburn have also been major advisors for a comparable number of students in this subfield. These professors are: Robert Sussman ($n = 21$; Fig. 1e), Phyllis (Jay) Dolhinow ($n = 19$; Fig. 1c), Peter Rodman ($n = 18$; Fig. 1c), Alison Richard ($n = 17$; Fig. 1k), and Paul Simonds ($n = 16$; Fig. 1d). All but Alison Richard (Fig. 1k,l) are linked to the Hooton/Washburn lineage.

Washburn mentored a majority of his students at the University of California at Berkeley ($n = 14$). Phyllis (Jay) Dolhinow, a former student of Washburn at the University of Chicago, later obtained a position at Berkeley and became the major advisor for 19 additional students who completed their Ph.D. as field primatologists at this university (Fig. 1c). Prior to Dolhinow's appointment, Peter Marler mentored several students in avian vocal behavior and ethology (Marler, 2006; Fig. 1m). Of these students, one of them, Thomas Struhsaker, became a field primatologist. Similarly, Thelma Rowell, a former student of Robert Hinde, worked at Berkeley during this time in the biology department and was the major advisor of Marina Cords (Fig. 1h). Most recently, Katherine Milton has been the major advisor of two students who have graduated as field primatologists through the Department of Environmental Science, Policy and Management (Fig. 1f). Thus, the combined teaching efforts of Washburn, Dolhinow, Marler, Rowell, and Milton at the

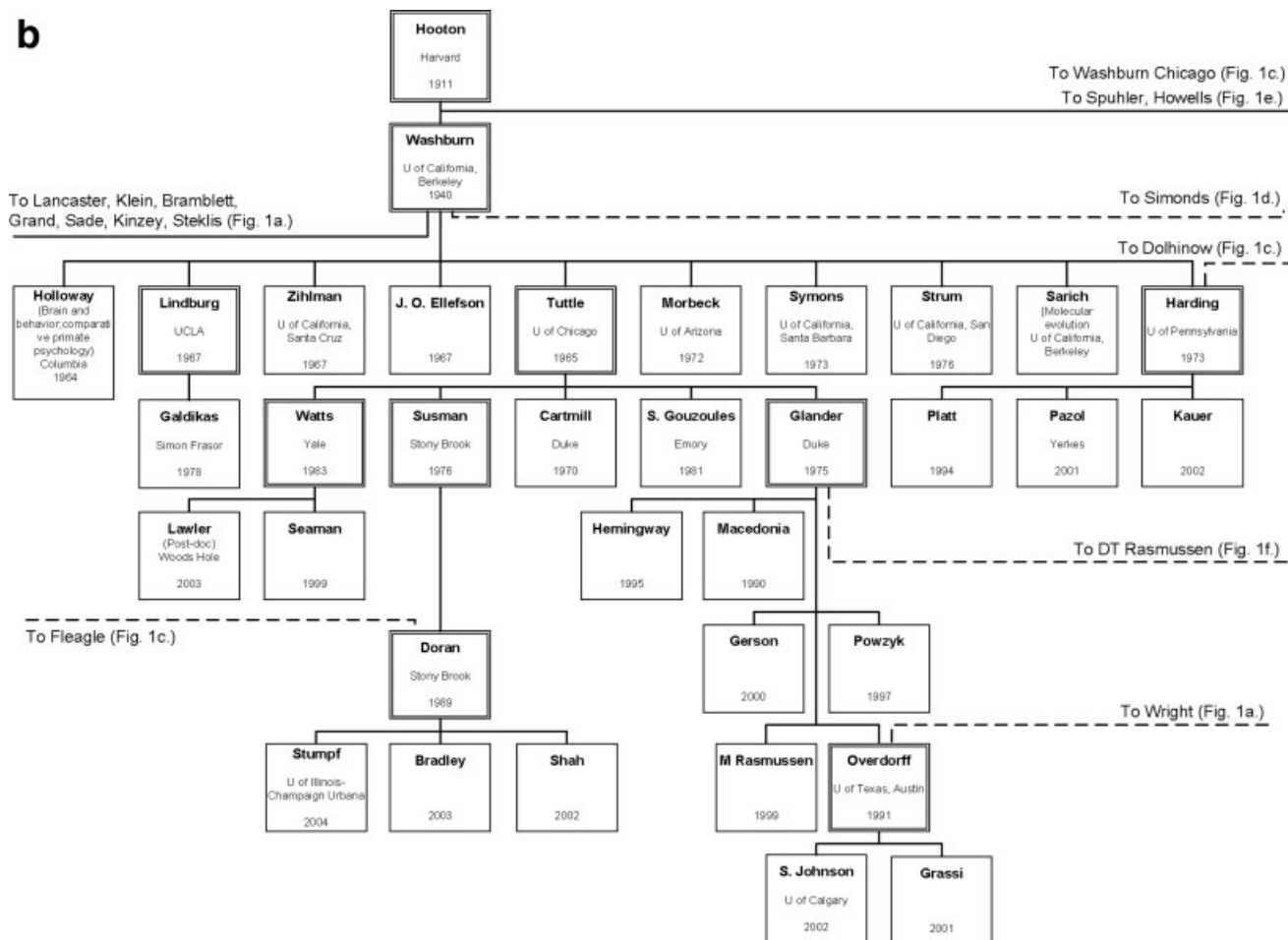


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University of California at Berkeley over the years have made this university the top school for granting doctoral degrees to students of field primatology ($n = 34$).

In addition to Berkeley, 10 other American universities have produced a large number of field primatologists over the years. These universities are: Washington University ($n = 26$), Duke University ($n = 23$), Yale University ($n = 22$), Harvard University ($n = 21$), University of California at Davis ($n = 21$), Stony Brook University ($n = 19$), University of Wisconsin ($n = 17$), University of Oregon ($n = 16$), University of Texas at Austin ($n = 16$), New York University ($n = 15$), and University of Chicago ($n = 15$).

Out of the 538 field primatologists included in the statistical analyses, dates on award of Ph.D. are available for 506 researchers (94.1% of the data). These data have been categorized into decade-long intervals to examine graduation trends.

Among American universities, the University of California at Berkeley was the top-ranked school for producing field primatologists during the 1965–1974 decade with a graduation record of 14 students. By the following decade, the American university that produced the most field primatologists was the University of California at Davis, where eight students of Peter Rodman graduated during this time (Fig. 1c). By the 1985–1994 decade, Yale became the top school in the promotion of field primatology in

America. During this decade, 10 doctoral students in field primatology graduated from Yale under the guidance of Alison Richard (Fig. 1k). Consequently, it is only in this most recent decade (1995–2005) that multiple universities have graduated 10 or more primatologists through several advisors at a single university. The top universities for the graduation of field primatologists during this decade are: Washington University ($n = 18$) under Jane-Phillips-Conroy, Tab Rasmussen, and Robert Sussman (Fig. 1e,f,l); Stony Brook University ($n = 17$) under Diane Doran, John Fleagle, Charles Janson, and Patricia Wright (Fig. 1a–c,n); and Duke University ($n = 11$) under Ken Glander and Carel Van Schaik (Fig. 1b,o).

Data categorized into 10-year intervals also reveal that field primatology has been steadily growing since the mid-1960s. From the mid-1960s through the mid-1970s, the number of field primatologists who graduated with doctoral degrees was 43 more than the previous decade ($n = 13$ from 1955 to 1964; $n = 56$ from 1965 to 1974). From the mid-1970s through the mid-1980s, the number of primatologists who graduated with doctoral degrees was 40 more than the aforementioned decade ($n = 56$ from 1965 to 1974; $n = 96$ from 1975 to 1984). From the mid-1980s through the mid-1990s, the number of primatologists who completed doctoral degrees was 22 more than the aforementioned decade ($n = 96$ from 1975 to 1984; $n = 118$ from 1985 to 1994). Yet the most precipitous growth in

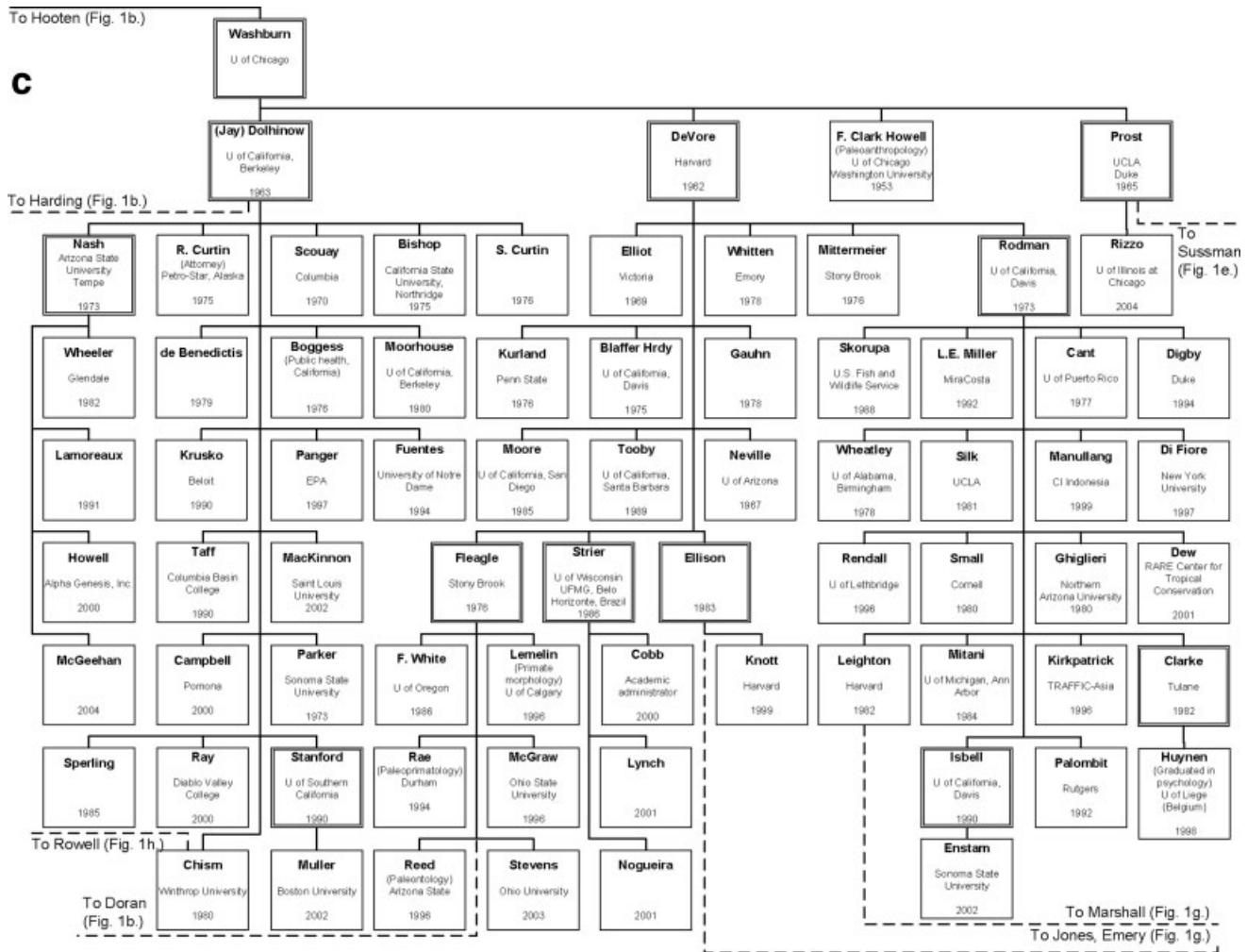


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the number of doctoral students in primatology has occurred between this decade and the previous one; the number of new graduates has increased by 97 students ($n = 118$ from 1985 to 1994; $n = 215$ from 1995 to 2005). Out of the 215 students who have graduated between 1995 and 2005, no less than 122 of these former students now hold positions with an institution.

DISCUSSION

As is clearly depicted in the genealogy, Washburn's contribution to field primatology has been immense. Washburn had a focused interest in primates early in his academic career, which was exceptional for the 1930s. Indeed, when Washburn completed his dissertation in 1940, it was only the second American dissertation to have been written on the topic of nonhuman primates (Gilmore, 1981). While Washburn's dissertation was a morphological study titled *A Preliminary Metrical Study on the Skeleton of Langurs and Macaques*, Washburn was also interested in primate behavior. In 1937, Washburn was a member of the "Asian Expedition" (see later). In 1955, Washburn stated his interest in conducting field research on primate behavior during the Pan-Africa Congress (Zihlman, 2001). Soon thereafter, Wash-

burn encouraged several of his students, such as Phyllis (Jay) Dolhinow, Irvan DeVore, and John O. Ellefson, to conduct ecological field studies on nonhuman primates for their doctoral dissertations (Gilmore, 1981; Sussman, 1997; Zihlman, 2001).

Washburn has not only been described as "possibly the single most influential person in the promotion of primate studies in American Anthropology" (Gilmore, 1981); he has also been called "the twentieth century's pre-eminent North American physical anthropologist" (Tuttle, 2000). At the time of Washburn's death in April, 2000, many journals and major newspapers published obituaries commemorating his life (e.g. *American Anthropologist*, *American Journal of Physical Anthropology*, *Evolutionary Anthropology*, *New York Times*, and *The San Francisco Chronicle*). We must note, however, that there are a number of researchers whose contribution to field primatology is not readily apparent in the results of our genealogy because our analysis is based on the number of Ph.D. students an advisor has produced. While we encourage readers to refer to other sources for overviews on primatologists who contributed important theoretical advancements to American primatology (e.g., Gilmore, 1981; Haraway, 1989; Sussman, 1997; Fedigan and Strum, 1999; Strum and Fedigan, 2000b; Dewsbury,

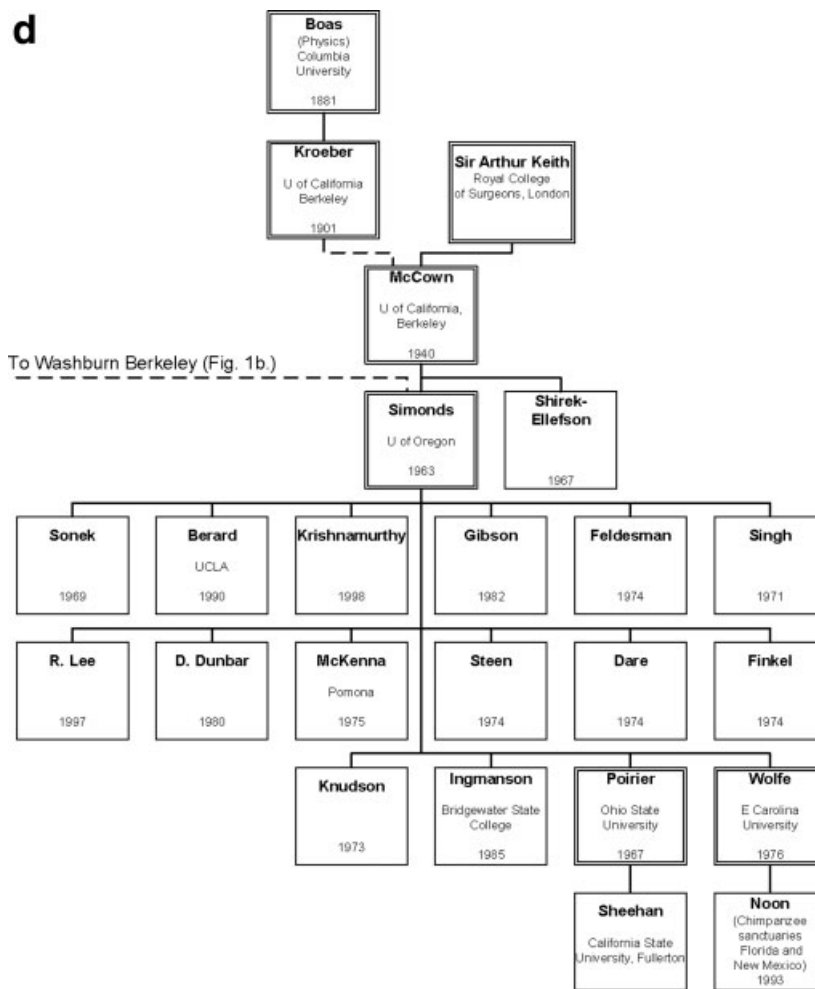


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2006; Sussman, 2007), we present here the backgrounds of other primatologists who have greatly contributed to the growth of this field.

The Hooton/Washburn lineage has its roots in the anthropology department at Harvard in the earliest decades of the 20th century, for in addition to Washburn, two other former students of Hooton have contributed to the subfield of field primatology. The first of these former students of Hooton is 1934 graduate William W. Howells (1908–2005). Even though Howells’ academic focus was human cranial morphology, one of his students at Harvard, Laurie Godfrey, now studies the morphological characteristics of extant and subfossil Lemuriformes. Godfrey has been the major advisor of eight students who have graduated with doctoral degrees in anthropology at the University of Massachusetts, Amherst. Two of these students, Helen Ball and Lyna Watson, have focused interests in field primatology (Fig. 1e).

The other former student of Hooton who later contributed to field primatology is 1946 graduate James Spuhler (1917–1992). Like Howells, Spuhler was not a field primatologist. However, one of Spuhler’s students, John Buettner-Janusch (1924–1992), later merged his training in genetics with field primatology (Maxim and Buettner-Janusch, 1963). Buettner-Janusch would later establish

the Duke Primate Center and become the major advisor of Robert Sussman. However, Sussman’s lineage also has connections to that of Hooton/Washburn. Sussman followed Jack Prost, who was a student of Washburn’s, from UCLA to Duke University, and Prost was Sussman’s official advisor when he departed to do field work for his thesis in Madagascar. While Sussman was in the field, Prost moved to University of Illinois, Chicago and Buettner-Janusch became Sussman’s advisor at Duke. Today, this lineage remains active at five generations (Fig. 1e).

In addition to the Harvard graduates, 19th century British anatomist Sir Arthur Keith (1866–1955) is also loosely connected to the origins of the Hooton/Washburn lineage (Fig. 1d). Although Sir Arthur Keith’s primary study was in primate anatomy, Sir Arthur Keith did conduct brief behavioral ecology studies on gibbons in Siam in the late 1800s (Sheeran, 1997). Sir Arthur Keith’s legacy has continued in the United States through his former student, Theodore McCown (1908–1969). McCown’s joint major advisors were Sir Arthur Keith and the eminent Alfred Kroeber (1876–1960), former student of Frans Boas (1858–1942). After he completed his PhD, McCown stayed at the University of California at Berkeley and became the first professor of physical anthropology at this university (Spencer, 1981). In the late 1950s,

To Hooten (Fig. 1b)

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To Prost (Fig. 1c)

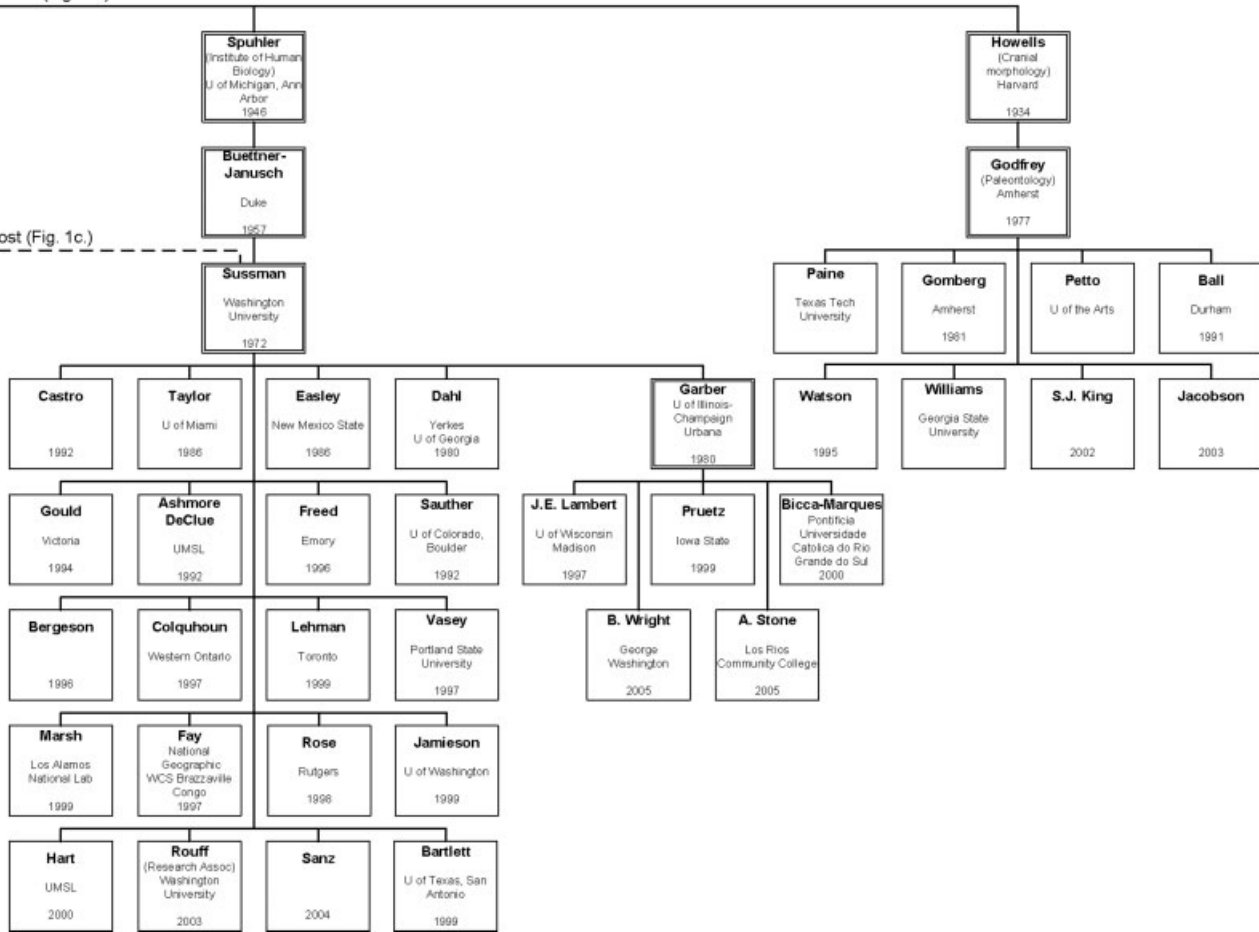


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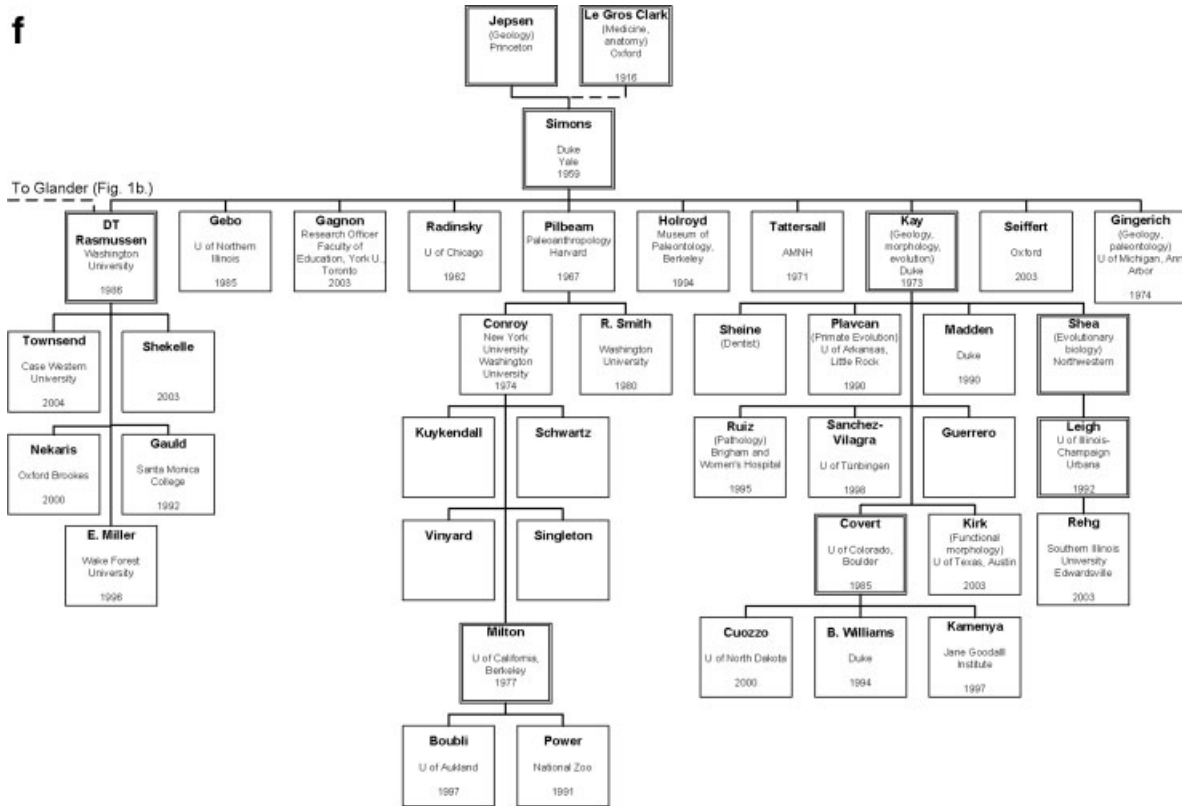
Washburn joined the department as the second physical anthropologist at Berkeley (Marks, 2000). During this period of overlap, Paul Simonds entered the anthropology department as a graduate student. McCown was Simonds' major advisor, but Washburn became the second and only other anthropologist on Simonds' PhD committee (Simonds, personal communication). Since McCown's advisory contribution to field primatology is not fully understood (Spencer, 1981), Simonds' connection to Washburn provides some historical insight.

What is remarkable about the Hooten/Washburn lineage is its consistency in maintaining an anthropological focus. Divergences from field primatology within this lineage most commonly lead to anatomical and paleoanthropological interests rather than psychological or purely zoological interests. These shifts within the lineage from behavioral field primatology to anatomy and paleoanthropology do not reflect a movement away from Washburn's influence but rather a rebound to his first focused interest in primate anatomy and his ongoing interest in human origins (Washburn and Jay, 1968; Spencer, 1981). Conversely, some members of this lineage have recently become interconnected with primatologists who have received training from abroad in fields other than anthropology. Interestingly, the largest of these links has occurred through co-advisories among Harvard professors. Among these Harvard co-advisors,

only one scientist is traced to a lineage other than that of Hooten/Washburn. This is Richard Wrangham, who was a student of the British zoologist/psychologist, Robert Hinde (Fig. 1g,h).

Hinde received his education in zoology at the University of Oxford. While his primary advisor was the ornithologist David Lack (1910–1973), Hinde was profoundly influenced by the Nobel Laureate Nikolaas Tinbergen (1907–1988) (Hinde, personal communication). Hinde's contribution to primatology began not long after his graduate school training in the early 1950s. During this time, children's hospitals in London restricted parental visiting hours due to concerns that the prolonged visits would bring stress to the sick children. In an effort to test this assumption, London psychoanalyst John Bowlby (1907–1990) asked Hinde to set up a colony of Rhesus Macaques in order to study the effects of mother–infant separation (Hinde, personal communication). It was not long thereafter that Louis Leakey asked Hinde to supervise Jane Goodall and Dian Fossey (1932–1985) in their great ape research. Since that time, Hinde has continued to mentor a plethora of students within the department of zoology at the University of Cambridge, and many of these students have focused their interests on various aspects of field primatology. Hinde's contribution to primatology as an academic advisor is both immense and diffuse. Many of his students

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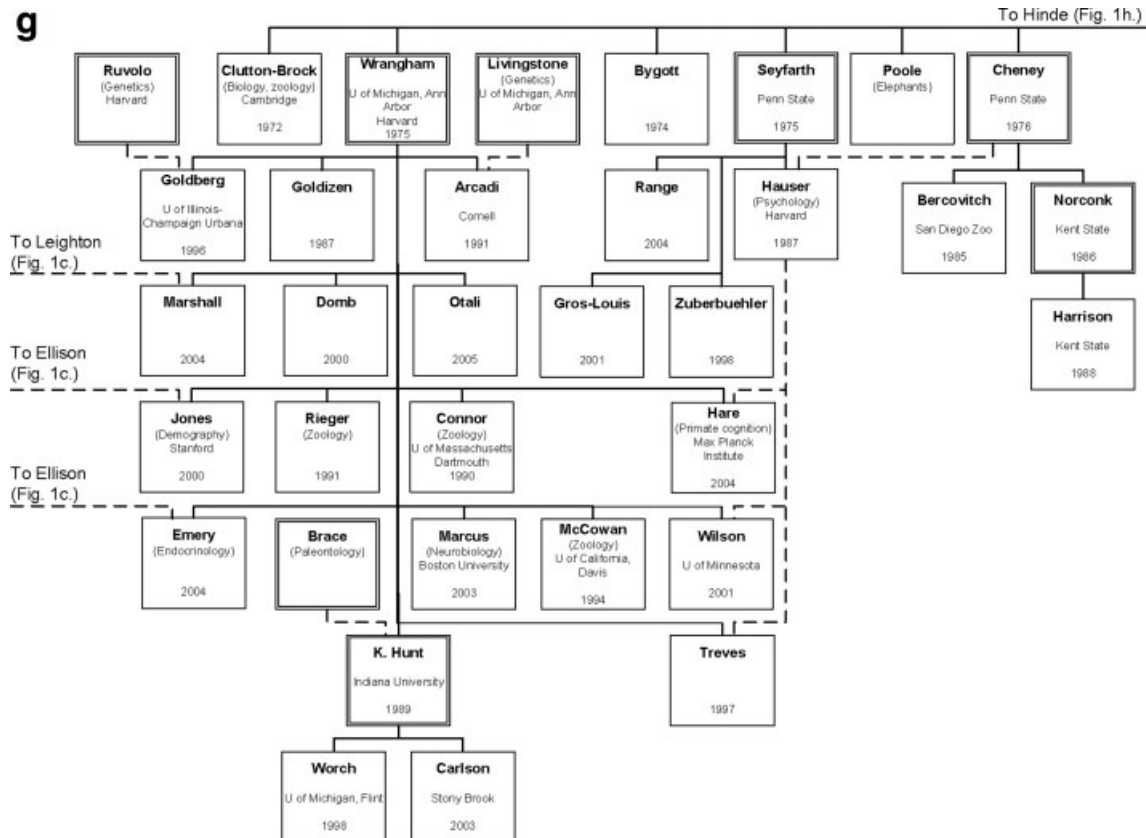


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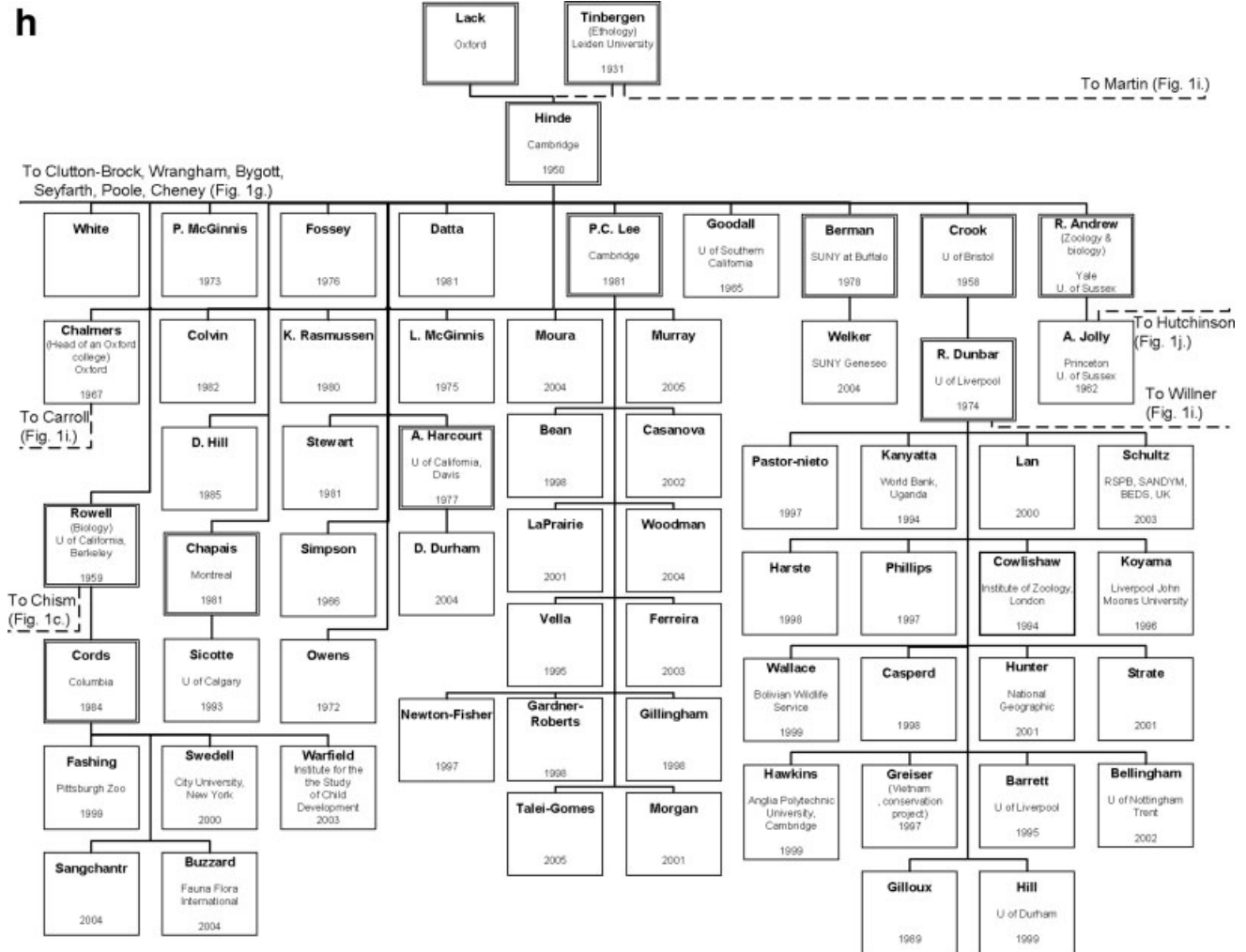


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are some of the most recognized names both within the field of primatology and within related subfields such as conservation, biology, ecology, psychology, and zoology. Within anthropology, many of his former students were also influenced by Louis Leakey (1903–1972). While Leakey's influence on Jane Goodall and Dian Fossey are well-known, two of Hinde's former students were also once research assistants at Leakey's seminal African field sites: Alexander Harcourt was a field assistant at Karisoke Research Center, and Richard Wrangham was a field assistant at Gombe National Park.

In addition, the lineage of Robert Martin is loosely connected to that of Robert Hinde through Tinbergen (Fig. 1h,i). Martin worked on his thesis research for two years with Nikolass Tinbergen at the Max Planck Institute in Germany but received his Ph.D. at Oxford in 1967 with Konrad Lorenz (1903–1989) as his official advisor. For his thesis, Martin studied tree shrews thinking that they might be a good model for ancestral primates (Martin, personal communication). However, finding that they were not a good model for ancestral primates, he then did post-doctoral research on mouse lemurs (Charles-Dominique and Martin, 1972) with French primatologist Jean Jacques Petter (1927–2002) as his sponsor. Over the years, Martin has advised over 30 Ph.D.s

at both the University College of London and the University of Zurich. Most recently, Martin is Provost at the Field Museum and a member of the Committee on Evolutionary Biology at the University of Chicago. Although his students have been trained overseas, several of them have obtained positions at American universities.

Last, it is of note that the lineage of the well-known zoologist Evelyn Hutchinson (1903–1991) is also loosely linked to Robert Hinde through the link between Richard Andrew and Alison Jolly (Fig. 1h,j). Jolly's major advisor was the then recent zoology graduate R. Andrew. However, Jolly also worked closely with G.E. Hutchinson, who she remembers as once stating that ecology was "the study of the universe" (Jolly, 2000). Jolly was inspired by Hutchinson, and although her Ph.D. work was a behavioral and morphological study on John Beuttner-Janusch's captive prosimian collection, Jolly went to study lemurs in Madagascar immediately thereafter (Jolly, 2000). Jolly was the first to conduct a long-term study on Malagasy primates, and one of the first focused female primatologists. She continues to be an active scholar, and her decades of dedication to the study of *Lemur catta* at Berenty has greatly contributed to theoretical advancements in interpreting lemurid behavior. In addition, although she has never been in a position

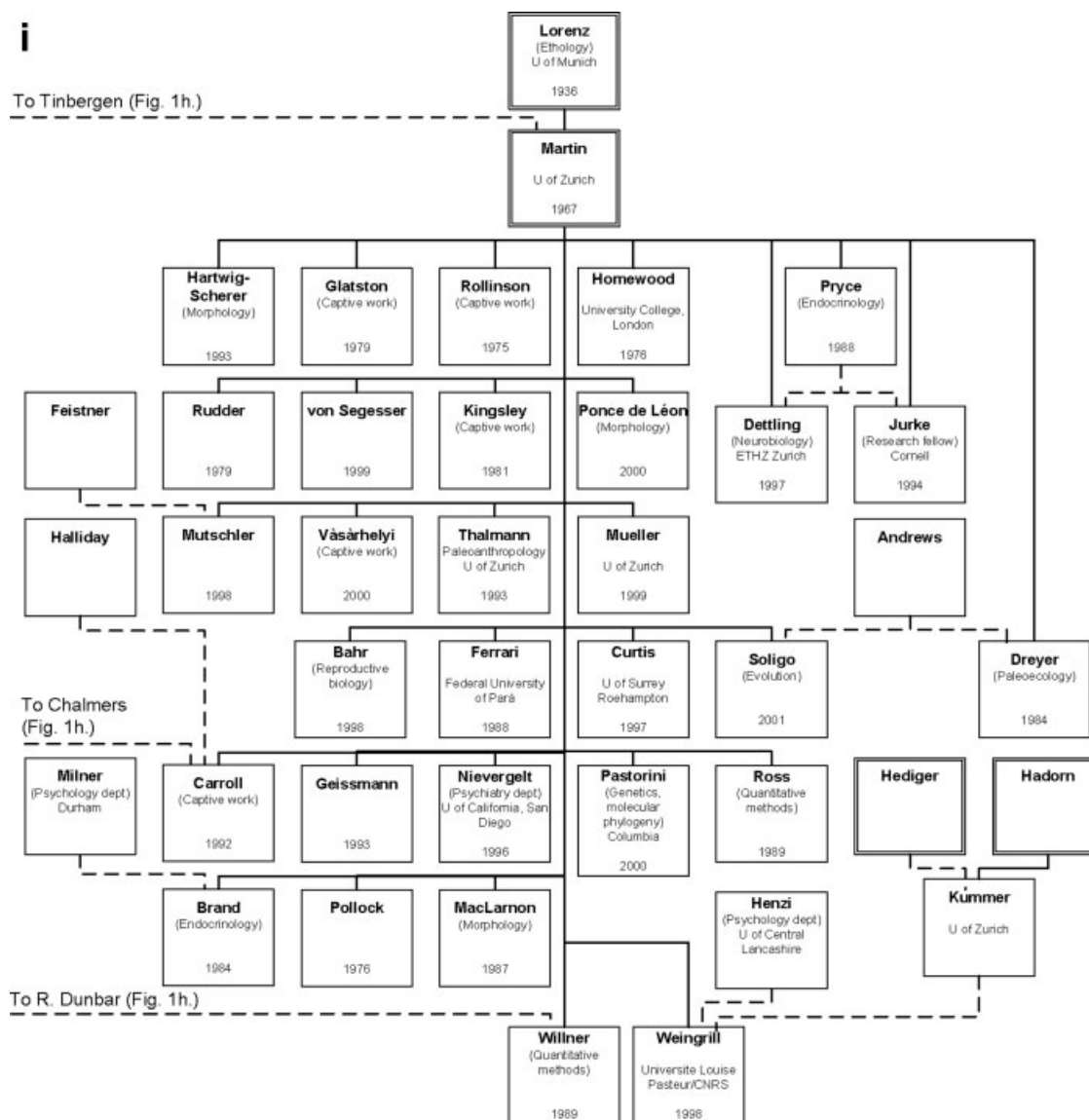


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where she could be a student's major advisor, she has aided and encouraged numerous students to conduct their field research at Berenty and elsewhere. It is likely that numerous primatologists credit her for launching their careers.

Clarence Raymond Carpenter, the first true field primatologist, received his Ph.D. in 1932 at Stanford University under the direction of Calvin Perry Stone (1892–1954) in psychology and ornithology (Haraway, 1989). Although Carpenter does not have a direct genealogical link to the Hooton/Washburn lineage, Carpenter is connected to this lineage through research. First, Carpenter shares a field research link with Sir Arthur Keith as Carpenter was the second person to study the behavior and ecology of gibbons in the wild (Carpenter, 1940; Gorzitze, 1997). Second, in 1937, Hooton appointed Carpenter as a research associate at Harvard to collect behavioral data on a multidisciplinary expedition to study gibbons in Thailand known as the "Asian Expedition." As a research associate, Carpenter assisted Washburn in his

primate studies on this project (Scott 1938; Browman, personal communication).

During his academic career, Carpenter was a co-adviser on the Ph.D. committee of Norris Durham at Pennsylvania State (Fig. 1p). The only other committee he chaired while a professor at Pennsylvania State was for Geza Teleki's master's thesis on chimpanzee predatory behavior at Gombe National Park (Fultz, 2005). Although Carpenter's advisory impact on the future of primatology is limited, Carpenter's research impact continues to be immense. Carpenter's research continues through primatological studies at two of his former field sites: Barro Colorado Island and Cayo Santiago. Within the last 17 years, there have been at least 16 publications on primate studies from Barro Colorado Island and 75 publications on primate studies from Cayo Santiago Island (Web of Science, 2005).

A second American lineage that is not directly connected to Hooton/Washburn is that of John Thompson Emlen Jr. (1908–1997) (Fig. 1q). Although Emlen

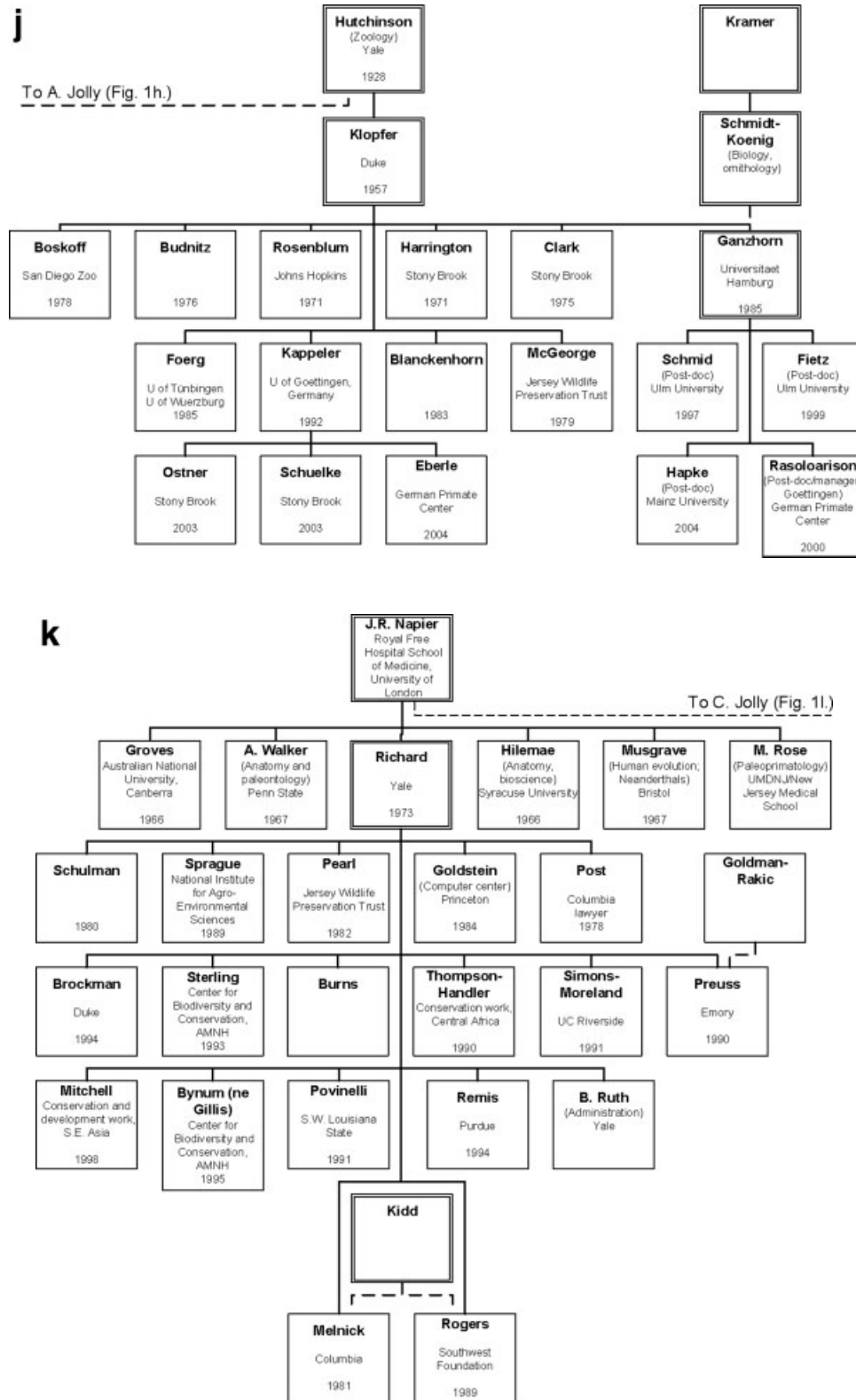


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received his Ph.D. in 1934 under ornithologist Arthur Allen, Emlen's zoological interests included primatology. While Emlen's accomplishments are distinguished in their own right, three of his students have had excep-

tional influence on the growth and transformation of field primatology. One of these students is Charles Southwick. After Carpenter, Southwick was the second researcher to study howler monkeys on Barro Colorado

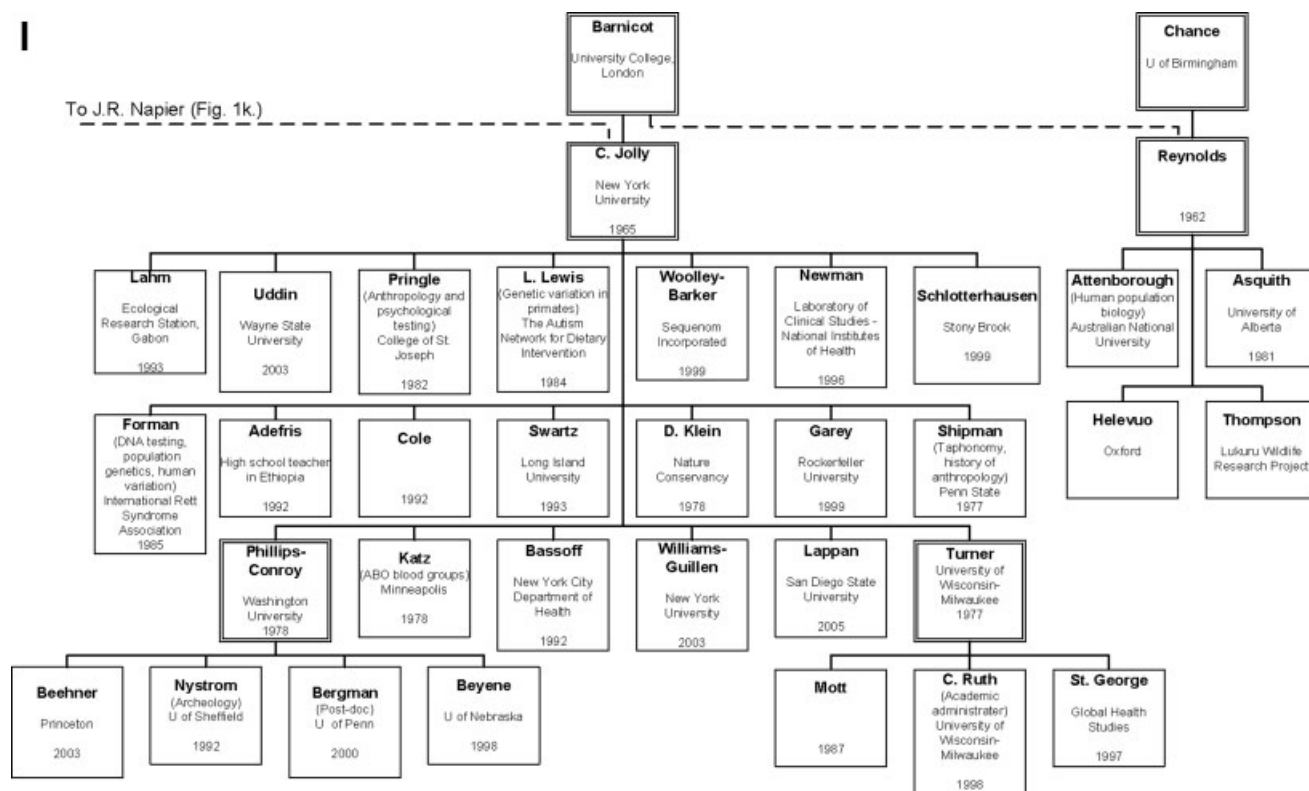


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(Southwick, 2005). Southwick is responsible for the continued growth of this lineage, as he has been a major advisor to over 20 graduate students; six of these students have become primatologists. A second former graduate student of Emlen is George Schaller. In 1959, Schaller accompanied Emlen to Africa to determine whether it would be possible to conduct a study on mountain gorillas. The trip proved to be fruitful as Schaller became the first primatologist to conduct a detailed study on any wild ape (Lanyon et al., 2000; Sussman, 2007). Schaller's contribution as a naturalist in general is immense to scientists and the public alike. A third notable researcher who was advised by Emlen is Gordon Stephenson. With Stephenson, Emlen traveled to Japan to supervise Stephenson's dissertation study on Japanese macaques (Lanyon et al., 2000). During this trip to Japan, Emlen was approached by Professor Syunzo Kawamura, who asked him whether he would like to take a recently fissioned subgroup of Stephenson's study population back to the United States as a gift (Emlen, 1991). Emlen accepted the offer, and these primates were first transported to Ecinal, Texas, (which is just north of Laredo), and were later relocated further north to Dilley, Texas (Pavelka, 1993). Known then as the Arashiyama West group, this group has been the dissertation subject that has helped launch the careers of many notable primatologists. Many of these primatologists are Canadians who received their training from Washburn's descendants.

A third American lineage that is not connected to Hooton/Washburn is that of Stuart Altmann and Jeanne Altmann (Fig. 1m). While there is no formal advisory connection between the two primatologists, J. Altmann was

a research associate of S. Altmann at three different institutions before she obtained her doctorate from the Committee on Human Development at the University of Chicago (S. Altmann, personal communication). Prior to her doctorate, J. Altmann obtained a bachelors degree, masters degree, and teaching degree in mathematics. J. Altmann's cross disciplinary education is evident in her work, which is best exemplified in her 1974 (Altmann, 1974) paper in *Behaviour* on the standardization of sampling methods. Although quantitative sampling methods were first encouraged and emphasized by British researchers in the late 1960s, (e.g. Hall, 1965; Crook and Aldrich-Blake, 1968; Chivers, 1969; Aldrich-Blake et al., 1971), J. Altmann's summary has become a fundamental paper in both field primatology and ethology as there are no less than 1,340 publications that cite this paper as a reference (Google Scholar, 2005). The legacy of S. Altmann is also interesting. S. Altmann was E.O. Wilson's first graduate student. Altmann graduated well before Wilson's influential book *Sociobiology: The New Synthesis* (1975) was published. However, the direct connection between sociobiology and primatology is notable since evolutionary biology has become an influential component of physical anthropology ever since the teachings of Sherwood Washburn (Marks, 2000).

Loosely connected to the Altmanns but notable in its own right is the link to Peter Marler through Thomas Struhsaker. Struhsaker began his primatological career researching vervet monkeys at Amboseli for his Ph.D. thesis. The Altmanns, who were also at Amboseli during that time, were Struhsaker's daily confidants and field mentors throughout the time he spent collecting and

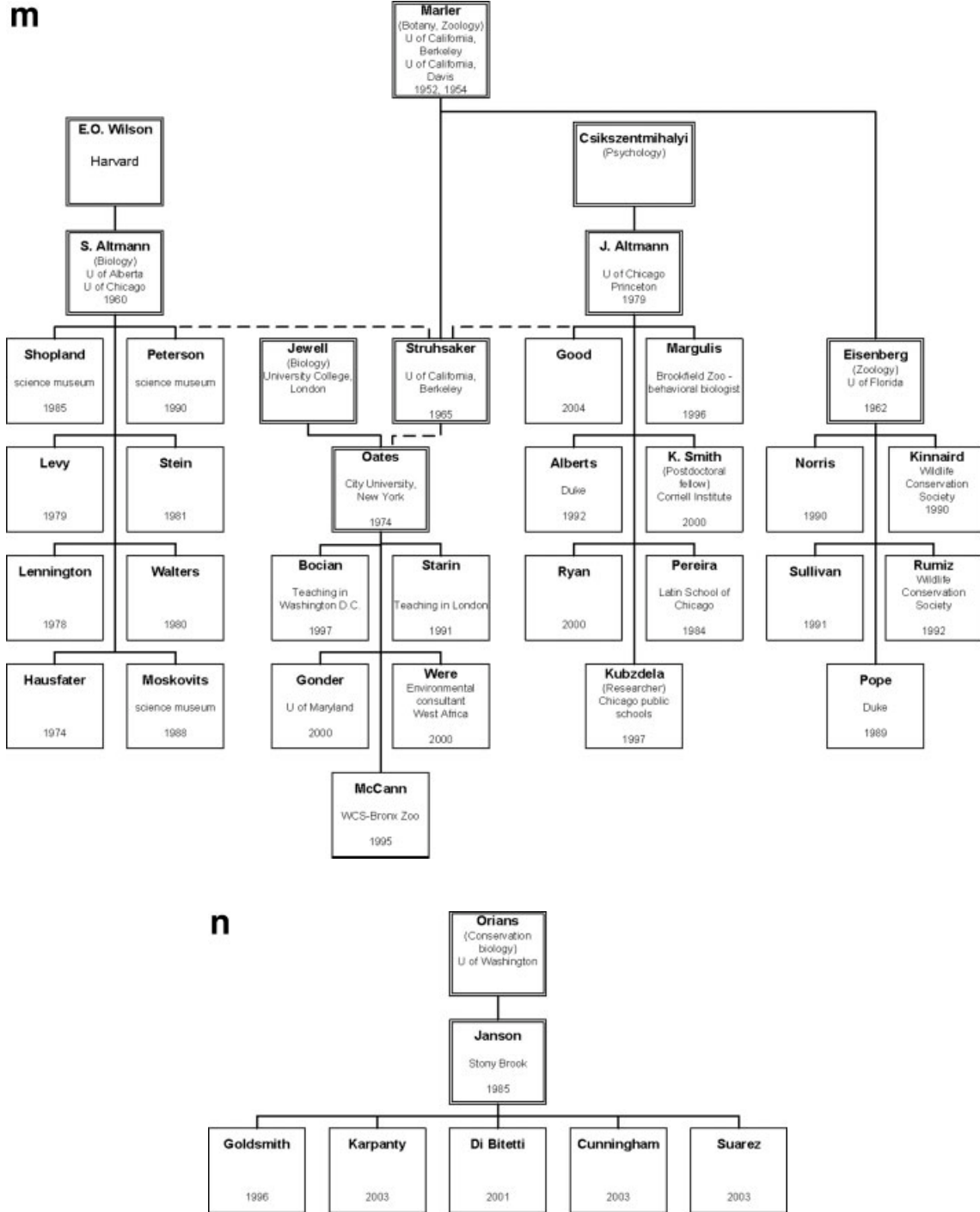


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analyzing his thesis data (Struhsaker, personal communication). Since Amboseli, Struhsaker's research has focused on African rainforest monkeys, and Struhsaker is credited as one of the first, along with Aldrich-Blake, Chalmers, Gautier-Hion, and Schenkel-Schenkel-Hulliger, to conduct detailed field research on the social behavior and ecology of arboreal African rainforest monkeys (Aldrich-Blake, 1970; Struhsaker, 1975). In addition, Struhsaker has had an avid interest in conserva-

tion since the early years of his fieldwork, and his focus on African rainforest monkeys has made him one of the world's experts on the behavioral ecology and conservation status of these taxa, notably *Ptilocolobus ssp.* Yet since Struhsaker's positions have been through research appointments both in habitat countries (e.g. Kibale Project) and through affiliations with American institutions (e.g. New York Zoological Society and Duke University), he has never been in an academic position where he

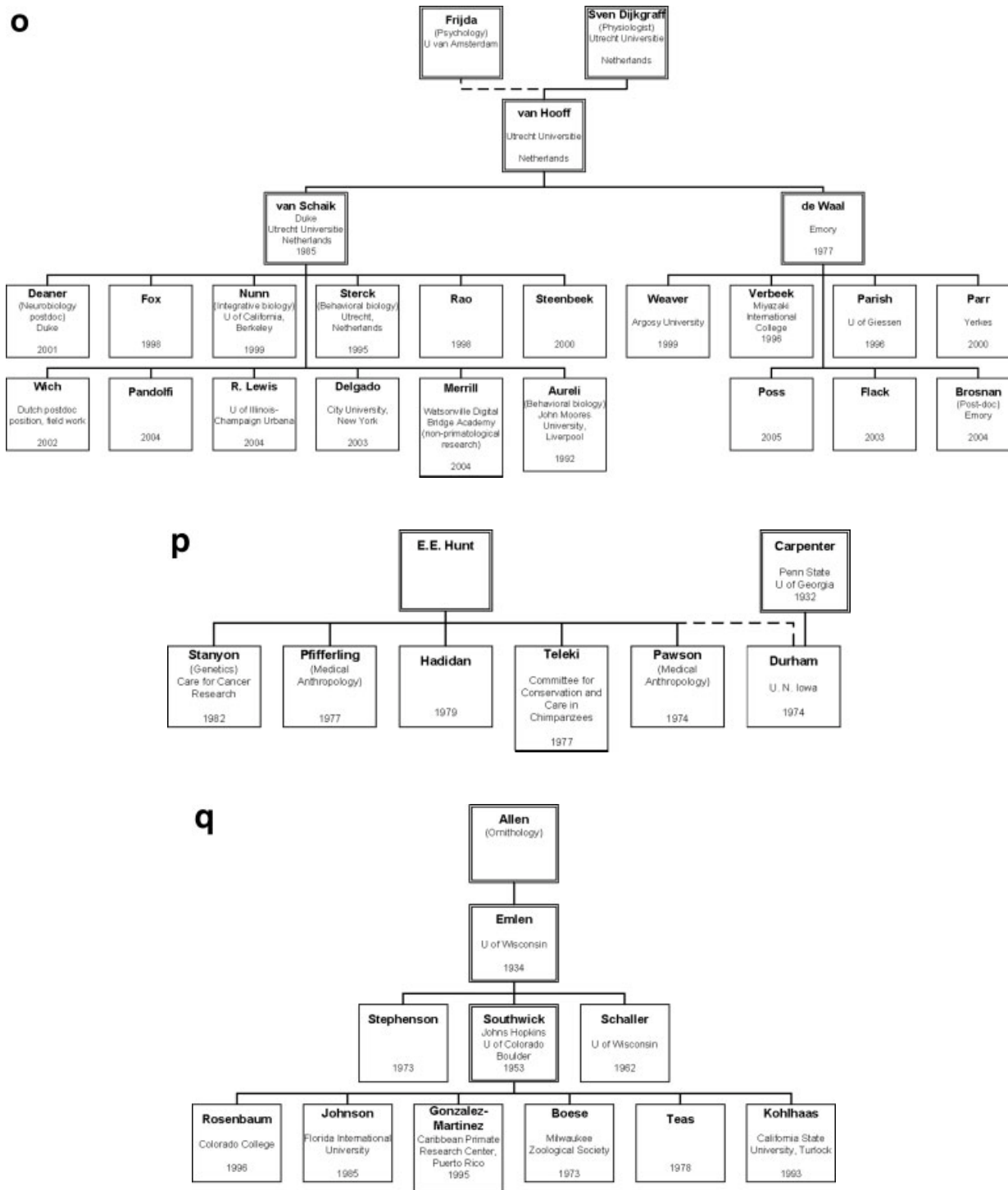


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could serve as a student's primary advisor. The one notable exception has been his relationship with John Oates. For when Oates was a graduate student collecting his thesis data on *Colobus guereza* in Uganda, Struhsaker was his field advisor in the same way the Altmanns were for Struhsaker when he was a student. Oates' career direction, which has largely focused on African rain forest primates and conservation in West Africa (but also

South India), has been similar to Struhsaker's, and like Struhsaker, Oates is one of today's experts in African forest monkeys and conservation.

Several lineages with roots from other countries have also greatly contributed to American field primatology but remain unconnected to the major lineage. One such example is the lineage derived from John Napier (1917–1987), who trained many students in primatology at the

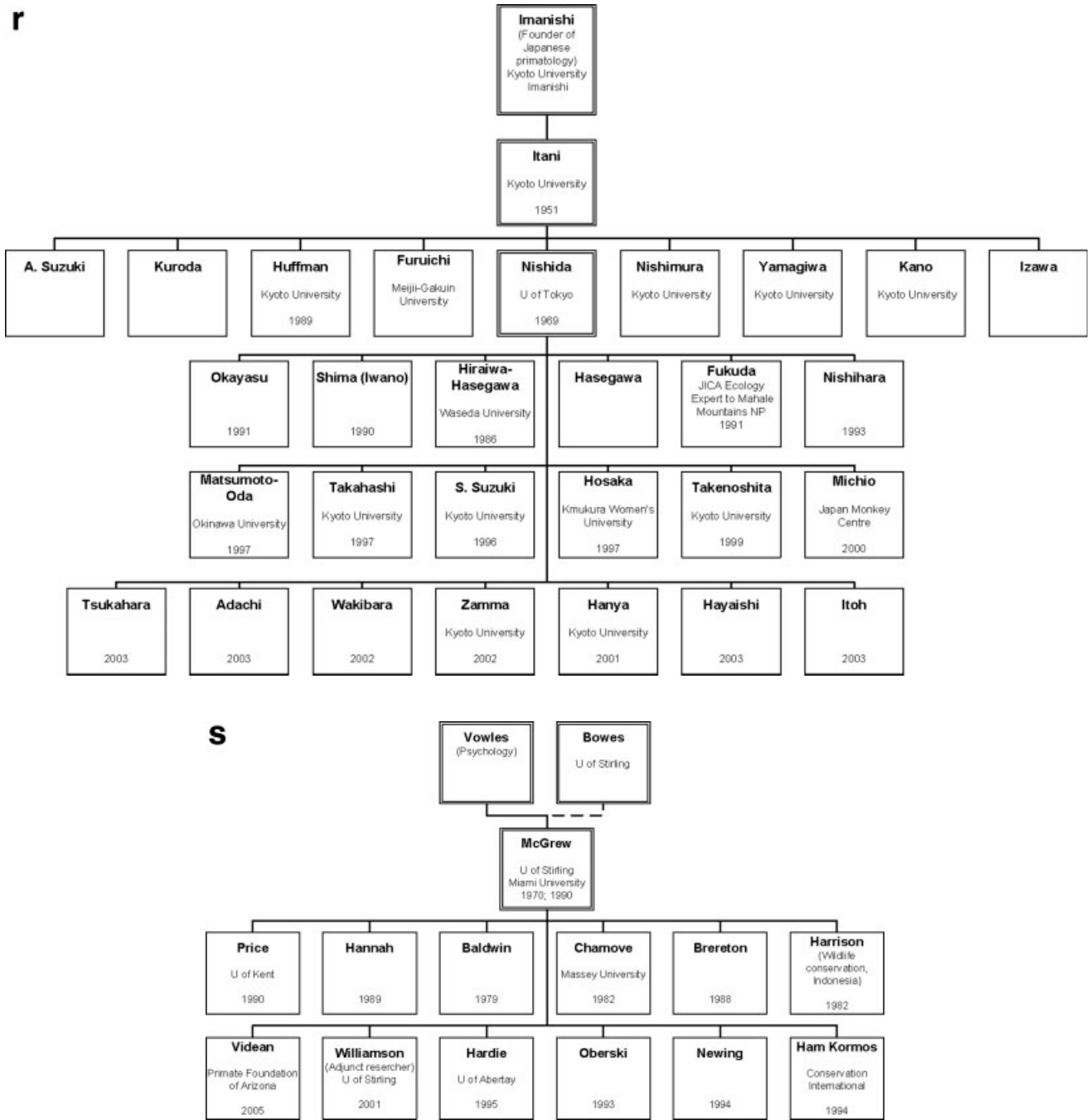


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University College of London (Fig 1k,l). Napier was trained as a medical doctor but, in the 1950s, was invited to become involved in research in African fossil hominoids by Sir W.E. Le Gros Clark (1895–1971) (Groves, 1998; C. Jolly, personal communication with J. Phillips-Conroy). Napier later became one of the world’s first researchers to specialize in the field of primatology, and he has been described in England as its founder (Groves, 1998).

Napier was the major advisor of NYU professor, Clifford Jolly. Although Napier was Jolly’s only major ad-

visor for his Ph.D., Jolly was also greatly influenced by Napier’s close colleague and pioneer of serological methods, Nigel Ashworth Barnicot (1914–1975) (C. Jolly, personal communication with J. Phillips-Conroy). Through a post-doctoral position at Barnicot’s laboratory in London, Jolly learned how to proficiently use the science of genetics to research field primatological questions (C. Jolly, personal communication with J. Phillips-Conroy). As a result, Jolly was greatly influenced by both Barnicot and Napier and has since advised a total of 20 Ph.D. students at New York Uni-

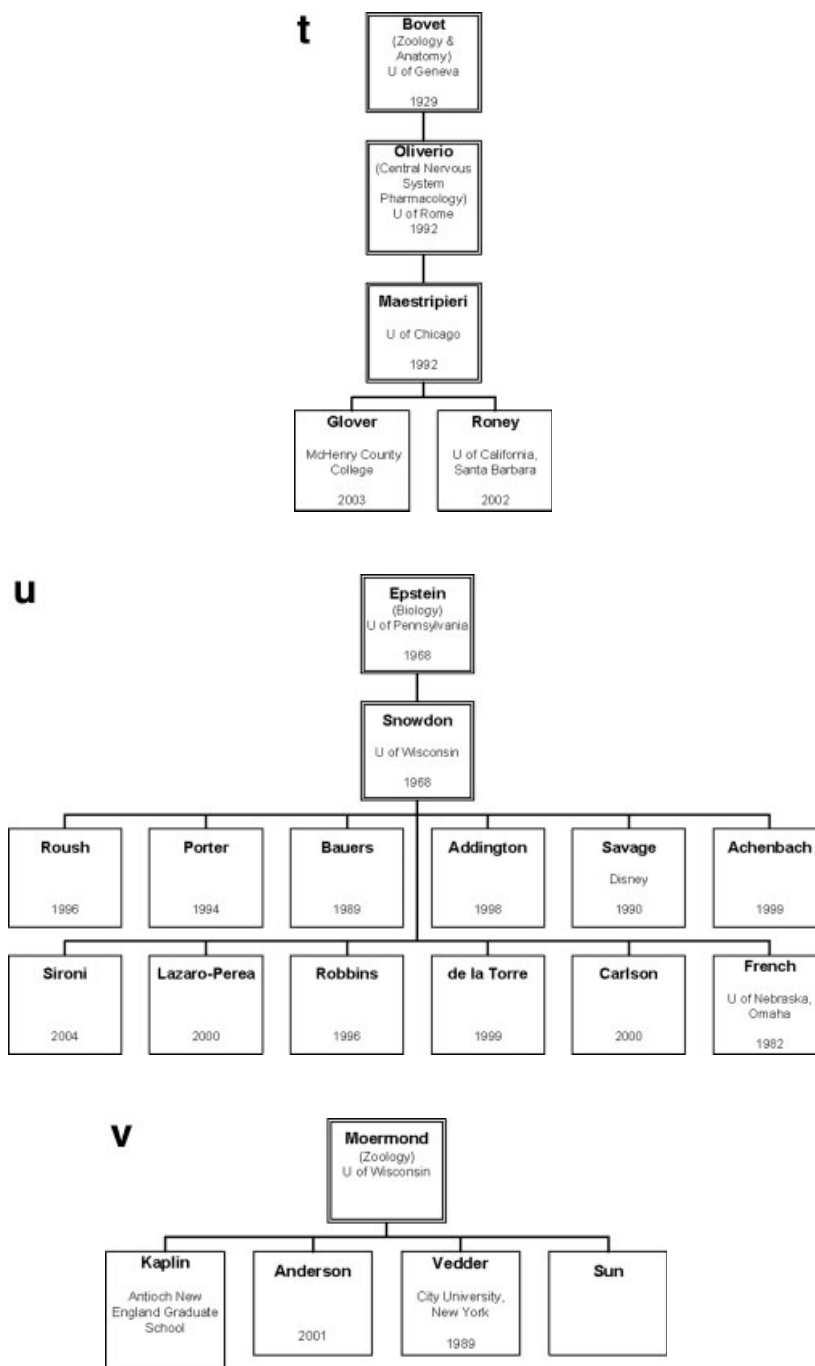


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versity in the disciplines of field primatology and genetics (Fig. 1l).

Another former student of Napier who has since been highly influential in the growth and development of field primatology is Alison Richard. Known for her research and conservation efforts in Madagascar, Richard advised 17 Ph.D.s in primatology as a professor and later provost at Yale University before she returned to England to become Vice Chancellor at the University of Cambridge. Today, many of her students remain active field primatologists (Fig. 1k).

Yet another notable lineage with roots from Europe is the Jan A.R.A.M. van Hoof lineage from Utrecht in the Netherlands (Fig. 1o). Jan van Hoof's primary advisor (promoter) was Sven Dijkgraaf, a physiologist at the Unversiteit Utrecht. However, van Hoof also had a second advisor who could support his interests in primate behavior. This second advisor was Nico Frijda, a psychologist and specialist on emotional expression (van Hoof, personal communication). Many of van Hoof's former students are now professors at universities in France and the United Kingdom. Two of his students, Frans de

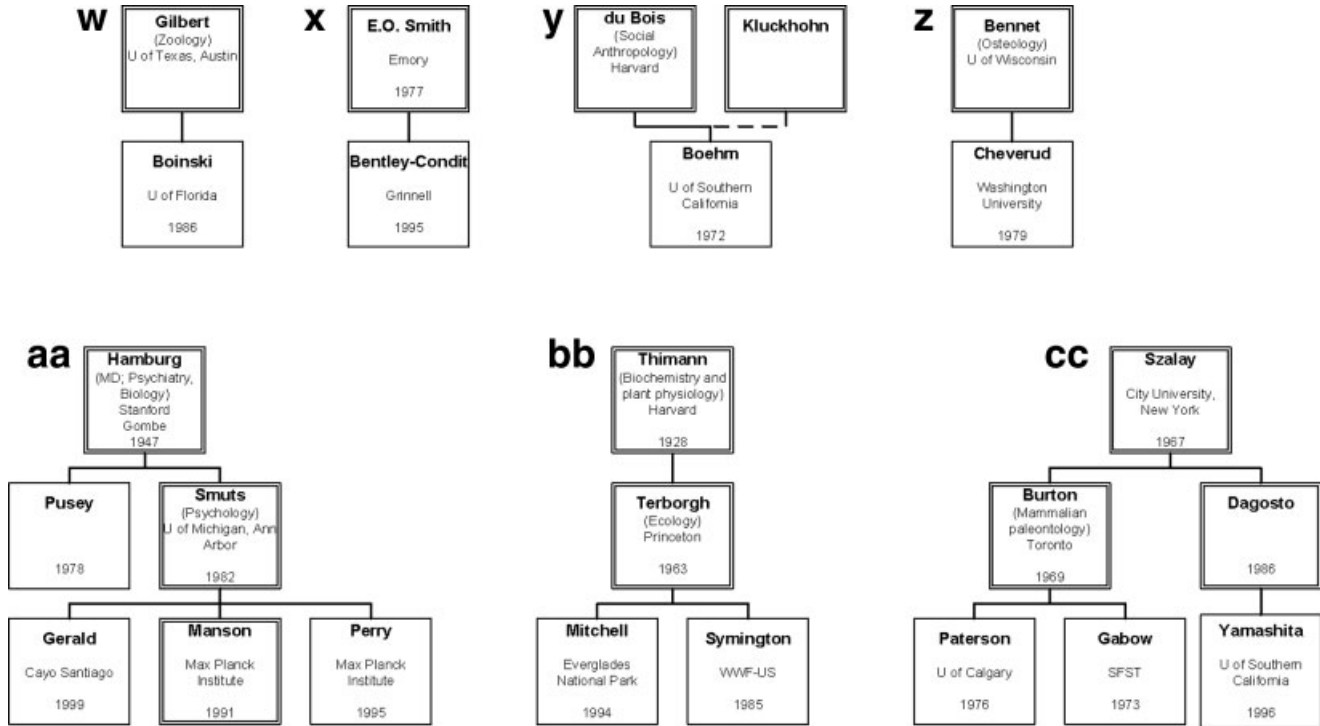


Fig. 1. Latest version of the genealogy of American field primatologists. The names of professors who have been major advisors to one or more doctoral students are represented by double-lined boxes; all others have single-lined boxes around their names. Within all of the completed boxes are the names of the researchers, the academic institution(s) where they are major advisors, and the year(s) when they received their PhD(s). If the researcher is not a field primatologist, the academic subdiscipline is also listed. Dotted lines have been used to connect students to a second major advisor when applicable. With the few exceptions noted in the text, there is no substantive difference between a dotted line and a connected line. Figs. 1a–1s are referred to in the text. Figures 1t–cc are only represented through the genealogy. We encourage others to build upon these latter lineages so that their historical context is also represented in the future. To view the genealogy online, please go to <http://artsci.wustl.edu/~eakelley/index.html>.

Waal and Carel van Schaik, have mentored students at American Universities. While most of de Waal's former students have received their primatological training in the psychology department at Emory, van Schaik has advised students in biological anthropology at both Utrecht in the Netherlands and Duke University. He is currently at University of Zurich, Switzerland.

Conversely, several eminent primatologists from Europe who have greatly contributed to American primatology have only done so through field and theoretical work. For example, Ronald Hall (1917–1965), a psychologist by training, was the first to address methods on how to statistically quantify primate field observations, which he developed for his field study on yellow baboons (Hall, 1965). In addition, Hall defined the term “major field studies” to differentiate between casual field observations and quantitative field research (Hall, 1965; Phillips-Conroy, 1997). Unfortunately, Hall died from an obscure disease he contracted from an infected vervet monkey just five years after his first publications on primates (Gartlan, 1968; Phillips-Conroy, 1997). In consequence, Hall never trained any students in primatology before his untimely death (Gartlan, 1968). Another distinguished primatologist whose contribution to American field primatology is primarily theoretical is Hans Kummer. Kummer's fieldwork on the ecology of *Hamadryas* baboons continues to be the foundation from which current studies on this species are based (Kummer, 1968; Kummer, 1997; see also Swedell, 2006). In addition, Kummer's theories on ecological ad-

aptation and the innovative field methods he used to test his theories have been respected by ethologists and primatologists worldwide since the early years of his career (Goldschmidt, 1971; Phillips-Conroy, 1997). However, although Kummer mentored a great deal of today's Swiss and German primatologists (Fedigan and Strum, 1999), Kummer never mentored a student who can be connected to American primatology. A third example is Vernon and Frances Reynolds. The Reynolds' field research at Budongo Forest in Uganda has greatly advanced comparative research on chimpanzee communities (e.g. Reynolds and Reynolds, 1965; Reynolds, 2005). In addition, V. Reynolds has mentored several students throughout his career. Yet while his students work in Australia, Canada, the Democratic Republic of Congo, and England, none of Reynolds' students ever obtained positions in the United States (V. Reynolds, personal communication).

Last, field primatologists from Japan and Canada have also greatly contributed to American field primatology. However, the histories between the links are very different. Japanese primatology is older than American primatology and has developed in relative independence from American influence (Imanishi, 1967). Conversely, Canadian primatology is in part an offshoot of American primatology. Several Canadian primatologists are descendants of the Hooton/Washburn lineage who have since established strong primatological programs at Canadian Universities.

Although the founder of Japanese primatology, Kinji Imanishi (1902–1992), associated with American primatologists Raymond Carpenter, Adolph Swartz, and Sherwood Washburn, Imanishi was a strong adversary of the theories of sociobiology and Social Darwinianism (Asquith, 2002). Specifically, Imanishi was most opposed to the concept of “survival of the fittest” and instead taught his students that “biological” nature was a harmonious, peaceful, three-tiered entity (Imanishi, 2002). Since Imanishi’s publications on his theories, several descendants of Imanishi’s lineage (Fig. 1h) have collaborated with American and Canadian primate field projects to produce texts such as *The Monkeys of Arashiyama* (Fedigan and Asquith, 1991), and *Great Ape Societies* (McGrew et al., 1996). The *Great Ape Societies*, also has a Scottish connection. One of the editors, William McGrew (1s), obtained a Ph.D. in anthropology at the University of Stirling. McGrew advised many students at this university before he left to obtain his current position as a professor of zoology at the University of Miami in Ohio. In addition, Japanese primatology has recently been linked genealogically to American primatology through American researcher Michael Huffman. Huffman received his Ph.D. under Itani and continues to work in Japan at Kyoto University (Fig. 1r). Most recently, Imanishi’s seminal text, *The World of Living Things*, has been translated into English by Canadian primatologist Pamela Asquith and Japanese researchers Heita Kawakatsu, Shusuke Yagi, and Hiroyuki Takasaki (Imanishi, 2002). One of the primary goals the editors had in translating this text was to encourage cross-fertilization between Western and Japanese culture (Yagi, 2002).

CONCLUSIONS AND FUTURE DIRECTIONS

American field primatology continues to grow through the proliferation of graduate students under the guidance of Sherwood Washburn’s descendants. While the Hooton/Washburn lineage is largely comprised of anthropologists, American field primatology is also becoming increasingly interconnected with related subfields such as ecology, psychology, and zoology from abroad. An acknowledged shortcoming of the genealogy is that it cannot adequately depict the contribution of dedicated field researchers who have contributed to the theoretical ideas of American field primatology but did not have many graduate students. In addition, while the genealogy is a living and growing phenomenon, we realize that some important links of the genealogy may be missing. We apologize for those that we may have missed. However, the genealogy accurately depicts the fact that every American field primatologist is a part of a closely related population that continues to mature, grow, and remain connected through the collective discoveries and ambitions of all. We hope that both established researchers and graduate students who review this genealogy will benefit from the data presented by gaining a better understanding of his (or her) academic heritage. We also hope that researchers from other countries and other subdisciplines will be inspired by this work and use this project as a model to trace their own academic lineages.

Last, while beyond the scope of this paper, we wish to conclude by addressing how the presented data can be used to advance theoretical developments in anthropology. One common interest we have heard repeatedly throughout this project is using the data obtained for the genealogy to trace ideologies across lineages and through

time. Papers such those produced by Fedigan and Strum (1999) and Strum and Fedigan (2000b) have already attempted to place shifts in primatological focus within a historical context. An inclusion of the empirical data presented in this paper could be an effective means from which to identify the nodes (names) that are associated with these shifts. In addition, it would be particularly interesting to determine whether profound changes in popular American cultural ideologies relating to human nature and hominin origins are mirrored through ideologies advocated through a single lineage, or whether there is evidence that multiple lineages are promoting the same ideologies simultaneously. The difference between the two could greatly explain how we as researchers are influenced by our environment. Most importantly, we can also use this knowledge to improve upon our interpretations of the future. For as the sage Sherwood Washburn said so many years ago, “Truth is a very restless thing. The promise of primatology lies in being animal-oriented, problem-oriented, and experimental. The less we trust our past, the more likely we are to be useful in the present” (Washburn, 1973).

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