The Legacy of the Laboratory

Psychological and Brain Sciences at Indiana University, 1888–2013

James H. Capshew
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PREFACE

Two major milestones in the history of IU Psychological and Brain Sciences—the centennial anniversary and its 125th—gave us an opportunity to celebrate our past, reflect upon why it still matters to us today, and consider how it uniquely positions us for the future.

Luckily for us we had the good fortune to enlist IU historian James Capshew in this enterprise. As an historian of science he was especially suited to the task not only for his talents and insight, but also on account of his own firsthand experience of the department and the university.

Like the department’s founding member, William Lowe Bryan, Capshew’s own history is inextricably linked to the department, the university, and the region. A Hoosier native, Capshew grew up in Bloomington and received his BA with honors in psychology at Indiana University in 1979. A student of professor of psychology Eliot Hearst (now emeritus), he collaborated with him to produce a centennial history in 1988. Now a professor in the history and philosophy of science at IU, Capshew has taken on the role of campus historian, writing a biography of legendary IU president Herman B Wells and the history of Indiana University itself.

When he first mapped out a plan to update the centennial history of our department, Capshew spoke about what it means to construct a departmental history. Such a history, he suggested, can illuminate the way diverse influences come together in a department, as well as the tensions among them: It is a place where the vast global network of an academic discipline meets up with the deeply rooted institutional and regional culture of a university campus. No doubt other strands are at play as well — the stories and interests of the faculty, staff, and students who make up the department, for example, in addition to the larger historical conditions, trends, movements, and major events of a particular era.

Also revealing is the mutual influence between department and the university. The names of some of the department’s founding members are indelibly etched into the Bloomington landscape, as in Bryan House or Lindley Hall, and provide clues to the enduring contributions members of the department have made to the university and the community. Bryan, for
instance, not only laid the groundwork for psychological science at Indiana University, but became its longest-serving president, whose 35-year term was followed by the Wells administration.

As we see how these elements combine and synthesize, it is no wonder that Capshew’s own mentor and biographical subject, President Wells, insisted that departments need to tell their stories.

We are profoundly grateful to Capshew for undertaking that project here. Through this distinctive history he has enabled us to more fully recognize and celebrate the interlocking legacies of Indiana University, the discipline of psychological and brain sciences, and of many notable and influential individuals, as they come together in this department.

William P. Hetrick,
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IU Psychological and Brain Sciences
INTRODUCTION

The Indiana University Psychological Laboratory, organized in 1888, was the first research and teaching laboratory devoted to experimental psychology in the Midwest, and the second such facility established in the United States.¹ This laboratory served as the matrix for the development of scientific psychology as an academic discipline at Indiana, and provided the seed for the current Department of Psychological and Brain Sciences. The department, like American psychology generally, has evolved considerably since that time, both intellectually and institutionally. The early general-purpose laboratory has proliferated into many specialized laboratories that pursue investigations in a variety of fields, and the department conducts a multifaceted program of research, teaching, and service activities. Despite significant changes in scale, operation, and agenda, however, laboratory research has remained the vital center of psychological and neuroscientific studies at Indiana University for well over a hundred years.

In January 1888 the original laboratory was established by William Bryan, a young philosophy professor who had been inspired to pursue the new psychology as a way of reconciling traditional philosophical and religious concerns with the increasingly powerful authority of science. In addition to an intellectual agenda, psychology provided Bryan a route for academic advancement within the university, which was entering a new era as it adapted to the demands of modern higher education. For the first few years, the psychological laboratory was as much a symbol of Bryan's commitment to the promise of science as it was a place to perform research.

Equipped with a PhD completed under G. Stanley Hall at Clark University, Bryan had turned himself into a full-fledged experimental

¹ The first American psychological laboratory was started by G. Stanley Hall at Johns Hopkins University in 1883; it lapsed for several years after Hall left for the presidency of Clark University in 1888. Chronologically, the Indiana laboratory was next, followed by several others, including Wisconsin and Pennsylvania; by 1900 there were over 40 in the U.S. Despite Penn folklore, James M. Cattell did not begin a laboratory at the University of Pennsylvania until 1889. See Philip J. Pauly, “G. Stanley Hall and His Successors: A History of the First Half Century of Psychology at Johns Hopkins,” in S.H. Hulse & B.F. Green, Jr., eds., One Hundred Years of Psychological Research in America: G. Stanley Hall and the Johns Hopkins Tradition (Baltimore: Johns Hopkins University Press, 1986), 21-51; Ernest R. Hilgard, Psychology in America: A Historical Survey (San Diego: Harcourt Brace Jovanovich, 1987), 31-34; James H. Capshaw & Eliot Hearst, "Psychology at Indiana University: From Bryan to Skinner," Psychological Record, 1980, 30, 319-342, on 319 note 1.
psychologist by the early 1890s. After his return to Indiana, Bryan transformed the laboratory into a scientific workshop dedicated to original research and the training of students. He wanted the laboratory to serve the practical needs of the university, and he stressed the role of experimental psychology in addressing educational issues—particularly scientific pedagogy. As a consequence, investigations of learning emerged as the key motif in the psychology program as it came to dominate the affairs of the Department of Philosophy, where the laboratory was located.

Through the 1890s Bryan and his colleagues directed a host of bachelor’s and master’s degree students who went on to professional careers in psychology and in education. By 1902, when Bryan embarked on his 35-year term as president of the university, he had recruited a small staff of psychologists to continue the program. For the next two decades undergraduate teaching and public service took much faculty time, and department members played important roles in establishing the School of Education at Indiana University. Throughout its first thirty years, the laboratory provided a focus for the ideals—if not always the activities—of Indiana psychologists.

As one historian has observed:

*The esoteric laboratory provided its practitioners with a scientific passport to professional autonomy, an entering wedge into an academic world that offered status, security, and financial support for pursuits that often bore little substantive relation to experimental endeavor. . . . For most psychologists the laboratory represented not the workshop where they spent their professional lives but the seminary in which they were originally trained.*

Between the First and Second World Wars the psychology program continued to have a strong utilitarian thrust, but the foundations of an autonomous research enterprise were also being laid. After World War I the psychology faculty grew substantially; there was a total of eight by the early 1930s. Unlike before, many of these new faculty members did not have strong roots in the State of Indiana. Beginning in the 1920s the rudiments of a doctoral program were assembled, and by the end of that decade the psychology program had attained complete administrative independence from philosophy. By 1931 the Department of Psychology included a nucleus of productive scientists on its faculty, and research and graduate education were increasingly emphasized. The department developed notable strengths in the areas of animal conditioning, clinical psychology, and physiological psychology, each of which had its own specialized laboratory facilities. At the start of World War II pure as well as applied research was flourishing.

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at Indiana, and the department was poised on the edge of far-reaching changes.

Along with the entire university, the psychology department entered a new era after the Second World War. In the midst of a renaissance under the administration of Herman B Wells, who had become president in 1937, Indiana University grew dramatically after the war, and research and graduate education were strongly supported. In the psychology department, scientific ideals came to dominate every aspect of the program, and applied research became less important. A host of new young faculty members arrived, who broadened and strengthened research in both experimental and clinical areas. The topic of learning continued to provide a focus for the department, but a variety of theoretical viewpoints coexisted, all sharing an overarching commitment to methodological rigor. By the early 1950s the Indiana psychology department was one of the country’s leading academic centers for experimental psychology, and for the first time in its history was a major producer of PhDs.

Growth continued through the 1950s and into the 1960s as the department expanded into new fields, notably mathematical modeling and sensory psychology, while also strengthening the mainstays of animal learning, physiological psychology, and clinical psychology. By the early 1970s faculty size reached about 40 and PhD production leveled off. The program encompassed seven major areas: animal learning and behavior, cognitive/mathematical, sensory, physiological, developmental, social, and clinical. Although specialization continued, the department underwent an internal restructuring in the late 1990s to avoid balkanization and to provide further incentives for research collaboration. Rigorous research training remained the hallmark of the graduate program for both experimental and clinical students. In 2005, the department voted to change its name to Psychological and Brain Sciences to reflect the broader scope of its research profile, more fluid boundaries between sciences of mind and brain, and persistent disciplinary leadership.

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The origins of psychology at Indiana University can be traced directly to William Lowe Bryan (1860-1955), a native of Bloomington and an alumnus of the university. Born on a nearby farm in 1860, Bryan was the eldest son in a Presbyterian minister’s family. Evidently close to his religious parents, Bryan grew up in the rural community surrounding the town. Perhaps the most notable feature distinguishing Bloomington from other small towns in southern Indiana was the presence of the state university, chartered in 1820. Though it was small and backward in many ways, Indiana University afforded the region some cultural prominence in addition to real educational opportunities for the area’s residents.

Between philosophy and science

Educated in local schools, Bryan entered the Indiana University Preparatory Department in 1876, and matriculated into the university the following year. During his undergraduate career Bryan came under the influence of David Starr Jordan (1851-1931), professor of natural sciences since 1879. Imbued with the research ideal imparted by his mentor at Harvard, Louis Agassiz, Jordan was a dynamic model of the new professional scientist. His specialty was ichthyology, but his work ranged over the entire spectrum of natural history. He led students on long field trips around the country and overseas, and accumulated large collections of biological specimens for laboratory study. Inspiring through exhortation and by example, Jordan convinced many Indiana students to pursue scientific careers.

Among the promising students Jordan singled out for attention was Bryan, who was already well known on campus for his oratorical and editorial activities, and his baseball prowess. He had helped revive the Indiana Student newspaper in 1882, and was a popular public speaker. As an undergraduate, Bryan
was a member of the small Specialists' Club organized by Jordan to encourage students to pursue careers in academic disciplines.4

Bryan received his bachelor's degree in 1884 upon completion of the ancient classics curriculum, one of the three courses of study available to undergraduates. The other two were in modern classics and in science. There was much overlap among the three curricula, and during Bryan's undergraduate years, all juniors were required to take a course in psychology that was based on the textbook *Elements of Intellectual Science* by longtime Yale president Noah Porter.5 Porter was one of the leading representatives of the Scottish common-sense school of psychology that was widely taught in American colleges after the Civil War. Introspective and non-experimental, this type of psychology drew from the tradition of associationism and was intended to inculcate Christian morals.6 At Indiana, the president, Lemuel Moss, who also held the title of Professor of Mental, Moral, and Political Philosophy, probably taught the psychology course.7 A Baptist minister, Moss was hired in 1875 as the sixth in an unbroken line of “preacher presidents” dating back to the start of the university.

After graduation, Bryan was hired as an English instructor in the preparatory department.8 Within a few months, he received an unexpected opportunity to join the regular faculty. In early November 1884, president Moss and the junior professor of Greek, Katherine Graydon, resigned after being caught up in a scandal. Evidently Moss, who was married, and Graydon, who was single, had established a romantic relationship. Six students, aided by the janitor, had spied on the couple through a hole they bored in the ceiling of the Greek classroom and then had reported their observations to the board of trustees. The incident was widely publicized in some sensational newspaper stories. Bryan, who was still editor of the *Indiana Student*, refused to comment on the situation beyond affirming his faith in the actions of the board of trustees. Before long, he was hired as a replacement for Graydon, and taught Greek and English.9

Ultimately, the Moss scandal benefited Bryan even further. It encouraged the Indiana University trustees to look beyond the ranks of the clergy for a new president, and they decided to appoint David Starr Jordan to the

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7 *Indiana University Catalog*, 1883-84.
8 Woodburn, *History of Indiana University*, 327.
post. Already well known in the state for his research and public speaking, Jordan was the first scientist to become president of an American college or university.10

The influence of Jordan

On Jordan’s first day in office, January 1, 1885, Indiana University consisted of 150 students and a dozen faculty members. Almost an equal number of pupils were enrolled in the preparatory department, which served as a high school for the Bloomington area.11 Jordan’s selection signaled the beginning of a new era for Indiana University. Like other educational reformers of the day, Jordan looked to science as the new cornerstone of college instruction. He introduced the elective system and revamped the curriculum to emphasize scientific subjects.

An apostle of the research ideal, Jordan declared, “The highest function of the real university is that of instruction by investigation, and a man who cannot and does not investigate cannot train investigators.”12 Because laboratories provided the means for students to acquire knowledge actively through research, they played a key role in his plans. The laboratory was also seen as a common meeting ground for faculty and students, a place where they could cooperatively pursue shared goals according to their abilities and aspirations.

Jordan coupled his curricular reforms with the cultivation of promising alumni for faculty positions. Although the university was often able to attract good faculty members from Eastern institutions, its rural location sometimes made it difficult to retain them. Furthermore, the university could not afford to compete in salaries with schools that were better endowed. Realizing these handicaps, Jordan sought to build the faculty from within. Promising undergraduates were encouraged to pursue graduate study, in the hope that the most outstanding could be persuaded to

10 Jordan’s background prepared him well to become an educational reformer. He was among the first students at Cornell University, where Andrew D. White presided over an institution dedicated to practical higher education. He continued his studies in natural history at Harvard under Louis Agassiz. In 1874 he was recruited to teach high school in Indianapolis, and the following year he was elected professor of biology at Northwestern Christian University, which was soon afterwards renamed Butler University. Jordan taught at Butler for four years, and became acquainted with notable Indianapolis residents such as Benjamin Harrison and James Whitcomb Riley. In 1879 Jordan was chosen to succeed Richard Owen, who was retiring to New Harmony, as professor of natural sciences at Indiana University. On Jordan’s role at Indiana University, see Clark, Indiana University, v. 1, 202ff. See also Jordan’s autobiography, The Days of a Man (New York: World, 1922).

11 Woodburn, History of Indiana University, 373.

return as faculty members. Around 100 master’s degrees were awarded during Jordan’s tenure at IU, along with a few honorary doctorates. Many of those who received master’s degrees from Indiana then continued their education in prestigious doctoral programs at Eastern universities.

Bryan was among the crop of junior faculty whom Jordan was cultivating. Soon after becoming president, Jordan promoted Bryan to acting professor of philosophy, to replace former president Moss. At the same time Bryan began working on his master’s degree. In 1886 he earned one of the first advanced degrees awarded by Indiana University, for a master’s thesis entitled, “The Polar Logic of Heraclitus,” and was promoted to associate professor. Although his thesis dealt with classical Greek philosophy, Bryan’s interests had already shifted toward a new intellectual horizon—experimental psychology. Jordan knew little about psychology, reportedly joking that it was “like a man going round like a bat in a smokehouse,” but he supported Bryan’s curiosity.

This “new psychology” was distinguished from earlier philosophical studies by its emphasis on empirical investigation. Laboratory techniques borrowed from other disciplines, notably physiology, promised to revolutionize the study of human nature, transforming it into a science. Various German universities were at the forefront of this emerging discipline, and American intellectuals such as William James were making positive reports of recent developments.

By 1886 Bryan decided he needed more than “a few books and journals” for guidance. He turned down a scholarship to study at Johns Hopkins University, where G. Stanley Hall had begun the first psychological laboratory in the country, and went to Germany instead. Upon his arrival in Europe he met another American student, James M. cattell, and struck up a long friendship. He served as an experimental subject for Hermann Ebbinghaus at the University of Berlin in some studies of memory, and learned how to use various pieces of laboratory equipment. During his stay he also attended lectures of other prominent scholars, including Friedrich Paulson, Eduard Zeller, and Emil duBois-Reymond. Returning to Indiana in the summer of 1887, Bryan was promoted to full professor.

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13 No doctorates were awarded between 1893 and the organization of the Graduate School in 1904. Lewis C. Carson, “Development of the Course of Instruction,” 161-166.
15 The best synthetic history of this period is O’Donnell, The Origins of Behaviorism.
After his experience with Ebbinghaus, Bryan was eager to start experimenting on his own. Throughout the fall semester he made plans for a laboratory, and requested funds to purchase a Hipp chronoscope. One of the “brass instruments” in widespread use at the time, the Hipp chronoscope could measure and record the extremely short time intervals obtained in human reaction-time experiments. Bryan convinced the administration to grant approximately $100 for the purchase of a Hipp chronoscope, even though, he said, “the trustees could not imagine what I would do with it.”

**Starting a laboratory**

In January 1888 Bryan opened the Indiana University Psychological Laboratory, the second such laboratory in the United States (and the oldest one in continuous existence). Armed with the Hipp chronoscope, Bryan began performing original research as well as laboratory demonstrations for his classes. Within a few months Bryan reported preliminary results from a set of reaction-time experiments at a meeting of the Indiana Academy of Science, a statewide learned society formed a few years earlier. He also used this occasion to present his plans for additional work in experimental psychology at Indiana University.

Bryan’s early research focused on the relation between intensity of sound stimuli and speed of reaction times. He continued research in this area for about three years, and concluded that below a certain stimulus level, which varies among individuals, reaction time varies inversely with intensity of the stimulus. Above this level, increased intensity of the stimulus does not change the reaction time.

Although he was engaged in some experimental research, Bryan’s major responsibility was teaching. As the sole faculty member in the Department of Philosophy, he reoriented the curriculum toward psychology. Traditional philosophical subjects were not ignored, but were studied in relation to new theoretical and empirical trends in psychology. By 1890 undergraduate work was organized around the “Theory of Cognition and Method of

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17 This was a substantial investment, equal to the entire 1888-89 budget for the Zoology Department. Woodburn, *History of Indiana University*, 399.
18 The Indiana laboratory merits this distinction because the Hopkins laboratory remained closed for several years after 1888. See Pauly, “G. Stanley Hall and His Successors.”
Science.” Under this broad rubric, students studied elementary psychology and the history of theories of cognition. Advanced undergraduates and graduate students studied the current literature in physiological (i.e., experimental) psychology, and carried out research “in reaction time, estimation of distance by the skin, successive association, and illusions of apperception.”

During his first years as a university professor, Bryan’s views on education matured and crystallized. Never abandoning his strong Christian faith, he acquired an equally fervent belief in the power of scientific investigation as a way to shed light on the problems of human existence, whether in the realm of philosophy or education. He became opposed to the idealist educators led by William T. Harris, a follower of Hegel. Bryan argued that they were “unwittingly poisoning education in Indiana” by leading psychology “strenuously away from contact with the truth in things.” He suggested that the Harris group used facts only to illustrate their doctrines, not to revise or improve them.

Bryan integrated his scientific views with his religious convictions in two distinct, yet complementary ways. First, he used the teachings of Jesus to suggest appropriate models of behaving that led to what he considered the self-evident achievements of civilization. Thus, he believed, Christian values had been validated through their use. In a larger sense, he saw little direct overlap between materialism and Christianity. They dealt with different spheres of action—respectively, the public and personal. Science could not displace religion, but offer examples supporting its values.

**Graduate study at Clark University**

Bryan was acutely aware of his intellectual isolation in the Midwest. A critic of popular trends in educational theory, he nurtured the new psychology in the supportive scientific atmosphere of Indiana University. He kept abreast of current developments by reading the work of various authors, including William James, G. Stanley Hall, and George T. Ladd, who were among the most prominent expositors of the new psychology. By January 1891 Bryan decided he needed additional first-hand contact with leading centers of research, either in the East or in Europe, and arranged a leave of absence. Although he was greatly influenced by the writings of James, Bryan looked first to Hall as a potential mentor. Of the leading American psychologists, Hall was the most successful in setting up productive doctoral programs in the new field, first at Johns Hopkins and then at Clark University.

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22 Bryan to Hall, 31 January 1891; Clark University Archives/G. Stanley Hall Papers/Folder “Bryan.”
In a long letter to Hall, Bryan explained his reasons for wanting to study at Clark. Pointing out the utter lack of trained psychologists in the Hoosier state, Bryan noted that Indiana University was ripe for the development of scientific psychology. After giving an account of his differences with the educational Hegelians, he briefly mentioned his experimental research. Bryan summarized his hopes by stating:

*If God lets me live, I hope to have here a place where students may come into contact with real work [and] the real workers, [and] there through [sic] some chance of working out their own intellectual [and] spiritual salvation.*

Hall evidently found Bryan's criticisms of his philosophical adversaries rather harsh, prompting Bryan to assure him that he only hoped “to see here something better than they offer” while including “as much as possible of their philosophical breadth and ethical motive.”

While Bryan corresponded with Hall during the first months of 1891, Jordan was recruited to become the first president of Stanford University. When he moved to California in the summer he took many of the Indiana faculty with him. Evidently he did not ask Bryan to come, perhaps because of the budding psychologist’s plans for advanced study. Whatever the case, Bryan reacted to the university’s upheaval by seeking a fellowship to study at Clark.

In his application to Hall, Bryan explained why he had not yet published anything on his psychological research:

*Whatever infertility you may judge this to indicate I hope you will concede something to rigid self-criticism & to the resolution not to add anything to the oppressive list of works which are either not accurate enough or not general enough to deserve the time of busy people to read.*

Bryan won the fellowship, and arrived at Clark in the fall of 1891 accompanied by his wife, Charlotte Lowe Bryan. He was soon immersed in a heady atmosphere of research and creative activity, and participated in the famous Monday evening seminars held in Hall’s home where faculty and students would discuss their research and vigorously debate current issues in psychology. Aided by his graduate advisors and his wife, Bryan began

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23 Ibid.
24 Bryan to Hall, 11 February 1891; Hall Papers/Bryan.
26 Bryan to Hall, 6 April 1891; Hall Papers/Bryan.
27 Charlotte Lowe (1867-1948), an Indianapolis native, graduated from Indiana University in 1888, and received a master’s degree in Greek in 1889, shortly before marrying William Bryan. He changed his middle name from Julian to Lowe in her honor. For his tributes to her, see William Lowe Bryan & Charlotte Bryan, *Last Words* (Bloomington: Privately printed, 1951), 1-9.
his research, including a study of “eye and ear mindedness” among children that measured the relative strengths of association of the visual and auditory modalities.\textsuperscript{28}

Soon after he had arrived at Clark, Bryan received an offer from Jordan to teach philosophy at Stanford, at a substantial increase over his Indiana salary. Despite its temptations, Bryan rejected the offer, electing to remain on his chosen course in psychology. Raising the salary, Jordan wrote again, assuring Bryan that he would be able to work in the planned psychological laboratory. Again Bryan declined.\textsuperscript{29}

For his doctoral dissertation Bryan studied the development of voluntary motor ability in children. In the rationale for his experiments, he viewed the study of muscular movements as a sort of “grammar of will” that reflected cognitive activity. He claimed “that all, even the highest, immediate manifestations of the mind are muscular motions.”\textsuperscript{30} Bryan tested almost 800 children, ranging in age from 5 to 16 years, on maximum rates of rhythmically repeated movements. The movements were measured by means of a telegraph key connected to a counter and timer for recording rates. Using restraints to isolate various muscle groups, Bryan gathered data from the muscles involved in the joints of the shoulder, elbow, wrist, and the forefinger. The results consisted primarily of tabulations of rates. Bryan found little difference in maximum rates between girls and boys, and small individual variation in maximum rates. In girls aged 12 to 16 and boys aged 13 to 16 there was acceleration with age, followed by a decline and then a recovery of rate. Bryan attributed this to physical changes during adolescent maturation. Also studying the precision of voluntary movement, he reported large variations among individuals. Bryan received his PhD in December 1892, the second doctorate in psychology granted by Clark University.\textsuperscript{31}

The thrust of Bryan’s research at Clark was quite different from that of his previous investigations. His early experiments at Indiana followed the model of Wilhelm Wundt’s at Leipzig. Concerned with relatively simple processes such as reaction times, those experiments were often collaborative in the sense that Bryan and his students served as both experimenters and subjects. In contrast, his research style at Clark was much more impersonal, using large groups of schoolchildren as subjects. One historian has characterized this as the “Clark model,” noting that “experimental subjects played


\textsuperscript{29} Bryan, “Adventure in Psychology,” 2-3.


\textsuperscript{31} A year earlier Herbert Nichols had obtained the first. See Louis N. Wilson, “List of Degrees Granted at Clark University and Clark College, 1889-1920,” \textit{Publications of Clark University Library}, 1920, 6, 1-76.
an anonymous role, experimenter-subject contacts were relatively brief, and the experimenter was interested in the aggregate data to be obtained from many subjects.”

During his doctoral examination at Clark, Bryan encountered directly Hall’s “mixed bag of science and spirit” when he was asked to state his deepest beliefs to the jury. There is no record of his reply, but Bryan was sufficiently disturbed to write Hall a personal note afterwards, saying

\[ I \text{ beg you not to think from anything I said or failed to say at my examination that there are no “things which I believe in and wish to teach to everybody”; still less that I am moved mainly by scientific and in a slight degree by ethical motives in my work. If no set of doctrines which I can summarize, there is at least a spirit which I would have and give. And I do pray most of all for the Spirit of Life. –But these things cannot be said.} \]

Bryan’s reaction expressed his deeply religious character as well as his desire to keep ethical and empirical issues separated.

During Bryan’s stay at Clark, Hall was laying plans to organize a formal professional society for psychologists. Hall’s attempts to make Clark a preeminent center of advanced study and research had been thwarted by a lack of funds and by William Rainey Harper’s success in luring away more than half of its faculty to the new University of Chicago. Seeking a national institutional base, Hall presided over the formation of the American Psychological Association (APA) in July 1892. Bryan was one of the dozen or so scholars who attended the organizational meeting, and became one of the association’s 26 original members. Bryan was among the few participants at the meeting who gave reports on their research; he described the progress of his dissertation on children’s motor abilities.

Later that year, in December, the first annual meeting of the APA was held with 18 in attendance. At that time Bryan reported on his earlier studies of sound stimuli and reaction times.

32 Kurt Danziger, “‘The Origins of the Psychological Experiment as a Social Institution,’ American Psychologist, 1985, 40, 133-140, on 137.
34 Bryan to Hall, 7 February 1893; Hall Papers/Bryan.
36 Remembering the occasion, Bryan stated: “The meeting was very informal. For example, my ‘paper’ could only have been a brief report of ‘The Development of Voluntary Motor Ability’.... Other papers at the meeting were of like informality.” W. Dennis & E.G. Boring, “The Founding of the APA,” American Psychologist, 1952, 7, 95-97, on 96.
37 Sokal, “APA’s First Publication,” 283.
CHAPTER 2

Shaping An Indigenous Style

Through the 1890s experimental psychology flourished at Indiana. Bryan built a successful academic enterprise by making the program relevant to the university’s educational mission. Already a recognized leader on campus, Bryan used psychology as a vehicle to further his professional ambitions as an educator. A key element of Bryan’s strategy was to make experimental psychology the basis for the emerging discipline of scientific pedagogy. The new pedagogy, like the new psychology, was an effort to transform a humanistic field into a scientific subject, and it derived much of its appeal from the increasing importance of higher education in American life.

At Indiana University, Bryan had close interactions with Richard G. Boone (1849-1923), professor of pedagogics from 1886 to 1893. Boone had been appointed by Jordan, and charged with the task of developing the field of pedagogy within the philosophy department. His efforts were allied with Bryan’s in psychology, and students aiming for jobs in education often took coursework in both areas. In fact, the two professors’ expertise overlapped sufficiently that they taught each other’s courses upon occasion. Boone, who had studied under G. Stanley Hall at Johns Hopkins University in 1887-88, became known as a historian and policy analyst of education.38

After earning his PhD, Bryan returned to Indiana University in January 1893. The scientific spirit fostered by Jordan pervaded the university, and Bryan found ample support for his plans. Among his first tasks was to expand the five-year-old laboratory, buying new equipment and arranging to add to the faculty. In conjunction with other faculty members, Bryan developed cooperative coursework in biology, sociology, and pedagogy. He also received practical laboratory assistance from the chemistry and physics departments. Pleased with his progress, Bryan wrote to Hall saying “I find the possible services of Psychology to other sciences recognized with such heartiness and unanimity as would have seemed incredible a few years

Within the year Bryan also gained an expanded role in administrative affairs when president Joseph Swain, another of Jordan's scientific protégés, appointed him vice-president of the university in 1893.

Bryan depended on local Hoosier talent to fill the ranks of both faculty and students, and, like Jordan, he adopted the practice of promoting promising younger scholars from within. Among Bryan's first appointments was Ernest H. Lindley (1869-1940), who was hired as an instructor in the fall of 1893. Lindley, the scion of a prominent Southern Indiana family (his great-grandfather was one of the original trustees of Indiana University), had received his bachelor's degree from Indiana University earlier that spring. In 1894 the faculty grew to three members with the addition of John A. Bergström (1867-1910) as assistant professor of psychology and pedagogy. Originally from Sweden, Bergström had just completed his PhD in psychology at Clark. As Boone's replacement in pedagogy, his selection indicated the close relationship Bryan was seeking to foster between the fields. Furthermore, Bergström's fluency in German and his talent in designing and building experimental apparatus added important skills to the psychology program that complemented the strengths of Bryan and Lindley, and he soon assumed the role of technical director of the laboratory.

**Pedagogy and the child-study movement**

Among the topics that occupied department members was child study, an effort to reform pedagogy on the basis of a scientific analysis of children’s mental development. Championed by G. Stanley Hall, the child-study movement flourished in the 1890s as a loose alliance of educators, philosophers, and psychologists. Hall’s wide-ranging pronouncements concerning the psychological development of children found a receptive audience in these circles, and many of his students shared his concern with pedagogy, even if they disagreed with his speculative ideas on genetic (i.e., developmental) psychology. As he became involved in the movement, Bryan’s dissertation research proved to be a valuable credential. Although he did no further empirical research in genetic psychology, he encouraged his students to study the topic, and he became a prominent promoter of child study to educators and to the public.\(^{40}\)

Like Hall, Bryan believed that psychological research and educational reform were inseparable, and that laboratory science could play an important role in improving pedagogy. He was careful, however, not to

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39 Bryan to Hall, 7 February 1893; Hall Papers/Bryan.
40 In 1895 Bryan claimed that half of the work in the Indiana University psychology laboratory was related to child study. William L Bryan, "Report on Work in Child Study in Indiana," *Proceedings of the National Education Association* 1895, 905-906.
define psychology exclusively in terms of experimentation or to overstate its potential contributions. In “A Plea for Special Child Study” at the 1893 International Congress of Education, Bryan expressed a blend of optimism and caution:

*We promise a science of conscious life. As other sciences have traced the development of the physical world, we promise to supplement this by giving the natural history of conscious life from its darkest beginning to the highest achievements of man. But we shall be false to all our promise, and we shall turn the confidence and sympathy which has endowed chairs and built laboratories, into derision and rejection, if we confine our science to a little round of test in the laboratory.*

Bryan became the first secretary of the National Association for the Study of Children in 1893, the first president of the Child-Study Section of the National Education Association in 1894, and an officer in other related organizations. Although the child-study movement faded by the turn of the century without producing many enduring scientific results, it left behind an important legacy of involvement with practical educational issues for psychologists like Bryan. In the ensuing years, Indiana psychologists built on this legacy by developing a program in clinical psychology oriented around children’s educational problems and by shaping the institutional structure of the school of education.

**The telegraphy paradigm**

In formulating his research plans, Bryan combined natural history and experimentation. Like other psychologists of his generation, he searched for ways to bring everyday psychological phenomena into the laboratory. For example, in one of his first letters to Hall, Bryan related an anecdote told to him by a postal clerk. The clerk said that he often would find the correct pigeonhole and grab the right letter for a postal patron before consciously recognizing the face of the person. Bryan was interested in this “highly complex adaptive reaction” and considered sending out a questionnaire to determine its extent and characteristics. Although he never followed up this particular case, he continued to draw ideas from these kinds of commonplace observations.

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42 See Deputy, *The Philosophical Ideas of Bryan*.
44 Bryan to Hall, 11 February 1891; Hall Papers/Bryan.
Even though Bryan set the overall agenda for the psychology program, specific research investigations often grew out of the interests that students brought with them to the laboratory. For instance, shortly after returning from Clark, Bryan took advantage of an unexpected opportunity to conduct some naturalistic research via an unusual student. Noble Harter, a former railroad telegrapher, entered Indiana University as a junior in the spring of 1893. Bryan recognized the abilities of this mature student, who was two years older than him, and they embarked on a series of studies of the skills involved in telegraphy.45

Precise quantitative measurement was the hallmark of the new psychology, and the study of telegraphy promised to be nearly ideal in that regard. Much equipment in the psychological laboratory had been directly appropriated from devices in the workplace, such as the telegraph key and various types of timers and counters. Furthermore, as Bryan and Harter noted:

_The telegraphic language is singularly well adapted to the experimental study of many problems in physiology, psychology, and even philology. . . . on the one hand, no language used by man can be so completely translated into exactly measurable symbols; while, on the other hand, the manifold personal differences in the operators are shown by investigation to be represented in those symbols._46

Thus telegraphy was a strategic research choice, combining methodological rigor with practical significance.

In their first study, Bryan and Harter tested 16 telegraph operators of varying competence for speed and accuracy in sending a message by Morse code. Then novice telegraphers were tested weekly on their rates of sending and receiving, and learning curves were drawn from the results. The receiving curves showed periods of no improvement—plateaus—that occurred below the level of mastery, whereas the sending curves did not.

In further investigations, Bryan and Harter extended their conclusions. This time, a novice telegrapher was tested weekly on the rate of receiving the following: (a) letters not making words, (b) letters making words, but not making sentences, and (c) letters making words and making sentences. The results showed a gradual leveling off of the rates on the first two tasks. On the third, a plateau appeared before mastery was eventually attained. These findings were consistent with the anecdotal reports of telegraph operators who said they progressed from learning letters, to words, and finally sentences.

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45 Harter (1858-1907) received his BA in 1895 and MA in 1896. After graduation he became a city school superintendent, first in Warsaw, Indiana and then in California.

Bryan and Harter concluded that the acquisition curve for receiving messages could best be explained by the learning of a hierarchy of habits. That is, one level of skill becomes automatic and then progress is made to the next level until mastery on it is reached, and so on. In the case of telegraphy, letter-habits, then word-habits, and finally sentence-habits were presumably acquired. The concept of a hierarchy of habits also helped Bryan and Harter explain the plateau phase in the learning curve. In their words:

A plateau in the curve means that the lower-order habits are approaching their maximum development, but are not yet sufficiently automatic to leave the attention free to attack the higher-order habits. The length of the plateau is a measure of the difficulty of making the lower-order habits sufficiently automatic.47

Bryan and Harter discussed other learning situations in which hierarchies of habits might be present, and pursued the implications of their research for the facilitation of skill learning. Bryan’s practical philosophy came through clearly in the final paragraph of their article:

[The learner] must systematize the work to be done and must acquire a system of automatic habits corresponding to the system of tasks. When he has done this he is a master of the situation in his field. He can, if he chooses, deal accurately with minute details. He can swiftly overlook great areas with an accurate sense of what the details involved amount to—indeed, with far greater justice to details than is possible for one who knows nothing else. Finally, his whole array of habits is swiftly obedient to serve in the solution of new problems. Automatism is not genius, but it is the hands and feet of genius.48

Throughout the 1890s Bryan fostered this combination of commonsense theorizing and methodical experimentation among his colleagues and students. The telegraphy studies served as an exemplar for Indiana researchers as they sought to establish psychology on a solid empirical base in the university laboratory. The Bryan and Harter research eventually became a landmark in psychology; their learning curves were among the first in the literature and have been widely cited.49

The Clark connection

Like Jordan before him, Bryan depended almost exclusively on local talent to build his program. Promising undergraduates were groomed for

48 Ibid., 375.
49 See, for example, Robert S. Woodworth, Experimental Psychology (New York: Holt, 1938); and Hilgard, Psychology in America. In a survey conducted in 1943, nearly 50 years after the experiments, the Bryan and Harter articles were ranked among the most important ever published in the Psychological Review; Herbert S. Langfeld, “Fifty Volumes of the Psychological Review,” Psychological Review, 1943, 50, 143-155.
faculty positions by sending them off to graduate school in the East. Lindley, for instance, completed a master’s degree at Indiana in 1894, and then went off to Clark University for his doctorate, which he received in 1897. Upon his return he was made an associate professor. A number of other students obtained their bachelor’s or master’s degrees before going elsewhere to pursue graduate study and professional careers in psychology or related fields. By the turn of the century, Indiana had developed a reputation for training significant numbers of undergraduates who later became PhDs in psychology, with a record that was reportedly second only to Harvard up to 1902.  

From the 1890s until the First World War, Clark University was the prime destination for Indiana students seeking psychology doctorates.  

Beginning with Bryan, over two-dozen undergraduate alumni studied psychology and pedagogy under Hall and his colleagues, and nearly all obtained their doctorates. A few, like Lindley, returned to permanent faculty positions in Bloomington; others came back for temporary appointments. Many went on to teaching or administrative posts in secondary or higher education, further solidifying psychology’s ties with this field. Indeed, psychology majors contributed significantly to Indiana University’s growing reputation during this period as the “mother of college presidents.”

Among the students who went to Clark University for graduate study was Edward Conradi, who received his master’s degree from Indiana in 1898. For his thesis he collaborated with Bergström in translating a major German textbook in the field of school hygiene. An eclectic application of “the principles of architecture, sanitary engineering, psychology, pedagogy, and preventative medicine upon the physical conditions of school life,” school hygiene had strong roots in Germany, where the Zeitschrift für Schulgesundheitspflege [Journal of School Hygiene] had been published since 1888. The book’s chapters ranged from ventilation and cleaning to the nervous system, and provided yet another illustration of the way in which psychological concerns could penetrate into the realm of education. Conradi went on to obtain his doctorate from Clark in 1904, and served as president of Florida State College for Women (now Florida State University) from 1909-41.

Another undergraduate who went on to graduate work in psychology was Clark Wissler. Born in rural eastern Indiana, he entered Indiana University

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53 Ludwig Kotelmann, School Hygiene (Syracuse, NY: C.W. Bardeen, 1899).
54 Ibid.
in 1893 when the psychology program was expanding. After receiving his BA in 1897, he was hired as an instructor of psychology and education at Ohio State University. He taught for two years while working on a master’s degree from Indiana, and he established Ohio State’s first psychological laboratory during his stay. After receiving an MA from Indiana in 1899, Wissler went to Columbia University to work with James M. Cattell, under

whose supervision he conducted his famous doctoral research that showed little correlation between mental and physical tests.\textsuperscript{56} Turning to anthropology, he eventually became a leading authority on American Indian culture.

Following Bryan’s naturalistic approach, master’s candidate Norman Triplett noted that bicycle racers tended to ride consistently faster when paced by a motorcycle, according to official race records. Deciding to investigate further, Triplett set up a laboratory experiment. Using children aged 10 to 12 as subjects, he had them wind modified fishing reels as fast as they could, first alone and then in the presence of their cohorts. Half of his 40 subjects exceeded their solitary rates during the group test, a quarter was unaffected, and a quarter went slower, showing a loss of motor control through over-excitement. Triplett concluded that:

\begin{quote}
The bodily presence of another contestant participating simultaneously in the race serves to liberate latent energy not ordinarily available. . . . The sight of the movements of the pacemakers or leading competitors, and the idea of higher speed furnished by this or other means, are probably in themselves dynamogenic factors of some consequence.\textsuperscript{57}
\end{quote}

Thus, he argued, the group situation contributed measurably to individual effort and achievement.

Triplett’s research provides another good example of the Indiana style. Inspired by a commonplace observation, it addressed an important psychological topic—the influence of other people. Using a simple apparatus, quantitative data were obtained and analyzed in light of other evidence, both empirical and anecdotal. Then relatively straightforward conclusions were drawn that were pertinent to social influence in daily life, such as the interaction of children in the classroom.\textsuperscript{58} After receiving his master’s


\textsuperscript{57} Norman Triplett, “The Dynamogenic Factors in Pacemaking and Competition,” \textit{American Journal of Psychology}, 1898, 9, 507-533, on 533.

\textsuperscript{58} Triplett’s study remained little known until Floyd Allport discussed it in his early textbook \textit{Social Psychology} (Boston: Houghton Mifflin, 1924). He reinterpreted Triplett’s results by distinguishing two types of group influence on individual behavior: social facilitation and rivalry. The first factor accounted for the increasing rates in the presence of others for the majority of the children, while the second explained the poorer performance of the slower group because of over-stimulation through competition (pp. 262, 280). Thirty years later Gordon Allport published an influential review of the history of social psychology and credited Triplett with conducting the first laboratory experiment in the area (G. Allport, “The Historical Background of Modern Social Psychology” in G. Lindzey, ed., \textit{Handbook of Social Psychology} (Reading, Mass.: Addison-Wesley, 1954), 3-56, on 46). Allport’s claim was picked up and repeated by other authors, until by the 1970s it was entrenched in the social psychology textbook literature. In 1982, one writer (William S. Sahakian, \textit{History and Systems of Social Psychology}; 2nd ed. [Washington: Hemisphere, 1982]) went so far as to cite Triplett’s publication date of 1897 \textsuperscript{sic} “as marking the founding of experimental social psychology” (p. 2).

On this view, Triplett’s experiment has come to be viewed as a discrete starting point for a continuing line of inquiry in modern American psychology. Without attempting to understand Triplett’s scientific
degree from Indiana in 1898, Triplett went to Clark University and earned his PhD in 1900. He spent the remainder of his career teaching psychology and child study at Kansas State Teachers College.

**Arthur Griffith: Arithmetical prodigy**

In the summer of 1899 Lindley met Arthur Griffith, a 19-year-old arithmetical prodigy, and convinced him to come to Indiana University for scientific observation. Like the telegraphers Bryan had studied, Griffith possessed a definite cognitive skill for manipulating discrete bits of data. Although his abilities were uncommon and seemed to involve some natural talent, Lindley and Bryan believed that the capacities were amenable to empirical study.

For five months Griffith cooperated with the psychologists as they analyzed his methods of rapid calculation. He seemed to be average in intelligence, and had started developing his techniques at age 12. Griffith excelled primarily in multiplication and was somewhat less capable in division, addition, and subtraction. Although he could partially explain his methods, he did not understand the general mathematical operations underlying his solution of the problems. He did not know algebra and was uninterested in learning it. Griffith's ability was due to his large memory of numbers and his shortcuts for manipulating them. As Lindley reported:

_He has a multiplication table complete to 130 - and partial to almost 1,000. He knows, therefore, the squares of all numbers to 130 and is master of the cubes to 100, fourth powers to 20; fifth powers of numbers between 985 and 1,000, besides those of many other numbers: 33 powers of 2 and 5; is thoroughly acquainted with every prime and composite below 1,500, and can instantly give the factors of the latter. This factoring enables him often to bring operations within the range of his multiplication table. He also knows by what number a given prime must be multiplied in order to make it approximate a_
multiple of 100. He has in memory all the tricks by which one can
tell how squares and cubes must end - and so on. He remembers the
number of feet in a mile, seconds in a year, and the like.\textsuperscript{59}

Lindley and Bryan measured Griffith’s speed and range of calculation, and
described his shortcuts in detail. Indiana University mathematicians trans-
lated the methods into algebraic notation, but Griffith showed little interest
in these formulas.

In December 1899 Griffith accompanied Lindley and Bryan to the
American Psychological Association meeting in New Haven, Connecticut
and demonstrated his abilities to audiences there.\textsuperscript{60} After a few months,
Griffith became concerned that his methods would be published and there-
by interfere with his plans to exploit them for financial gain. He left Indiana
and began earning his livelihood on the vaudeville circuit. The full results
of the study were not published until forty years later, when Bryan incor-
porated them into a monograph that attempted to relate all of his research
on human skill learning under the rubric “On the Psychology of Learning a
Life Occupation.”\textsuperscript{61}

A decade of achievement

By 1899 Indiana had produced more than a dozen undergraduates who
were to continue in the new psychology. The psychology program was com-
prehensive, including a broad introductory course and more specialized
courses in the following areas:

- Experimental psychology. Study of sensation and perception,
memory, attention, suggestion, and individual differences.
- Educational and genetic (developmental) psychology.
- Neurology and embryology.
- Mind and body. Conditions of mental activity such as influence of
blood circulation, respiration, fatigue, drugs, sleep, and hypnotism.
Survey of claims of “psychic research.”
- Morbid psychology. Outline of mental diseases and conditions of
mental health, including psychology of degeneracy, idiocy, and
imbecility.

Psychology of Learning a Life Occupation,” Indiana University Publications. Science Series, 1941, #11, 24-
29, on 28-29. The paper was originally presented at the 1899 APA meeting.
See also Steven B. Smith, The Great Mental Calculators: The Psychology Methods and Lives of Calculating
• Comparative psychology. Consciousness in man and animals. Development of instincts, habits, and intelligence. Observation and interpretation of animal activities.
• Seminary for current literature.62

The psychological laboratory comprised five rooms, and was supplied with water, gas, electric light and power. It contained an impressive array of apparatus, including:

For the senses:
• Zwaardemaker Olfactometer
• Verdin Esthesiometer
• Frey Hair
• test weights for psychophysic law
• color mixers
• Wheatstone stereoscopes
• charts for the study of visual space perception
• Galton bar
• set of forks for highest audible tones
• Helmholtz resonators

For reaction time experiments:
• the Hipp chronoscope and pendulum chronoscope of special design (made in department)

For graphic work:
• the Marey and Ludwig kymographs
• Kroenecker interrupter
• Mosso plethysmograph
• pneumographs
• Verdin radial and carotid sphygmograph

For the study of movement:
• myographs
• a tapping machine
• a general ergograph of special design (made in department)

For memory and associations:
• a machine for experiments according to the Ebbinghaus method, together with the necessary syllable series, etc.

Miscellaneous:

- apparatus for testing the competitive instinct (made in department)
- apparatus for testing the force and direction of movement simultaneously
- an incubator
- dissecting outfits
- dissecting microscope
- high-power microscopes.\(^63\)

In less than a decade, the department had produced a substantial amount of research. Laboratory investigations ranged widely across the discipline, from sensory/physiological (e.g., “pain sensitivity”) to cognitive (e.g., “imagery of children”) topics. Perhaps the largest number of studies dealt with human learning in some form (e.g., “practice curves in learning to read a new language”), including several with a developmental approach (e.g., “the curve of memory for foreign words, from youth to middle life”).\(^64\) Despite their diversity, all of these studies drew upon the eclectic, naturalistic tradition instituted by Bryan after his return from Clark in 1893. The Indiana research program was characterized by an emphasis on descriptive fact-finding rather than on the formulation and elaboration of psychological theory. Practical concerns were evident in both the framing of the experiments and in the interpretation of their results. Although the Indiana psychologists kept abreast of disciplinary developments elsewhere, their primary goal was to help develop practical knowledge to serve local needs.

Looking back at his work on the psychology of human skill learning, Bryan emphasized the holistic nature of his approach and methods. He noted that the telegraphy research and the Griffith case study were not concerned with the learning of discrete bits of information, but with “the steps by which one advances toward the mastery of a life occupation.”\(^65\) Bryan was not interested in abstract formulations or techniques divorced from everyday experience, but in understanding human behavior in the course of normal life. His experimental designs would be considered “naturalistic” today in the sense that they used a minimal amount of artificial manipulation in order to produce quantifiable data. For Bryan, the complex process involved in mastering an occupation was an important object of study. It was highly relevant to the emerging mission of the university in channeling young people into an increasingly diverse and specialized job market.

\(^{63}\) Ibid., 16-17
\(^{64}\) Ibid., 17.
Transition to a new era

By the turn of the century Indiana University was, in the words of its historian, “on the threshold of the future.”66 It had ceased to be the undistinguished rural college of twenty years before, yet it was far from achieving the eminence of its Midwest neighbors such as the University of Wisconsin or the University of Michigan. The liberal scientific spirit of Jordan had been continued by his successors as president, John M. Coulter and Joseph Swain, who were both among his many protégés. Although still fairly small, the university was growing; from 1885 to 1900 enrollment had increased six-fold, from 156 to 1000 students.

After seven years of sustained work, Bryan traveled to Europe in the summer of 1900 for a year of study. He spent the first half of his sabbatical in France. He attended Pierre Janet’s lectures at the University of Paris, and met with him personally to discuss such subjects as sleep and dreams.67 Bryan also met Alfred Binet, who asked him to explain his methods of measuring children’s heads. During his stay in Paris, Bryan participated in the Fourth International Congress of Psychology that was held there.68 Bryan spent the latter half of the year in Wurzburg, Germany, meeting with psychologist Oswald Külpe.69 The two men got along well, and Külpe suggested some joint research in psychophysics, which had to be deferred until Bryan returned the following summer. Their experiments dealt with the ability of humans to perceive the separate attributes of sensory impressions. According to Edwin Boring, their findings influenced Edward Titchener to revise his views on “the observational status of the sensation and the attribute.”70

Before he left Bloomington to work with Külpe during the summer of 1902, Bryan was elected president of Indiana University. In June president Swain resigned and accepted the presidency of Swarthmore College. Voicing a widespread opinion, he recommended that Bryan replace him. Bryan was an accomplished teacher and administrator on campus, and had gained a national reputation for his psychological research.

66 Clark, Indiana University, v. 1, 343.
67 On one occasion in his lectures, Janet mentioned Bryan and Lindley’s report on the arithmetical prodigy Arthur Griffith. Deputy, Philosophical Ideas of Bryan, 23.
69 Bryan described Külpe in a letter to Swain: “Above all I am delighted with Külpe who is a man after my heart. In France sometimes I got almost discouraged with human nature [and] I know that Frenchmen feel so, feel that society is going to rot. But in face of the big clear blue honest eyes of a man like Külpe, I feel that all the men are not dead yet.” Bryan to Swain, May 1901; Indiana University Archives/Swain Papers C174/Box 7/Folder Bryan, William Lowe, 1893-1902.
Shortly after he was chosen president of Indiana University, Bryan was elected president of the American Psychological Association for 1903. Like every previous APA president, Bryan was a charter member of the organization. By this time the APA was a small, well-established society with a membership of 130. In his presidential address, entitled “Theory and Practice,” Bryan gave some insight into his view of the scientist’s role in society. He maintained that the relation between theory and practice is always problematic, whether one uses science, philosophy, or common sense for guidance. Professionals, such as physicians and psychologists, are forced by the demands of life to give advice in the absence of complete or absolute knowledge. Furthermore, theory itself cannot provide an unambiguous guide for behavior because it can never be comprehensive: “No theory completely embraces all the conditions determining any action.” Bryan saw two ways out of this dilemma for the man of knowledge. The first, termed “concrete science,” was science firmly anchored in the study of actual behavior or events and with relevance to the conduct of life. Psychology, he thought, was only beginning to move in this direction; its realization as a concrete science lay somewhere in the future. The other alternative was to take the scientist out of the laboratory and into the realm of practical affairs. Thus, Bryan stated,

The scholar may at great price become a statesman. When this occurs, whether at court or in a village school, we have at last a solution to the ancient problem of theory and practice.

A valediction to his scientific career, Bryan’s address expressed his overarching concern with public service through education.

In charting the course of the growing university, Bryan saw himself engaged in practical psychology on a daily basis. As he formed his new administration, he enthusiastically embraced the ideals expressed by William James in his new book, The Varieties of Religious Experience (1902). Bryan found the role of philosopher increasingly congenial during his long presidency, but he continued to expound on psychological subjects in his speeches and occasional writings.

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71 Out of 31 charter members, Bryan was the twelfth—and last—to be elected president. See Ernest R. Hilgard, ed, American Psychology in Historical Perspective (Washington: American Psychological Association, 1978), 4-5.
73 Ibid., 82.
The Lindley years

Bryan's shift to administration spelled the end of his research career, and marked the beginning of a new period for psychology at Indiana. At first the changes seemed minor. Lindley took over as head of the Department of Philosophy, and Bergström was promoted to professor of pedagogy and became director of the psychological laboratory. Gradually, however, other changes became apparent. As university enrollments increased, undergraduate teaching became more important. The research program became more applied, oriented mainly toward problems in education and, to a lesser extent, mental health.

Although Bryan continued to influence the direction of psychology at Indiana as president of the university, his role was limited. In personnel decisions he continued to favor Indiana University alumni, and he sought faculty who shared his broad outlook on psychology as a practical endeavor as well as an intellectual discipline. Consequently, for the next 40 years the department was headed by a succession of psychologists who held doctorates from Clark University. There is little evidence that the department received special consideration from the Bryan administration. In fact, Bryan seems to have been careful to avoid even the appearance of favoritism, and tended to let the department justify its own support. Bryan remained on the teaching staff through at least the 1920s, but confined himself to a course in the philosophy of ethics.

Bryan's formal inauguration as president of Indiana University coincided with the dedication of Science Hall in 1903 (renamed Lindley Hall in 1957). The Department of Philosophy was located in the new building along with other science departments. Lindley's forte was teaching and administration rather than research. Faced with the task of leading the psychology enterprise begun by his mentor Bryan, Lindley concentrated on fostering links with education and mental hygiene. Research still revolved around local needs and opportunities, but it shifted away from concern with the natural history of normal life toward the solving of individuals’ psychological problems. The undergraduate program continued to produce a stream of future psychologists.

The student career of Lewis M. Terman bracketed the change in the department's leadership. A native Hoosier and former rural schoolteacher, Terman attended Indiana University from 1901-03, graduating with both baccalaureate and master's degrees. He developed a close relationship with Lindley, whom he called his “chief mentor.” In describing the influence of the department, he said:
I got something more important than grades and degrees. In the classes of Bryan, Lindley, and Bergström I became fired with the ambition to become a professor of psychology and contribute something myself to the science. Bryan and Lindley were brilliant and inspiring teachers. Bergström was at first disappointing because of his modesty and lack of personal force, but his solid worth soon became evident. He was not only a wizard with apparatus, but an able experimentalist and scholar.\textsuperscript{75}

Despite Bergström’s efforts, Terman showed little promise for laboratory work. That, however, did not prevent him from going to Clark for his doctorate, aided by a strong recommendation from Lindley.\textsuperscript{76} He received his PhD in 1905, and soon embarked on his pioneering work in mental testing.\textsuperscript{77}

Another student who was significantly influenced by Lindley was psychiatrist Edward J. Kempf, a highly original contributor to psychobiological theory. He received his BA in psychology in 1907. According to his autobiographical account:

My studies in psychology in Indiana University under Professor Ernest H. Lindley, who was a friend of G. Stanley Hall, William James, and Adolf Meyer, decided me to study the medical sciences, particularly physiology and pathology, in order to understand by natural physiological processes the human organism and its mental abilities evolved from lower forms of life.\textsuperscript{78}

Kempf went on to earn his MD from Western Reserve Medical School, specializing in psychiatry. From 1911 to 1913 he was on the staff of the Central Hospital for the Insane in Indianapolis, where he was able to remain in contact with the department. Lindley encouraged Kempf to report his case studies dealing with the social psychopathology of psychoses to Adolf Meyer at Johns Hopkins University. As a result, Kempf was invited to join the staff of Phipps Psychiatric Clinic. Aided by his wife, who was also a physician, Kempf eventually went into private practice as a psychotherapist and continued his research in psychobiology.


\textsuperscript{76} In a letter to Hall, Lindley called Terman “a decidedly brilliant man,” saying “I think I have never recommended a man to you, with more confidence than I do Mr. Terman.” Lindley to Hall, 13 June 1903; Hall Papers/Terman.


Connections to education

Indiana University had long served as training ground for teachers, and had established a chair in pedagogy in 1886 in the Department of Philosophy. The curriculum in pedagogy was closely linked with psychology, and a number of professors had held appointments in both subjects over the years. As the new president, Bryan strongly supported the professionalization of teaching. In 1902 Bergström was placed in charge of pedagogy as well as the psychological laboratory. Two years later he headed an independent Department of Education that was formed out of the pedagogy program that had evolved within the Department of Philosophy over the past fifteen years.

By 1908 the education department had grown into the School of Education, dedicated to improving the professional training of teachers. Prompted by new state certification requirements for teachers, a large demand for courses in education arose. In a related development, pedagogy faculty member Elmer B. Bryan (1865-1934) was appointed principal of the Philippines Normal School in 1901 under a joint arrangement with Indiana University. By 1903 he had become superintendent of education for the entire Philippines, and employed nearly 800 American teachers. An Indiana alumnus who had done graduate work at Clark University, Elmer Bryan was listed a professor of educational and social psychology from 1903-05, reflecting the fluid administrative and intellectual boundaries between psychology and education.79

Academic standards were a major issue during the first years of Bryan’s administration as Indiana sought to qualify for membership in the elite American Association of Universities (AAU). Grade inflation was a particular problem. Lindley played a key role in establishing grading policies and guidelines within the university around 1909. Graduate education was another area of concern. Although the university had awarded graduate degrees since 1882, they were largely honorary and the requirements varied widely among departments. As part of his larger plan to diversify and strengthen the university’s professional programs, Bryan organized the Graduate School in 1908. The following year Indiana University was admitted to the American Association of Universities.80

In 1908 Bergström accepted an offer to join the Stanford faculty.81 After his departure, Melvin E. Haggerty (1875-1937) was appointed director of

79 Not related to William Lowe Bryan, Elmer B. Bryan went on to successive tenures as president of Franklin College, Colgate University, and Ohio University. Clark, Indiana University, v. 2, 41, 102-105; Gilstad, “100 Years of Teaching.”
80 Clark, Indiana University, v. 2, 49.
81 He died two years later at the age of 42. His death left an opening at Stanford that was filled by his former
the psychological laboratory. A Hoosier native, Haggerty completed his bachelor’s degree at Indiana University in 1902. Returning for graduate study in psychology in 1906, he received his MA the following year. He then enrolled at Harvard for three years, where he became involved in research in comparative psychology under Robert M. Yerkes. Yerkes had studied various species ranging from worms to mice in his quest to trace the evolution of animal intelligence from simpler forms of life to the human species. The lower primates, with their obvious similarities to humans, occupied a key position on his research agenda, but the costs of obtaining and caring for them made such research difficult.  

With Yerkes’ help, Haggerty was able to conduct some primate research at the New York Zoological Park. During the summer of 1908 he spent nearly 300 hours studying imitation among various primates, including cebus and macacus monkeys, orangutans, and a chimpanzee. He received his PhD from Harvard in 1910. Partly as a result of Haggerty’s dissertation research, Yerkes was convinced that he should focus his psychobiological program around primates.

Meanwhile Lindley hoped to bring Haggerty back to Indiana in order to strengthen the department’s research program. Lindley admitted to Yerkes that, although his own research output had been meager, “the course of sound psychology in Indiana goes forward not only among teachers but also among the medical men and the ministers.” In 1909, Haggerty was appointed an assistant professor of psychology and taught summer school, but he remained on leave until the following year. Although he continued to teach comparative psychology, he was soon forced to abandon his animal research due to lack of funds and pressure to apply psychology to education and mental hygiene. In his first course in 1909, he taught 18 students with Washburn’s recently published textbook, The Animal Mind. The following fall Haggerty instructed seven students in comparative psychology. Beginning with the amoeba and paramecium, the course covered worms,
crayfish, chicks, mice, rats, dogs, and—possibly—a monkey. During the same semester he and Lindley inaugurated a course in applied psychology.

Like his predecessor as laboratory director, Haggerty found that much of his effort was taken up in applied research in educational psychology. Shortly after the School of Education was formed in 1908, an “orthogenics clinic” was organized to investigate the behavioral problems of schoolchildren. The facility was patterned after the psychological clinic begun by Lightner Witmer at the University of Pennsylvania in 1896. Haggerty was listed as an instructor for a course in “Orthogenics” first offered by the School of Education in 1910-11. Its purposes were:

(1) to make a thorough investigation of the literature on defectives and subnormals from current periodicals, reports, and books; and (2) to furnish the student opportunity to do laboratory work in the clinic by actual first-hand observations on, and experiments with, different types of defectives.

This course was given until 1916, and apparently a few cases were examined in the orthogenics clinic, including one that was reported by a student in the professional journal *The Psychological Clinic*. 

Haggerty attempted to harness popular interest as well as provide a focus for his wide-ranging activities in educational psychology by organizing the Indiana University Cooperative Bureau of Educational Research in 1913 to provide services to the state school system. In connection with this bureau and the psychological laboratory, he conducted numerous studies concerning educational measurement in children. Among them was an early investigation of sex differences in verbal recall, published in an article co-authored by Edward Kempf. As Haggerty found his energy drawn into applied areas, he sought to construct a satisfying rationale for his diverse work in psychology. In 1912 he wrote to Yerkes that psychology should aim to discover “the fundamental laws of learning.” Learning was the subject that could encompass both practical applications as well as scientific research.

88 For comparison, 28 students were enrolled in experimental human psychology during the same term.
89 *Indiana University Catalog*, 1911-12, 148
90 Mary Rogers, “A Case from the Indiana University Clinic,” *Psychological Clinic*, 1912, 6, 144-151.
93 Haggerty to Yerkes, 5 October 1912; Yerkes Papers/23/413. See also O’Donnell, *The Origins of Behaviorism*, 230-231.
In addition to Haggerty’s clinically oriented work offered in the School of Education, Lindley taught a course on “Mental Pathology” in the Department of Philosophy in the 1910s. The course included a field trip to the Central Hospital for the Insane in Indianapolis, evidently arranged by Lindley’s former student, psychiatrist Kempf. Lindley was also involved in public efforts to promote mental health as the first president of the Indiana Society for Mental Hygiene, a group organized in 1916 following a statewide survey of mental health problems and facilities. The society’s purpose was: “To work for the conservation of mental health; for the prevention of mental diseases and mental deficiency; and for improvement in the care and treatment of those suffering from nervous or mental diseases or mental deficiency.” The Indiana group in turn was associated with the American Society for Mental Hygiene.94

One of the last visible traces of Haggerty’s research interests in comparative psychology was a popular article in the *Atlantic Monthly* dealing with the evolution of animal intelligence, published in 1913.95 Unexpectedly, the following year he was able to return to his earlier interests by serving as an advisor to graduate student Calvin P. Stone. Like so many Indiana University psychology students, Stone was born and educated in Indiana. He obtained both BS (1910) and BA (1913) degrees from Valparaiso University, and had experience as a schoolteacher. Working under Haggerty, he completed his master’s degree in 1916 with a thesis on light discrimination in dogs.

In April 1914, famed educational psychologist Edward L. Thorndike came to IU as the featured speaker at a two-day conference on Educational Measurements. It was the first visit to the state by the Columbia University Teachers College professor. Nearly 150 college professors and school superintendents from Indiana, Ohio, Kentucky, and Michigan attended. Bryan, as IU president, gave the opening address on “Science and Education” and Lindley, as head of philosophy, presented the closing speech on “Individuality, Leadership, and Democracy.” Afterward, the *IU Alumni Quarterly* bragged: “It is safe to say that this conference set forward several years the scientific study of education in Indiana.”96

After Haggerty went to the University of Minnesota as a professor of educational psychology in 1915, Stone followed and eventually obtained his PhD there under Karl Lashley.97 Stone was able to continue doing research

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96 *Indiana University Alumni Quarterly*, 1914, 1, 304-305, quote on 305.
97 The year after his MA Stone worked as director of psychological research at the Indiana State Reformatory. His graduate career was also interrupted by his service in World War I. After earning his PhD from Minnesota in 1921, he went to Stanford the following year, where he remained for the rest of his career.
on animal behavior as a professor at Stanford, whereas Haggerty’s transition from animal researcher to applied psychologist was complete. 98

Lindley, like Bryan before him, moved from psychology into university administration, and left Indiana in 1917 to become president of the University of Idaho, and, later the University of Kansas. 99 Lindley’s departure added to the disruption already caused by World War I. During his tenure, psychology had continued to play an important part in undergraduate education, and its service roles within the university and the state were expanded. Whatever national reputation the department enjoyed during this period was due to its enduring experimental tradition augmented by recent applied work. For nearly three decades the psychology program had continued along the pragmatic course begun by Bryan. With the loss of its senior faculty members, its future direction was less clear.

98 Haggerty went on to a distinguished career in his adopted field, eventually becoming Dean of the School of Education at Minnesota and serving as a president of the American Educational Research Association.

99 Bryan’s older brother Enoch Albert Bryan, a former university president himself (of Vincennes University and of the State College of Washington) was commissioner of education for the State of Idaho from 1916-23. From 1920 to 1940 Lindley served as Chancellor of the University of Kansas, and became well known as an educational statesman for his role in liberating that university from the governor’s direct control. See F.D. Farrell, “Dr. Lindley’s Christmas Present,” Kansas Historical Quarterly, 1956, 22, 67-77.
CHAPTER 3

Extending the Boundaries of Science and Service

After Lindley left, undergraduate psychology alumnus William F. Book (1873-1940) was appointed head of the philosophy department. A native Hoosier, Book had received his BA in psychology from Indiana University in 1900 and completed his doctorate under G. Stanley Hall at Clark in 1906. Spending the next six years at the University of Montana, he taught psychology and helped establish an experimental laboratory. He returned to Indiana University in 1912 for one year as a professor of educational psychology before serving as the director of vocational education of the Indiana State Board of Education for the next four years.

Given Bryan’s attitudes, Book was a logical choice to chair the department. He possessed the desired credentials from Indiana and Clark, and had demonstrated his ability in applied educational psychology, as both a researcher and an administrator. Furthermore, Book’s dissertation research was based directly on the pattern laid down by Bryan in the 1890s. He investigated the learning of typewriting, another occupational skill important in industrial society. Working for the State of Indiana, Book conducted a number of surveys of the intelligence of high school students. Drawing on this background, he published extensively in educational psychology, including some popular treatises such as How to Succeed in College.

Faced with burgeoning enrollments beginning around 1917, Book’s immediate task as department head was to rebuild the psychology faculty. He was the only full-time member; two recent master’s recipients, Joseph A. Williams and Thomas E. Nicholson, were pressed into service. The ranks were further bolstered by the arrival of Sidney L. Pressey (1888-1980) in 1917 under a special research appointment.

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100 W.F. Book, “The Psychology of Skill with Special Reference to Its Acquisition in Typewriting,” University of Montana Publications in Psychology 1908, 1, 1-188.

Postwar reorganization

Fresh from his doctoral research under Robert Yerkes at Harvard, Pressey came to Indiana to conduct research on educational problems in the state. He began by conducting extensive tests on schoolchildren in nearby counties, and created and improved various measurement techniques. In his surveys of Indiana schools, Pressey was interested in determining both general ability and achievement in the basic school subjects of pupils in grades 1 through 12. He developed and administered a number of relatively simple and valid tests, as well as a personality inventory, which received widespread acceptance by educators. Pressey worked at Indiana for four years, publishing over 50 articles and reports on educational psychology. He cultivated a wide array of contacts among educators in the state, further strengthening the department's role in this area.\textsuperscript{102}

Book lobbied Bryan and the board of trustees concerning the welfare of the psychology program, and bombarded them with memoranda and statistics. By 1919, he managed to gain approval for the renaming of the department as the Department of Psychology and Philosophy. The change, which gave formal recognition to the prolonged emphasis on psychology within the Department of Philosophy, was evidently justified on the basis of enrollment figures, which indicated that the enrollment in psychology courses was more than twice as large as that in philosophy.\textsuperscript{103} Book also capitalized on the testing work performed in the department by printing and selling mental test blanks commercially. In 1920-21 some 100,000 forms were sold, bringing in $625 to the department.\textsuperscript{104}

The department also began looking beyond its own alumni for faculty members.\textsuperscript{105} The war had ushered in a new era for American psychology. Buoyed by their engagement in practical military problems, psychologists were eager to extend their professional service roles. Book shared this enthusiasm, and within two months after the Armistice he submitted a special report to president Bryan on the future of psychology at Indiana. He reviewed the widespread use of mental tests for classifying military personnel, and was optimistic about the extension of these methods during peacetime in order to “conserve and rightly use all kinds and grades of human


\textsuperscript{103} The figures reported by Book for psychology and philosophy, respectively, were: 1917-18: 394 & 163; 1918-19:648 & 316; 1919-20: 1010 & 286; 1920-21:528 & 154; W.F. Book, "[Report to Board of Trustees]," 20 March 1920; idem, 1921; Indiana University Archives/Bryan Papers C286/Box 33.

\textsuperscript{104} Book, "[Report to the Board of Trustees]," 1921.

\textsuperscript{105} Bergström, hired in 1894, had been the only non-alumni faculty member appointed before Pressey in 1917.
He noted the increasing importance of cooperative research and the creation of National Research Council as a coordinating organization. Like many of his colleagues, Book embraced the belief that psychological research could make basic contributions to the scientific solution of social problems. Issues of individual motivation and national morale had been raised by the war, and Book suggested that the “study of the cohering factors in our society” confronted psychologists with a major task.

Practically, Book’s plans were constrained by institutional realities. The university could commit resources to psychology only insofar as the demands of the teaching program warranted. Beyond that, the department could hardly expect to attract funds from governmental and philanthropic sources without highly visible graduate training or research programs. Thus Book’s strategy for improving the department depended chiefly upon hiring promising faculty members and aiding their development in whatever way possible. By judiciously extending and carefully balancing the department’s teaching, research, and service roles, Book was able to slowly build a solid, well-rounded program over the next decade and a half.

New faculty: Kitson and Kantor

Book’s broad concerns were at least partly addressed by the appointment of Harry D. Kitson, a specialist in vocational psychology, as an associate professor in 1919. Like Pressey, Kitson (1886-1959) had no previous connection with Indiana University, having been employed as an instructor at the University of Chicago since receiving his PhD there in 1915.

Upon arriving at Indiana, Kitson embarked on an ambitious program of research and publication in the area of vocational adjustment. Drawing together diverse threads from personnel management, the vocational guidance movement, and experimental psychology, Kitson attempted to define the field of vocational psychology and the central role that psychologists should play in it. He championed the experimental approach to the study of occupations pioneered by Bryan over two decades earlier. Both Bryan and Book supported Kitson’s research, which resulted in the systematic textbook *The Psychology of Vocational Adjustment*, published in 1925. Among his other activities, he and Edgar L. Yeager (1898-1975), a newly appointed instructor in the department, published a series of vocational information bulletins in cooperation with the Indianapolis Chamber of Commerce. After six productive years at Indiana, Kitson went to Teachers College of

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107 Ibid., 8.
Columbia University as a professor of education. He was there for the rest of his career; he also served as longtime editor of *Occupations*, the journal of the Vocational Guidance Association.

One of Kitson’s fellow graduate students at Chicago was J. Robert Kantor (1888–1984). He received his PhD in 1917, and taught for a few years at the University of Minnesota and at the University of Chicago. Learning about an opening on the Indiana faculty from Kitson, Kantor was hired in 1920. Like Pressey and Kitson, Kantor had no prior connection with the university. Kantor’s interests were primarily theoretical and systematic, presenting a strong contrast to the department’s traditional empirical and practical thrust. At Chicago, a leading center of American functional psychology, Kantor had concentrated on psychology’s philosophical foundations, and had written his thesis on “The Functional Nature of the Philosophical Categories.” When he came to Indiana, Kantor had already published a number of papers and was working on a major treatise.

Kantor was strongly committed to constructing a comprehensive philosophy of science for psychology. He vigorously criticized current theories of the mind, castigating them as “spookology” rather than psychology. “My point was to demolish both structuralism and functionalism,” he said later. This philosophical effort took precedence over experimental work, he believed, since it provided an intellectual context for such empirical study. Kantor’s first attempt at providing a naturalistic framework for psychology resulted in a two-volume book, *Principles of Psychology* (1924–26). Consciously echoing the titles of earlier works by Herbert Spencer (1883) and William James (1890), Kantor’s book presented a system of “organismic psychology” which stressed the interactions between biological organisms and their physical environment. Like many of his contemporaries, he viewed stimulus and response as fundamental concepts, but he analyzed them in holistic terms.

Following this major work, Kantor elaborated his system through studies of special areas in psychology, such as social psychology and the psychology of language, and philosophical problems. He found Indiana a congenial place to work, and received the security of a full professorship in 1923. Although other department members had made significant scientific contributions in the past, Kantor was the first Indiana University psychologist to consistently pursue independent research without addressing local, applied interests that extended beyond his teaching duties. Like Bryan, Kantor was

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11 J.R. Kantor, personal communication, 4 May 1978.
in many respects a philosopher, and they both shared an abiding faith in the spirit of naturalism. But the two men had different goals. Bryan valued philosophy for its moral values, and viewed their application as a route to the good life. In contrast, Kantor saw philosophy as an analytic tool to be used in building a rigorous logical foundation for psychology. He was more concerned about general propositions rather than with specific cases, and focused on systematic description rather than ethical prescription.

Kantor had a challenging teaching style, and one undergraduate student’s recollection of a course taught by him in the early 1920s suggests the difference between Kantor’s and Bryan’s approaches. One semester, Kantor happened to substitute for Bryan in “Ethics,” a course that had been taught by Bryan for decades. The student reported that Kantor jettisoned the standard syllabus and “opened the course by asking the students what they believed to be right and wrong and why they believed it. We never got past that question in the entire semester.”113 After describing some of the spirited debate encouraged by Kantor, the student called the course the high point of his undergraduate and graduate education. In his words:

It seemed to me that that teacher . . . shattered a crust that had lain like a blanket over my thinking. I took from it not only a new respect for evidence but a new conception of evidence, a readiness I had not had before to look at the ground on which I stood, and a new sense of how to probe into my foundations and scrutinize them.114

Birth of the psychological clinic

By 1921 Book’s efforts to improve the department were starting to pay off, and he boasted privately to president Bryan “more articles and pages were published from the I.U. laboratory than any other university in the country.”115 Whether the statement was strictly true or not, the department did have a productive trio of researchers and writers in Pressey, Kitson, and Kantor, and was beginning to put together a PhD program. The department’s pride was showing in other ways as well. For the first time in many years, the university catalog for 1920-21 mentioned the department’s laboratory, claiming it “was the second psychological laboratory to be established in the United States, and is one of the best equipped laboratories in the country.”116

114 Ibid., 223.
115 Book to Bryan, 2 February 1921; Bryan Papers.
116 Indiana University Catalog, 1920-21, 139.
A year after his general report on the postwar future of psychology at Indiana, Book followed up with a specific proposal to establish a “child welfare research station” at the university. In presenting his idea, Book told the board of trustees: “A psychological clinic for deficient and abnormal children should be developed here at the University and at Indianapolis, and students definitely trained for dealing with this group of problems.”

The University of Iowa had established the first child welfare research station a few years earlier in an effort to improve the lot of children. Patterned after the agricultural research station, the child welfare center emphasized research, teaching, and dissemination of information. Throughout the 1920s a number of state universities created child development institutes with the aid of funds from Laura Spelman Rockefeller Memorial foundation. Child psychology occupied a key position in this interdisciplinary effort, and grew rapidly with the aid of popular support and foundation money.

Although the trustees rejected Book’s plan for a child welfare research station, they did approve the opening of the Indiana University Psychological Clinic in 1922. Herman H. Young (1887-1931), a clinical psychologist trained under Lightner Witmer at the University of Pennsylvania, was recruited as director. His wife, Mary Hoover Young (1891-1933), who was also a clinical psychologist, was hired as his assistant. Within a few months a satellite clinic was started at the Robert Long Hospital in Indianapolis. (When the James Whitcomb Riley Hospital for Children in Indianapolis opened in 1924, the unit was transferred to that facility.)

Begun as a laboratory and training facility for students in clinical psychology, the clinic was also to serve the state in the diagnosis and treatment of individuals with psychological problems. Although services were available to all ages, in practice the clinic dealt mainly with children. Because it had authority only to issue advice and recommendations, the clinic depended on existing community institutions—the home, the school, the court, and charitable groups—for treatment. As part of its effort to foster good communication with local agencies, the clinic established a graduate Fellowship in Clinical Psychology sponsored by the Local Council of Women in Bloomington.

The development of detailed and accurate case histories of clinic clients was the overriding concern of the program. Observations, psychological tests, teacher’s ratings, and personal and medical history were all included in constructing a case file. Diagnosis provided the basis for treatment
recommendations. In the Bloomington clinic’s first three years, 244 children were examined. Most of these were elementary school students; their teachers or other school officials had referred more than half to the clinic. A majority of the cases clustered around problems caused by borderline mental ability, and treatment recommendations correspondingly centered on special education classes. Throughout the 1920s the clinic caseload at Bloomington averaged 86 cases per year. The total at Indianapolis was considerably larger, averaging 372 per year, probably due in part to the policy during the first few years of routinely examining every patient in the children’s ward.

An independent department

In 1929 the Department of Psychology and Philosophy was split into two separate departments, giving formal recognition to the growth and diversification in psychology over the preceding decade. For the 1929-30 academic year the university catalog listed only two faculty members (in addition to Bryan) in philosophy, whereas psychology boasted eight. The psychology department offered a total of 70 courses (41 undergraduate, 29 graduate) compared to 27 (17 undergraduate, 10 graduate) for philosophy.

During the 1920s the rudiments of a PhD program in psychology emerged in the department. Although Indiana University had established a Graduate School in 1908, the first PhDs in psychology were not awarded until 1920. By the end of the 1920s, 14 doctorates had been granted, with dissertations falling into four major areas—clinical, education and testing, learning, and comparative. Nearly a third of the recipients had been employed in teaching or research positions in the department. The PhD program was built on a flourishing master’s program. During the decade, 28 MAs had been awarded; nearly half were to continuing doctoral students.

The department continued to be a major source of undergraduates headed for other doctoral programs in psychology. The importance of Indiana as a supplier of undergraduates destined to become professional psychologists was quantified in a 1928 study of American Psychological Association members and associates. Although only one of the 616 respondents held an Indiana University PhD, 22 had obtained their bachelor’s degrees there. This total was second only to Harvard, which accounted for

120 Herman H. Young & Lettie Wadsworth, “Psychological Clinic, Indiana University: Report of the First Three Years’ Work at Bloomington Branch, September, 1922 to August, 1925,” Indiana University Newsletter, 1925, 13 (11), 1-8.
122 Indiana University Catalog, 1929-30. See also the memoir by Henry Veatch, Toward a History of the Indiana University Philosophy Department in Bloomington: The Years 1929-65 (Bloomington: Privately printed by the Department of Philosophy, 1997).
23 undergraduate degrees. The study also revealed that Indiana had three undergraduate alumni on its psychology faculty, more than any other American university. As American psychology expanded in the 1920s, however, Indiana became less prominent as a baccalaureate source of psychology doctorates.

Among the students who passed through the psychology department on their way to other careers was Lee Norvelle (1892-1984), who later led efforts to establish speech and theater programs at Indiana University. After a delayed start in school, Norvelle transferred to Indiana in 1920 for his senior year in college. He worked closely with Book in analyzing data on learning incentives gathered from tests of some 3,000 high school seniors throughout the state. Book was seeking practical ways to motivate students to advance beyond the learning plateaus that had first been observed by Bryan and Harter in their study of telegraphers.

Norvelle proved to be an able assistant, and Book urged him to consider a career in the department, encouraging him to take a master’s degree before going on to Clark for a doctorate in psychology. But Norvelle had other plans. He wanted to teach speech and theater in a college, and was able to obtain a position at the University of Iowa from 1921-25. He returned to Indiana University in 1925 as a member of the English department, and began working part-time on his PhD in psychology, which he completed in 1931. He remained at Indiana for the rest of his career, and was intimately involved in the evolution of the departments of Speech Communication, Theatre and Drama, Speech and Hearing Sciences, and Radio and Television. For Norvelle, Book and the psychology department provided the professional training he desired for his chosen career.

In addition to the Young’s clinical work and Kantor’s theoretical studies, the department expanded its experimental program starting in the mid-1920s. In 1925, George S. Snoddy (1882-1947), former department head at the University of Utah, came to Indiana as a professor. A 1915 Clark PhD, he had conducted research on human learning and tested the intelligence of Utah schoolchildren. At Indiana he devised experiments using a star shaped design that subjects traced while looking in a mirror. From his results, Snoddy proposed a theory of learning that identified two processes in the attainment of skill. The first, called primary growth, concerned learning that was improved by relatively long periods between trials. Secondary

growth was next, and was enhanced by the reduction of time between trials. In sum, optimum learning would occur with spaced practice at first, and then massed practice. He considered the two processes antagonistic to each other, and interpreted the learning curve plateau as their area of greatest interference.\textsuperscript{126} Snoddy’s theory engendered criticism, however, and was not widely accepted.\textsuperscript{127}

\textbf{Winthrop N. Kellogg: The complete empiricist}

Among the Indiana undergraduates who went elsewhere to gain their doctorates in psychology during the 1920s was Winthrop N. Kellogg. Kellogg (1898-1972) received his bachelor’s degree at Indiana University in 1922, and then went to Columbia for graduate work. He finished his PhD in 1929 there and was soon hired by Indiana. Interested in experimental psychology, especially psychophysics, Kellogg had also done research concerning the correlation of intelligence with physical factors. In addition, he was adept at designing and building his own experimental apparatus.

Soon after his arrival Kellogg began to formulate a plan for an ambitious project dealing with the comparative psychology of primates. In an article, “Humanizing the Ape,” he argued for comparative developmental studies of humans and infrahuman primates.\textsuperscript{128} In order to determine the relative influence of nature and nurture on behavior, he proposed to raise a baby chimpanzee simultaneously with his own infant son Donald. Bryan supported Kellogg’s plan, and provided a strong letter of recommendation when Kellogg attempted to obtain a young chimp from the Philadelphia Zoological Society in 1930. Unsuccessful, Kellogg turned to Robert Yerkes, head of the Yale Laboratories of Comparative Psychobiology, for advice.\textsuperscript{129}

Taking Kellogg under his wing, Yerkes helped shape his research strategy. Kellogg decided to apply for a Social Science Research Council fellowship to work at the Yale Anthropoid Station in Florida in order to prepare for his project, which he estimated would take five years. He was anxious to start as soon as possible, while his son was still quite young and before he and his wife Luella had additional children. Although he was only beginning to gain experience with handling primates by keeping a couple of \textit{macacus rhesus} monkeys in his house, Kellogg was confident that he and his wife were up to the task of living with a chimpanzee.\textsuperscript{130}

\textsuperscript{126} George S. Snoddy, \textit{Evidence for Two Opposed Processes in Mental Growth} (Lancaster, Pa.: Science Press, 1935).
\textsuperscript{129} Kellogg to Yerkes, 17 September 1930; Yerkes Papers/28/535.
\textsuperscript{130} Yerkes to Kellogg, 15 November 1930; Kellogg to Yerkes, 15 November 1930; Yerkes Papers/28/535.
As the fellowship application deadline approached at the end of 1930, Yerkes tried to temper Kellogg's enthusiasm by suggesting that he use the fellowship to gain more experience with apes and to see if his larger plan was feasible. In his research proposal, Kellogg was explicit about his interest in raising an ape and a human child together in order to test the environmental thesis. As he put it:

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\text{In spite of a great deal of theorizing upon the effect of environmental as against hereditary influences, no controlled experiment of this type has yet been completed to discover by actual trial just how far the ape would develop in such surroundings. . . . Although this animal by all measures is to be regarded as the organism closest to man both morphologically and psychologically, the inclination has been to compare the behavior of a young or adolescent ape with that of a young or adolescent human, to the obvious advantage of the latter, without considering the serious possibility that his difference may be due in large measure to the effect of years of divergent training upon both organisms.}\]

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After Kellogg was awarded the SSRC fellowship in 1931, Yerkes advised him to “keep entirely quiet about [the] special inquiry” so as not to arouse unwelcome publicity.132

Yerkes was sensitive to the opinions of his patrons, and tried to avoid controversy and the appearance of sensationalism. A few weeks later Kellogg’s article on “Humanizing the Ape” appeared in print, prompting Yerkes to criticize Kellogg for offending some comparative researchers with his remarks. Kellogg replied graciously, saying that he realized his early statements about testing the environmental thesis were overenthusiastic. Evidently he also accepted Yerkes’s bland restatement of the study’s objective as “an attempt to discover how an infant great ape will respond to a typically human environment.”133

Kellogg’s article was discovered by a New York news agency, which pursued the story. Apparently Kellogg managed not to disclose the research plans he had made in the year after writing the speculative piece, and kept the Yale connection unmentioned. Apologizing for his unintended gaffe, he wrote to Yerkes offering to resign the fellowship if Yerkes wanted him to. Yerkes brushed off the incident, telling Kellogg not to worry about it.134

132 Yerkes to Kellogg, 5 March 1931. Yerkes wrote a strong recommendation to the SSRC fellowship committee concerning Kellogg: Yerkes, “Application of W.N. Kellogg for Social Science Research Fellowship,” 8 December 1930; Yerkes Papers/28/535.
133 Yerkes to Kellogg, 23 March 1931; Kellogg to Yerkes, 9 April 1931; Yerkes Papers/28/535.
134 Kellogg to Yerkes, 20 April 1931; Yerkes to Kellogg, 24 April 1931; Yerkes Papers/28/535.
The Kellogg family moved to Florida in the summer of 1931, setting up their household near the Yale Anthropoid Station located in Orange Park. Soon after arriving Kellogg was surprised and dismayed to discover that some other researchers at the station were conducting a developmental study of an infant chimpanzee. Evidently, Yerkes had neglected to tell Kellogg that another postdoctoral fellow, Carlyle Jacobsen, and his colleagues had been studying the animal since its birth nearly a year before. The infant—named Alpha because it was the first ever born in the colony—had spent a considerable amount of time being cared for by the Jacobsen's in their home, although they had made no explicit attempt to “humanize the ape.”

The Kelloggs were hardly settled before an infant chimpanzee—a female named Gua—became available and joined the family. When the study began in July, Donald and Gua were 10 months and 7 1/2 months old respectively. The two were treated as nearly alike as possible, being dressed, bathed, fed, and taught in a similar manner. A variety of tests and measurements were made of their development on a regular basis, and recorded in a scientific diary.

By October the experiment was already taking its toll on Kellogg and his wife. He wrote to Yerkes:

> To be with any one organism, continuously hour after hour, during every waking minute, for days, months—and if we presume the continuation of the experiment—possibly years, is a nerve racking proposition whether this organism be animal or human.\(^{136}\)

Gua’s strength was already a problem, and Kellogg predicted the study could last only six or eight more months.\(^{137}\)

As expected, Gua matured physically much faster than Donald. She also learned other behavior more quickly as well, such as eating with a spoon, drinking from a glass, and going to the toilet. She was highly affectionate, and seemed more dependent on human company and approval than Donald, crying pitifully when left alone. Both Donald and Gua would respond to simple directions to make gestures and to manipulate objects. Despite Gua’s progress in acquiring behavior common among humans, her development was not up to Kellogg’s earlier expectations. In particular, she made no apparent effort to speak or reproduce human utterances.\(^{138}\)

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\(^{135}\) This information was provided by Ernest R. Hilgard, who spent the summer of 1931 at the Orange Park station. E.R. Hilgard, personal communication, 9 September 1987. See Carlyle F. Jacobsen, Marion M. Jacobsen, & Joseph G. Yoshioka, “Development of an Infant Chimpanzee During Her First Year,” Comparative Psychology Monographs, 1932, 9, #41.

\(^{136}\) Kellogg to Yerkes, 23 October 1931; Yerkes Papers/28/535.

\(^{137}\) Kellogg to Yerkes, 1 October 1931; Yerkes Papers/28/535.

\(^{138}\) On the basis of expert opinion, including Yerkes’s, Kellogg had hoped the primate could be taught to communicate vocally. See Robert M. Yerkes & Blanche W. Learned, Chimpanzee Intelligence and Its Vocal Expression (Baltimore: Williams & Wilkins, 1925); Robert M. Yerkes & Ada W. Yerkes, The Great Apes: A Study of Anthropoid Life (New Haven: Yale University Press, 1929), esp. Ch. 24.
After nine months of work, the study ended in the spring of 1932. Gua stayed at Orange Park and the Kelloggs returned to Bloomington. Soon Kellogg reported some of the results at the annual meeting of the Midwestern Psychological Association, and began writing a book in collaboration with his wife. The book, entitled *The Ape and the Child*, was published in 1933. Well-written and engaging, the book described the research in a semi-popular style. Not surprisingly, the news media picked up the story, and articles appeared in the *New York Times* and the *Science News Letter*.

Yerkes reacted angrily to the publication of *The Ape and the Child*, feeling that Kellogg had not consulted him sufficiently about it. The causes of Yerkes's violent reaction are somewhat obscure, but he apparently objected to some of the conclusions. It was characteristic of him to withdraw support from students and colleagues when they did not meet his expectations, even if they had been unstated. Kellogg considered himself an independent investigator, and had offered to send data and reports to Yerkes for his comments. Yerkes wanted more. He had a proprietary interest in all research done at the Orange Park station, and wanted to exercise editorial control. Yerkes brought his concerns to the station's advisory board, explaining that the book would not be included in the publications list of the laboratories. Without specifying his criticisms, he said: “Omission of the report in the laboratory list therefore implies official disapproval.” Then Yerkes communicated his censure to the head of the Social Science Research Council.

Throughout the rest of his Indiana career Kellogg continued his comparative research, but conducted it in the laboratory. He co-published, along with student Wardell Pomeroy, what was apparently the first experimental study of learning by snakes in 1936, a description of maze learning by water snakes. In the late 1930s Kellogg obtained funds to build a laboratory for research on conditioned behavior in dogs. With the aid of faculty colleagues and graduate students he established an extensive experimental program to investigate the physiological and conditioned responses of decorticated dogs. The lab proved to be an excellent training ground for students, who could work on a discrete problem within a well-defined research paradigm.
Roland C. Davis and psychophysiology

Roland C. Davis (1902-61), another Columbia PhD (1930), joined the faculty in 1931. An inventive technician and able experimentalist, he pioneered the study of physiological psychology in the department. He sought to understand the relation between behavioral responses and patterns of sympathetic nervous system activity, and made important contributions to the measurement and interpretation of bioelectrical events in humans. While at Columbia, he began investigations of the galvanic skin response by reviewing the literature and clarifying the major issues in its study. For the next thirty years he devised instrumental techniques for measuring and recording muscular tension, muscle action potentials, circulatory changes, and other psychophysiological responses.146

Among the students Davis mentored was Oran W. Eagleson (1910-97), an African-American from Bloomington. His parents died when he was a boy, and he lived with his sister and brother growing up. He majored in psychology, graduating with a BA in 1931 and an MA in 1932. Employed in a shoe repair shop since high school, he worked his way through college and graduate school as a shoe shiner and shoe repair finisher. Under the supervision of Davis, he completed his dissertation, “Comparative Studies of White and Negro Subjects in Learning to Discriminate Visual Magnitude,” and obtained his PhD in 1935. He was among the first ten African-Americans to receive a doctorate in psychology in the U.S. In 1936, he became a faculty member at Spelman College in Atlanta, where he had a long and distinguished career.147

With the specialized laboratories of Davis and Kellogg, the department was gaining the capability to conduct advanced research. The laboratories, along with the clinic, also provided the means to train increased numbers of graduate students.

C.M. Louttit and applied psychology

In 1931 Herman Young, the director of the psychological clinic, caught pneumonia and died at the age of 43, leaving a major gap in the department faculty. Chauncey McKinley Louttit (1901-56), who had been teaching for a year at Ohio University, soon replaced him.148 Louttit had been trained in comparative psychology, earning his PhD under Robert Yerkes at Yale

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148 Ohio University psychologist James P. Porter, an Indiana alumnus and close colleague of William Book, probably aided in the job negotiations.
in 1928. Since graduation, however, he had been steered in the direction of applied psychology. His experiences before coming to Indiana University illustrate the difficulties of launching a research career in psychology during the Depression, and provide important background for his activities in the department.

Louttit’s first paid employment in psychology foreshadowed his later career. After receiving his bachelor’s degree from Hobart College in 1925 Louttit became an assistant to Stanley D. Porteus, director of research at the Vineland Training School for the Feebleminded, located in New Jersey. Armed with a strong recommendation from Porteus, Louttit obtained a graduate assistantship from Yerkes, who had recently moved to Yale University. Yerkes had funding from the National Research Council’s Committee for Research in Problems of Sex and was searching for a student to “devote a few years, if not his life, to the study of fundamental problems of sex.”

Louttit was one of the first graduate students recruited to Yale’s new Institute of Psychology (a forerunner of the Institute of Human Relations), a research and graduate training center established with major funding from the Rockefeller Foundation. Yerkes, finally gaining institutional support for his ambitious research program in comparative psychology, set Louttit to work on the sexual behavior of the guinea pig. His dissertation, completed in 1928, was published as a monograph in the *Journal of Comparative Psychology*, which Yerkes edited.

Louttit also demonstrated a flair for library research, publishing the massive “Bibliography of Bibliographies in Psychology: 1900-1927” with the encouragement of his advisor.

Louttit landed his first job, at the University of Hawaii, through Porteus, who had become director of its Psychological Clinic. He was soon disappointed in the position, which consisted of routine testing of school children rather than research, and felt intellectually isolated. Partly out of loyalty to Porteus he decided to stay for two years and then go somewhere “more scientific.” Trying to make the best of the situation, Louttit confided to a graduate school friend:

*I realize the experience gained here will not be valueless, especially on the clinical side. I am not interested in clinical work, but the knowledge may come in handy.*

149 Porteus to Yerkes, 15 July 1925; Yerkes to Porteus, 20 July 1925; Yale University Archives/Chauncey McKinley Louttit Papers/Box 16/Binder 1-1.


152 Louttit to Harold C. Bingham, 29 December 1928; Louttit Papers/11/208.
Louttit’s professional involvement with applied psychology apparently displeased his scientific mentor Yerkes, and they maintained a distant, if cordial relationship.\textsuperscript{153} The Depression, which had begun in his second year in the islands, added to the job-hunting problems caused by slow communication with the mainland. He was able to secure a one-year appointment at Ohio University for the 1930-31 academic year, and taught a variety of courses in psychology there.

Louttit’s employment prospects for the following year were dim until he heard of the opening at Indiana University caused by Young’s death. There was no question about accepting the offered position, but Louttit was ambivalent about staying in applied psychology, musing to a friend: “I would like to go someplace where I could go on with some animal work. . . . But the Fates seem to decree otherwise.”\textsuperscript{154} At Indiana Louttit’s energies continued to be channeled into applied work, but he found new scope and support for his professional activities.

Upon arriving at Indiana University, Louttit found a small but thriving Psychological Clinic, now nearly a decade old. In addition to directing the clinic, he was responsible for the budding graduate training program in clinical psychology. Despite his misgivings about being an applied psychologist, Louttit turned his organizational and expository skills toward systematizing the field of clinical psychology. In order to rationalize the process of diagnosis in the clinic, he developed a standard 12-page form to record the client’s personal history and examination results. Louttit marketed the copyrighted form as the “Indiana Psychodiagnostic Blank,” and used the proceeds to help support the clinic.\textsuperscript{155}

Concerned by the lack of agreement over the definition, scope, and role of clinical psychology, Louttit wrote a systematic textbook entitled \textit{Clinical Psychology: A Handbook of Children's Behavior Problems}.\textsuperscript{156} Published in 1936, the book was an important contribution to this rapidly maturing field. Louttit synthesized the empirical literature using an elaborate classification scheme based on behavioristic concepts. His theoretical approach owed much to Kantor’s influence.\textsuperscript{157} For Louttit, clinical psychology was a field of

\textsuperscript{153} By 1930 Louttit was not listing Yerkes as a reference on his job applications. Yerkes had similar reactions to a number of other students, most of whom were not continuing his type of research program. See Louttit to H.C. Bingham, 7 October 1932; Louttit Papers/16/1932.

\textsuperscript{154} Louttit to Donald Adams, 27 May 1931; Louttit Papers/16/1931.


\textsuperscript{157} \textit{Ibid.}, 4 note 2.
applied psychology, drawing upon the basic science of psychology as well as parts of medicine, education, and sociology.\textsuperscript{158}

Louttit coupled his research and writing in clinical psychology with efforts to organize applied psychologists into effective professional groups. He helped start the Indiana Association of Clinical Psychologists (now the Indiana Psychological Association) in 1935. Although membership remained small, it provided an institutional locus for professionalizing activities. The Indiana Association of Clinical Psychologists was only one of a number of state and local associations of applied psychologists established in the 1930s to promote non-academic service roles. In 1937 these geographically dispersed groups gave rise to a national organization, the American Association for Applied Psychology (AAAP), which provided an alternative to the complacency of the APA concerning nonacademic professional issues. Louttit was a leading figure in the AAAP, and served as its president in 1942-43, shortly before it was amalgamated with the APA. An articulate spokesman for the interests of applied psychologists, Louttit performed yeoman service as executive secretary of the AAAP and as a member of various committees, and was responsible for the preparation of a biographical directory of AAAP members.\textsuperscript{159} Largely through Louttit’s efforts, Indiana became known as an important center for applied psychology in the United States.\textsuperscript{160}

\textbf{Currents of change}

In 1934 Book retired as department chair. He had overseen the rebuilding of the psychology program after World War I and guided its expansion into new areas of research and practice. The department had branched out from its earlier focus on human skill learning into aspects of animal conditioning and physiological psychology. The clinical program had been restructured as well, and integrated more fully into the department. While continuing to fulfill its mission in undergraduate education, the department now had a diverse and productive faculty along with a small graduate program. Kellogg, Davis, and Louttit constituted a solid core of young researchers, which was augmented in 1935 by the arrival of Merrill F. Roff (1909-86), a specialist in psychological measurement. Whether or not they agreed with his ideas, Kantor’s theorizing helped to reinforce behavioristic attitudes and critical thinking among department members.

\textsuperscript{160} In a 1940 survey of the field Indiana was listed among eight institutions with strong applied programs. Ralph Berdie, “The Field of Applied Psychology,” \textit{Journal of Applied Psychology}, 1940, 24, 553-575, on 569.
Another Clark PhD (1911), Edmund S. Conklin (1884-1942), replaced Book as head of the department. Unlike his predecessors, however, Conklin was neither born nor educated in Indiana. Before coming to Indiana he had spent 23 years at the University of Oregon, where he had established a psychological laboratory. Conklin was noted for his skills in administration and textbook writing. After coming to Indiana he wrote books on educational psychology and on adolescence; he had already published volumes on abnormal psychology and on the psychology of religion. He continued to embrace G. Stanley Hall’s eclectic and humanistic view of psychology, and was a popular public speaker.

Conklin had been chair for three years when two unrelated events occurred in the spring of 1937. On March 8, Gestalt theorist and discoverer of the phi phenomenon, Max Wertheimer, spoke at Indiana. A German émigré, he had been teaching at The New School in New York since Hitler came to power in 1933. The next week President Bryan gave notice that he wanted to retire after a 35-year tenure in the office. The proximate cause was the establishment of the university’s first retirement system—Bryan was 76. After a nine-month search, Bryan’s successor was the young Dean of the Business School, Herman B Wells (1902-2000). A dynamic and visionary leader, Wells launched a major effort to revitalize Indiana University and lead it into the front ranks of American research universities. Compared to some other departments, psychology was in excellent shape, with a young and productive faculty.

Among the initiatives supported by the department was a new psychological journal, the *Psychological Record*, launched in 1937 by Kantor and Louttit. Kantor was editor; Louttit served as managing editor. It was published by the Principia Press, a nonprofit corporation formed by a group of Indiana professors in 1931 to facilitate scholarly publication, primarily their own. The *Psychological Record* was a cooperative journal in which authors subsidized the cost of printing. It aimed to provide “immediate publication at least possible expense” by printing individual articles upon acceptance and then binding them together to form issues.

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164 On the Wells administration, see Clark, *Indiana University*, v. 3. See also Herman B Wells, *Being Lucky: Reminiscences and Reflections* (Bloomington: Indiana University Press, 1980), and Capshew, *Herman B Wells*.
165 Kantor was a major force behind the Principia Press. He probably suggested its name, drawn from Newton’s *Principia Mathematica*, and he published a number of books under its imprimatur.
166 “Editorial Statement,” *Psychological Record*, 1937, 1, 2.
the entire field of psychology, and relied on a board of editors to evaluate manuscripts in various specialties. Among the members of the first editorial board were Conklin, J.P. Guilford, and B.F. Skinner.

In the fall of 1939 the department hosted the Bryan Symposium to commemorate 50 years of psychology at Indiana University. Dozens of psychologists, alumni, and friends attended the one-day meeting, including Elmer Culler and John McGeoch, who were featured speakers. The highlight of the program was the evening banquet that featured Bryan reminiscing about his early years in psychology. Recalling his first meeting with G. Stanley Hall in the late 1880s in Indianapolis, Bryan remembered Hall asking him, “How in the world did you, away out here, get started in the study of modern psychology?” Unable to recollect his precise response, Bryan recounted the influence of Jordan, Ebbinghaus, James, and Hall in encouraging his interest in the new field. He vividly described how Jordan “laid his mind” on young students like himself, and “with a combination of inspiration and demand . . . led many men to undertake the life of a scholar.”

As the Bryan Symposium celebrated a half-century of progress, Indiana psychology was poised on the edge of far-reaching changes. On the local level, the new university administration was inaugurating significant reforms. Overshadowing this was the start of the Second World War and the first phases of American mobilization. At the symposium, however, the participants were looking back, not toward the uncertain future, and they could see a solid record of achievement. Since Bryan’s first solitary efforts, the psychology faculty had grown to eight members, and hundreds of alumni held degrees from the program. Indiana psychologists had made notable contributions to the research literature and to the provision of practical services. The department was also providing leadership in organizational affairs: Conklin was president of the Midwestern Psychological Association for 1938–39, and Louttit was active in the American Association for Applied Psychology. The feeling of continuity was underscored by the presence of Bryan, now nearly 80 years old but still in robust health.

The first Indiana psychologist to enter war work was Louttit. Shortly after the Bryan Symposium he attended a roundtable on “Possible Psychological Contributions in a National Emergency” held at the 1939 meeting of the AAAP where a Navy officer mentioned potential interest in a psychological unit in the Bureau of Medicine and Surgery. Louttit became interested in a commission, and applied for one in June 1940. His slow promotion at Indiana—he became an associate professor in 1938 after seven years—had not kept pace with his increasing professional prominence, and contributed

to his desire to join the military. In October 1940 he was commissioned as a Lieutenant Commander and assigned to the Bureau of Medicine and Surgery, becoming the Navy’s first psychologist.\textsuperscript{168}

Louttit’s departure was only the first in a series of faculty leaves that disrupted the department. Less than a year after the Pearl Harbor attack of 7 December 1941, Conklin died. Kantor stepped in as acting chair for the remainder of the war. A steady stream of visiting professors and graduate students filled in as temporary replacements on the teaching staff.

As they coped with the national emergency, department members were also planning for the postwar period. The Wells administration wanted to hire a prominent research psychologist as the new chair. A consensus emerged that the successful candidate should be starred in \textit{American Men of Science} as an indicator of professional standing.\textsuperscript{169} Only two psychology faculty members—Bryan and Lindley—had ever been starred in \textit{American Men of Science}, and they had received that distinction nearly 40 years before, in the first edition (1903).\textsuperscript{170} Wartime conditions made the search even more difficult. The demands of government agencies and military services had created a shortage of psychologists in the university, and competition became keen to attract and retain faculty.\textsuperscript{171}

\textsuperscript{168} Louttit to W.R. Miles, 25 June 1940; Louttit Papers/1/13. Reflecting on his motivation to join the service, Louttit said: “Frankly I had gotten rather fed up with teaching and universities some time ago. The chance at this Navy work meant a break, and I have been able to get pretty much away from old thinking.” Louttit to D. Fryer, 13 February 1941; Louttit Papers/6/83.

\textsuperscript{169} As Louttit wrote to a friend: “They seem entirely committed to getting someone from outside and Wells apparently insists they should try to get a starred man.” Louttit to H. Allen, 15 September 1944; Louttit Papers/13/229.

\textsuperscript{170} In addition to Bryan and Lindley, four other IU graduates—Starbuck, Terman, Stone, Wissler—had been starred over the years. In the first seven editions of \textit{American Men of Science} (1903-1943), only 132 psychologists had been starred. By comparison, in 1943 APA membership stood at nearly 3,500. For an exhaustive analysis see S.S. Visher, \textit{Scientists Starred 1903-1943 in “American Men of Science”} (Baltimore: Johns Hopkins Press, 1947).

CHAPTER 4

Postwar Renaissance

After World War II ended in 1945 the Department of Psychology was faced with the task of rebuilding. Wartime had disrupted the normal work of the department, drawing many students and faculty members into national service, and causing the *Psychological Record* to suspend publication. The department had lost nearly half of its faculty during the preceding five years, including chair Conklin, clinic director Louttit, and assistant professor Roff. Of the senior faculty only Kantor, Kellogg, and Davis remained; Mary Shirley served as a junior professor from 1943-45. As acting chair, Kantor was busy recruiting a new permanent chair, and was able to attract B.F. Skinner to the position.

As early as 1940 Kantor had approached B.F. Skinner (1904-90), a faculty member at the University of Minnesota, about coming to Indiana. The two met a few years before, and Skinner had been an associate editor of the *Psychological Record* since 1937. In late 1944 Skinner had agreed to become chair of the department starting the following fall. After seven years at Minnesota, Skinner was ready for a change. On top of a promotion to full professor, Indiana offered him a substantially increased salary, research support, and closer proximity to other institutions.

Skinner was full of plans for improving the department. He wanted to put the separate facilities for Kellogg’s conditioning laboratory and the psychological clinic under the same roof as the rest of the department in Science

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172 The journal was revived in 1956 by Kantor’s former students; see Irvin S. Wolf, “The Psychological Record from 1937 to 1976,” *Psychological Record* 1976, 26, 2.


Hall. An expanded shop and better animal quarters were high priorities as well. He expressed concern over the introductory psychology course, which had gained a reputation as an easy way to satisfy a university science requirement, and suggested bringing in Fred S. Keller to revamp and teach the course. This change, however, was too radical and was rejected.175

Within months after his arrival Skinner was reporting back to his former department chair at Minnesota how “extraordinarily friendly and cooperative” his Indiana colleagues were, and how enjoyable the social life of Bloomington was.176 John Haralson (PhD 1951), a graduate student whose program was interrupted by the war, remembered “Skinner’s first informal evening colloquium in which he set forth the virtues of the empty organism. I also vividly recall [faculty member] Davis’ taciturn rejoinder to this. Half rising from his chair, he delivered a typical short pithy antidote, prefaced by one of the most memorable commentaries from that period: ’I want to say a few words for the inside of the organism.’”177

During his first year Skinner taught graduate courses on “Verbal Behavior,” “Seminar in the Practical Control of Behavior,” and “Experimental Analysis of Behavior.”178 In the latter course there were no assigned readings. Instead, students were required to keep an exhaustive notebook of their research and ideas, to prepare for discussion in class. Skinner raised his younger daughter in the “baby-tender” he had designed for infants. He described the value of this crib in an article in the Ladies Home Journal that appeared shortly after he arrived at Indiana. The title of the piece—“Baby in a Box”—was unfortunate, since it conjured up associations with devices used in animal experiments.179

Skinner was only one of several new faculty members hired after the war. Also arriving in 1945 were Douglas G. Ellson (1913-2000) and Delton C. Beier (1915-69), both of whom had been employed in contract research on gunfire control at the University of Wisconsin during the war. The projects were sponsored by the Applied Psychology Panel of the National Defense Research Committee, part of the wartime science establishment.180 Ellson, who received his PhD in 1939 under Clark Hull at Yale, specialized in the

176 Skinner to R.M. Elliott, 7 November 1945; Skinner Papers/1/Correspondence 1928-48/4.
177 John V. Haralson to Richard C. Atkinson, 30 Dec 1987, in “Recollections of the I.U. Psychology Graduates during the Late 1940’s and Early 1950’s.”
178 Indiana University Catalog, 1945-46, 114.
area of learning theory and its applications. Beier, a clinical psychologist, was hired to replace Louttit as Director of the Psychological Clinic. Both men had gained experience in test design and evaluation during the war. In 1946 Skinner’s former student William K. Estes (1919-2011) was hired as an instructor after completing a stint in the Army, and William S. Verplanck (1916-2002) joined the faculty, fresh from his wartime service in the Navy, and became Skinner’s administrative assistant.

The university continued to hire new faculty in order to cope with sharply rising student enrollments, and the department roster grew to more than a dozen members by 1948 with the addition of E. Kuno Beller (1919-2010), Richard N. Berry (1918-), Sidney W. Bijou (1908-2009), Cletus J. Burke (1917-73), Mary J. Collier (1920-), William O. Jenkins (1916-), Leo J. Postman (1918-2004), and Irving J. Saltzman (1923-2000). Although women had served on the teaching faculty in the department since the First World War period, and sometimes conducted research studies, women faculty lacked numbers and influence.181 With the expansion of higher education after the Second World War, that trend continued.182

New start for the clinical program

One major facet of the department’s postwar renaissance was the revitalization of the clinical area. Like other institutions in the American psychology community, the Indiana department was responding to the new salience of applied psychology engendered by wartime professional service. Perhaps the most urgent challenge facing the profession was an unprecedented demand for clinical psychologists. Taking the lead, the American Psychological Association organized a Committee on Graduate and Professional Training to make recommendations and to accredit clinical training programs. The basic thrust of their recommendations was to graft clinical training onto the existing structure of graduate education in experimental psychology.183 The notion of the “scientist-practitioner” soon emerged as the guiding model for clinical training in the United States, and was officially endorsed by the APA in 1949 at the Conference on Graduate Education in Psychology.

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181 Cecile W. White received her MA in 1915, and was an instructor for 1916-17. Hannah M. Book, the sister of department chair W.F. Book, obtained her MA (1920) and PhD (1929) in the department, and served on the faculty between 1921 and 1937. Gladys M. Dykes was an instructor for 1924-25, between the award of her MA (1923) and PhD (1925). Mary H. Young, the wife of clinic director H.H. Young, held an Indiana master’s degree (1918) and a PhD from Pennsylvania (1926), and was on the faculty in 1924-25 and in 1931-32. During the 1940s three women joined the department. Assistant professor from 1943-45, Mary M. Shirley held an IU BA (1922); a clinician for the 1946-47 year, Sylvia Lotman Glaser held an IU MA (1944); Mary Jeffery Collier’s husband was a graduate student in the department, as was Glaser’s.


Education in Clinical Psychology held in Boulder, Colorado, which was attended by Beier as director of the Indiana clinic.\textsuperscript{184}

The Committee on Graduate and Professional Training was also charged with the task of accreditation, and its representatives visited the Indiana program and gave official approval for 1946-47, starting the department’s continuous record of APA accreditation for clinical training. With this rating, students could be employed as interns in the Veterans Administration Training Program in Clinical Psychology. The first graduate student trainees were placed in Indianapolis VA facilities in 1947-48.\textsuperscript{185}

As the new director of the psychological clinic, Beier was busy revamping its operation, recruiting new faculty, teaching and supervising students, and redefining the clinical curriculum. In 1949 the clinical faculty consisted of Beier, Collier, Beller, Bertram D. Cohen (1923-), and John J. Conger (1921-2006).

As the clinical program expanded along with the rest of the university, space limitations became severe. Since the late 1930s the Psychological Clinic had been housed alongside the Reading Clinic and the Speech and Hearing Clinic in Alpha Hall, a large wooden structure on Third Street that was originally a women’s dormitory. In 1947, after Alpha Hall was condemned in order to make way for the new biology building (Jordan Hall), the clinic was moved to a leftover World War II barracks located near the university auditorium. These “temporary” quarters served for more than a decade, giving rise to horror stories about the lack of either thermal or sound insulation.\textsuperscript{186}

**The Kantor-Skinner seminar**

The influx of new people into the department had important and exciting intellectual consequences. Among the most notable was a graduate seminar on “Theory Construction in Psychology” held during the fall semester of 1946. Jointly led by Kantor and Skinner, the course attracted several young faculty members as well as graduate students. A number of the graduate students had come to Indiana before the war and were advocates of Kantor’s approach, and a few had come more recently to study with Skinner. Some of the seminar participants, such as Ellson and Verplanck, had a background in Hull’s system, whereas others held less developed views. Whatever the case, the topic was exciting and important, and it generated controversy and discussion.\textsuperscript{187}


\textsuperscript{186} Robbins, “History of the Psychological Clinic,” 13, 31-32.

Making little attempt to reconcile their different approaches, Skinner and Kantor presented their well-articulated scientific systems. Their interaction in the seminar was apparently cordial, if rather formal. As one participant noted later, the “seminar produced more fireworks among the students than between the professors.”188 One of the major points of contention between the Skinnerians and the Kantorians was over the relative importance of controlled laboratory experimentation and attempts to address real human problems. Up to this point, Skinner was only beginning to extrapolate his laboratory-generated principles to practical applications. Wartime provided the context and incentive for his first forays into behavioral technology for three diverse areas: the air-conditioned baby tender (Heir Conditioner), the attempt to create a pigeon-guided missile (Project Pigeon), and the socially engineered utopia described in Walden Two, written in 1945 at Minnesota but not published until three years later.189 Like Skinner himself, his students preferred to do empirical, descriptive studies of operant behavior in rats and pigeons.

The Kantorians approached behavior from a broader, more philosophical framework. In the two decades following his Principles of Psychology (1924-26), Kantor had refined and extended his ideas. Retaining his concern over the reciprocal influences of the organism and its environment, he coined the term “interbehaviorism” for his system to distinguish it from other “organismic” psychologies. Kantor’s students were oriented more toward conceptual issues than laboratory work. Although the seminar did little to resolve the differences between its two leaders, it was important in stimulating many of the participants to seriously consider the merits of each approach, because the course highlighted basic issues involved in any approach to a science of behavior.190

Graduate student Arnold Buss, who entered in 1947, remembered taking Kantor’s history and systems of psychology course and discussing the

189 B.F. Skinner, Walden Two (New York: Macmillan, 1948). He had also drafted parts of the manuscript that was later published as Verbal Behavior in 1957. Idem, “Pigeons in a Pelican,” American Psychologist, 1960, 15, 28-37. See also Capshaw, “Engineering Behavior” and Rutherford, Beyond the Box.
Vienna Circle, which he initially thought was a type of European sausage. He reported, “I was lost much of the semester and discovered much later that I was a member of large club who were confused about logical positivism.” Buss recalled just “how tolerant the faculty were about divergent points of views, and there were many. R.C. Davis, still remembered as one of the finest teachers I ever had, was a pioneer in physiological psychology. J.R. Kantor thought that physiological psychology was irrelevant and once told a class that the big toe has as much to do with behavior as the brain.” It left a lasting impression on Buss: “Each of them had a point of view, but as scholars they tolerated and even appreciated other perspectives. I can think of no more important lesson for prospective psychologists.”

Behaviorism applied

Although the ideological battles between the Kantorians and the Skinnerians were heated, among graduate students theoretical concerns generally took a backseat to more pressing considerations of research design and data analysis. A number of students, however, tried to incorporate ideas from both in studying aspects of human behavior. Paul R. Fuller, a graduate student in clinical psychology from 1947-52, published a paper on “Operant Conditioning of a Vegetative Human Organism” (1949) that offered a novel application of behavioral principles. When Fuller tried to apply similar principles to regular clients, he met resistance from psychiatrists and orthodox psychologists, many of whom preferred to use psychodynamic rather than behavioral terms. Fuller recalled that: “the clinic director was shocked: ‘You can't treat a child like you do your rats and pigeons!’ I could and I did.”

Other Indiana graduate students did research in the same vein. As part of his doctoral dissertation in clinical psychology, Joel Greenspoon explored the use of auditory feedback in reinforcing verbal behavior. After he had difficulties in applying Carl Rogers’ nondirective approach in a clinical situation, he resorted to laboratory investigations using Skinner’s operant conditioning procedures. There was little research that pertained to the conditioning of verbal behavior, and Greenspoon tried several methods before finding a satisfactory way to reinforce a desired response in undergraduate subjects. Finally he discovered the simple yet powerful technique of uttering sounds like “uh-huh” whenever the subject emitted the desired verbal behavior, such as saying a plural noun. Greenspoon’s investigation,

191 Arnold Buss to Richard C. Atkinson, 12 October 1987, in “Recollections of the I.U. Psychology Graduates during the Late 1940’s and Early 1950’s.”
193 Fuller, “Professors Kantor and Skinner,” 323.
published in 1955, was influential in encouraging psychologists to use operant conditioning to study verbal behavior.\textsuperscript{194}

Fuller and Greenspoon were among the first of a large number of behavioral researchers trained in the department after the war, and their research exemplified the close connections that existed between the clinical and experimental components of the graduate training program. Whether they pursued careers in basic or applied areas, Indiana graduates usually possessed a distinctive focus on behavioral research. By the late 1960s Indiana was considered among the most important institutions connected with the applied behavior analysis movement in American psychology.\textsuperscript{195}

Conference on the Experimental Analysis of Behavior

In order to bring together the small community of operant researchers, Skinner and Fred Keller of Columbia organized a Conference on the Experimental Analysis of Behavior, held in June 1947 in Bloomington.\textsuperscript{196} Nearly all of the 20-odd participants were either from Indiana or from Columbia. Although Skinner was the acknowledged leader of the group, he was viewed, as one participant put it, “more as an especially shrewd and resourceful member of our expedition into the unknown—\textit{primus inter pares}—than as an authority whose thoughts were to be treasured because of their origin.”\textsuperscript{197} Faculty and graduate students presented informal reports on their current research and engaged in discussion. Skinner demonstrated the shaping of key pecking behavior in the pigeon, a novel experimental animal that he had begun to use during his wartime research. Among the topics covered were negative reinforcement, discrimination, response interaction,

\begin{thebibliography}{197}
\bibitem{194} Joel Greenspoon, “The Reinforcing Effect of Two Spoken Sounds on the Frequency of Two Responses,” \textit{American Journal of Psychology}, 1955, 68, 409-416. Based on its citation record, the article was chosen as a “Citation Classic” and Greenspoon wrote a brief description of its genesis; see \textit{Current Contents: Social and Behavioral Sciences}, 1982, 14, (21), 20. J. Greenspoon, personal communication, 26 February 1988.
\bibitem{195} Fuller, “Professors Kantor and Skinner,” 323-324; Edward K. Morris, Stephen T. Higgins, & Warren K. Bickel, “The Influence of Kantor’s Interbehavioral Psychology on Behavior Analysis,” \textit{Behavior Analyst}, 1982, 5, 158-173. For an overview of the networks linking applied behavior analysts, see Kenneth Goodall, "Shapers at Work," \textit{Psychology Today}, 1972 (November), (6), 53-63, 132-138. One Indiana faculty member of the late 1940s, Sidney Bijou, had a delayed reaction to the influence of Kantor and Skinner. A clinical psychologist, Bijou had received his PhD in 1941 from the University of Iowa. He spent the war years in the Aviation Psychology Program of the Army Air Forces, and was recommended to Skinner as a clinician with an experimental orientation. When he came to Indiana in 1946 Bijou maintained a Hullian perspective on emotional drives that he had acquired as a student of Kenneth Spence at Iowa. After only a year and a half Bijou moved to the University of Washington, where he established a research program in child development. Faced with this task, he concluded, “the most promising path lay in using Skinner’s experimental theory and methodology and Kantor’s philosophy of science.” Leonard Krasner, “An Interview with Sidney W. Bijou,” in B.C. Etzel, J.M LeBlanc, & D.M. Baer, eds., \textit{New Developments in Behavioral Research: Theory, Methods and Application} (Hillsdale, NJ: Lawrence Erlbaum Associates, 1977), 587-599, on 590.
\bibitem{197} \textit{Ibid.}, 444.
\end{thebibliography}
and emotion. Most of the experiments used nonhuman subjects, but a couple of the studies involved humans.\footnote{Ibid., 444-445.}

After the conference in 1947 an occasional newsletter was begun to promote continued interchange between members of the group and other interested people. Estes was in charge of mimeographing and mailing the informal publication, which continued to be produced for a number of years. A second conference was held a year later, also at Indiana, shortly before Skinner moved to Harvard. In 1949 the meeting was moved to Columbia, where the third annual conference attracted over 40 individuals. Such large attendance made it difficult to continue the informal format, and the conferences came to an end.\footnote{Fred S. Keller, "A Fire in Schermerhorn Extension," \textit{Behavior Analyst}, 1986, 9, 139-146, on 145.}
CHAPTER 5

Psychology Comes of Age

The momentum generated during the first few years following World War II propelled the psychology department into the front ranks during the 1950s. A steady stream of young, ambitious faculty members contributed to the department’s growing reputation in research and trained a swelling tide of talented graduate students. Funds for research and graduate training were plentiful, benefiting both clinical and experimental areas within the department. In addition to subsidizing graduate training in clinical psychology, the U.S. Public Health Service also supported basic research in the department. For instance, in 1947 Kellogg received the first research grant ever awarded by the National Institute of Mental Health, for a study of the role of the nervous system in learning.200

In 1947 Skinner gave the William James Lectures at Harvard, and during his stay was invited to join the faculty. He decided to accept, lured away by the prospect of returning to his alma mater after a decade in the Midwest. During his short stint as Indiana chairman he had discovered an aversion to administration, even though the department had prospered under his leadership. Skinner resigned from Indiana University in 1948, and left a department that was thriving, due in part to his own efforts but also to larger forces at the university and in American psychology.

Enrollment at Indiana University was growing rapidly, from under 10,000 in 1945-46 to over 18,000 in 1948-49. Under president Herman Wells, the university was attracting talented scientists and scholars. For example, geneticist Hermann J. Muller received the Nobel Prize in 1946, after joining the faculty a year before.201 American psychologists were also prospering. After a wartime dip, PhD production increased at a record pace. Membership in the American Psychological Association nearly tripled

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200 The award is mentioned in Larry B. Silver & Julius Segal, "Psychology and Mental Health: An Enduring Partnership," American Psychologist, 1984, 39,804-809, on 804, which cites a $3,000 grant, and in the Indiana Daily Student, 5 March 1947, which gives $6,075 as the amount.

201 See Clark, Indiana University, v. 3.
during the 1940s to over 7,200 members by 1950. Rising college enrollments created a strong academic job market, and new employment opportunities outside of the university in government, business, and private practice were expanding. The Indiana psychology department flourished in this environment. In 1948 Ellson succeeded Skinner as department chair. Ellson took a collegial approach to administration, and conducted much departmental business over morning coffee with Estes, Verplanck, and Burke.

Scaling up the clinical program

In the context of the tremendous overall expansion of clinical psychology in America after World War II, the Indiana University psychological clinic underwent far-reaching changes. It grew significantly in size and scope while remaining an integral part of the department. As the war ended, the clinic caseload started shifting from its traditional source of clients in the Bloomington schools toward the university student population. With burgeoning enrollments and the influx of veterans, service to Indiana University students took precedence over the treatment of local children. The increased caseload, combined with the enlarged clinical training program, spurred the hiring of new staff to fulfill the service functions of the clinic. Shortly after the war, Sylvia Lotman Glaser (1921-2001) served as a clinician, devoting the bulk of her time to client casework. In 1950 Eldred F. Hardtke (1914-71), who held an MD degree as well as a PhD in psychology, joined the faculty. He was the first psychiatrist hired by the university, and worked at the Student Health Service as well as the psychological clinic.

Although the psychological clinic continued to provide diagnostic and therapeutic services, its major focus was graduate training and research. New clinical faculty members were hired largely on the basis of their research ability. This criterion was partly a result of department policy, but also reflected the influence of the war, which encouraged many psychologists trained as experimentalists to move into applied areas, especially clinical psychology. In the early 1950s four new clinic faculty members were hired: Harry G. Yamaguchi (1921-2002), Alexander M. Buchwald (1925-), Arnold M. Binder (1924-), and Leon H. Levy (1925-2013). Mary Jeffrey Collier, hired in 1947, served as acting clinic director in 1952-53, and became the first women faculty member to receive tenure, in 1953. For the 1953-54 academic year, she took a Ford Foundation fellowship sponsored by the Fund for the Advancement of Education, on a leave without pay from IU. She subsequently resigned, never exercising her tenured status at IU.
The interaction between the clinical faculty and the rest of the Indiana department was extremely close, and an enduring relationship based on intellectual collaboration and mutual respect developed. A clinical student at this time, Warren Garlington (PhD 1953), was “convinced that we had one of the best, if not the best department in the country” and made some astute reflections on the clinical program.

I suspect the Clinical faculty weren’t too sure just what an ideal clinical program should be like, so they simply took the experimental curriculum and grafted some testing and therapy course on to it. The general skepticism concerning some of the more subjective aspects of clinical psychology came across strongly. Our exposure to people of the caliber of Estes, Kellogg, Davis, Kantor, and Burke, in addition to the clinicians, guaranteed that a clinical psychologist from Indiana would be firmly grounded in the experimental foundations of clinical work.203

The close connections to empirical science did not preclude students learning valuable clinical skills of empathetic communication, however. Clinical director Beier was a master, as clinical student Sanford Rosenzweig (PhD 1959) absorbed from this episode in 1955:

Del Beier and I were to meet with middle-aged parents of a young boy, their only child, whom I had tested. His I.Q. was below 50. I was learning to become a clinical psychologist. I expressed my despair. He didn’t seem upset at all. In fact he was so calm, I thought him aloof and rather cold-hearted.

When we met with the parents, he asked me to tell them the score, and some of the statistical details. I felt terrible. He then, very naturally, told them what this would mean behaviorally, and how much they could expect from him in actual performance. As I expected, they looked pretty unhappy. Then he talked to them about what it would be like to take care of their son.

He was just right. He spoke matter of factly. He told them how the boy was still a son whom they would be able to love; that he would appreciate their love and care regardless of his I.Q.; that, actually, isn’t this what ultimately really matters anyway?

I felt uplifted as he spoke. The three of us were embarrassed by the moistness in our eyes created by Del Beier’s kind, thoughtful words.

It was the most important lesson I learned in my graduate training at I.U.204

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203 Warren K. Garlington to Richard C. Atkinson, 22 October 1987, in “Recollection of the I.U. Psychology Graduates during the Late 1940’s and Early 1950’s.”

204 Sanford Rosenzweig to Richard C. Atkinson, 7 January 1988, in “Recollection of the I.U. Psychology Graduates during the Late 1940’s and Early 1950’s.”
Another clinical student, John Grossberg (PhD 1956), had done his undergraduate work at Brooklyn College and had trouble making train connections to Bloomington. Upon arrival, he was struck with “agrarian agoraphobia,” in his words. “Bloomington in 1950 was not very big, and it seemed to me in my mildly disoriented state that in walking 20 blocks in any direction one would run out of streets. Here I was on a small island surrounded by endless fields of haystacks, cows, and barns. That sort of island fever never really left me, although by my terminal year, surprisingly enough, it had turned into a comfortable sense of detachment, of separation from worldly cares, a true Ivory Silo.”

Escalation of PhD production

Experimental methodology and research skills were strongly emphasized in the Indiana graduate program. Although students were encouraged to understand theoretical issues in psychology, they were not expected to embrace particular doctrines because they were currently fashionable or endorsed by the faculty. To be sure, the atmosphere was behavioristic, but what united the department was a shared commitment to scientific research rather than an allegiance to a particular theoretical viewpoint. Graduate students flocked to the program, and by the early 1950s Indiana started producing large numbers of PhDs for the first time in its history.

For a decade following World War II the graduate training program conformed to the general pattern laid down years before. All students were expected to master a common core of knowledge in experimental psychology and to develop their laboratory skills before embarking on specialized research for the dissertation. They faced two major examinations. The first, known as the Qualifying Examination, was held at the beginning of the second year of study, and covered the entire field of scientific psychology. It was designed to certify students who were capable of advanced scholarship and research early in graduate training, and to advise them on their progress in the program. The second, called the Preliminary Examination, occurred in the third year. The “prelims” consisted of three sections, each lasting a full day. The first section dealt with questions about “theoretical and systematic psychology and the history of psychology.” This section was the special province of Kantor, who vigorously rejected all answers that smacked of “mentalism.” The second day was devoted to “experimental psychology, including learning and conditioning, physiological psychology, comparative psychology, and sensory processes and perception.” Immediately after the war, the Part III was labeled “special areas” or “special topics,” but soon...

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205 John M. Grossberg to Richard C. Atkinson, 20 Jan 1988, in "Recollections of the I.U. Psychology Graduates during the Late 1940’s and Early 1950’s."
these were listed individually as “tests and measurements, clinical, social and abnormal psychology.”

Although the examinations stressed substantive coverage and comprehension of the psychological literature, coursework tended to be oriented toward research methods, particularly during the first year, when students were required to take Advanced Statistics (taught by Burke until 1958, and then Binder to 1964) and Advanced Laboratory Methods. Successively supervised mainly by Kellogg (to 1951), Estes (1951-62), and Dinsmoor (1952-70), Advanced Laboratory Methods I immersed students in laboratory research by requiring them to complete one research study in human learning and another using nonhuman subjects. During the 1950s, this requirement usually meant one experiment in the area of mathematical models and one in the area of operant conditioning with rats. Despite the fact that most students were unable to complete their reports by the end of the semester,

everyone did receive substantial hands-on experience in laboratory work with two species of subject, a series of lectures on experimental design, a minicourse pitched at an appropriately simplistic level on the most basic and most relevant aspects of electric circuitry, and a detailed analysis of both their thinking and their verbal skills, as revealed by their oral and written reports.

In the second semester, students could take either Advanced Laboratory Methods II, working in the sensory and physiological laboratories, or Advanced Laboratory Methods III, oriented toward clinical research.

Through the 1950s and into the early 1960s the Qualifying Examination remained as a comprehensive test for all students. The Preliminary Examination, however, began to change in 1954-55, and no longer were all students required to answer the same questions. In Part II, “measurement and clinical” were added to the areas listed under general experimental, and in Part III students were given a choice among three alternative “special area” examinations in learning, sensory and physiological, or clinical psychology.

In the first decade following World War II, the department granted more than 50 doctorates, almost double the total for the preceding 25 years. Due to a strong job market, most graduates were able to land good positions. Nearly 80% obtained academic employment, in a wide range of universities and colleges, including a number of prestigious institutions. Ten

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207 Ibid., 6.
208 Ibid.
209 Ibid., 3.
graduates—20% of the total—found government jobs in research or clinical work.\textsuperscript{210} John Grossberg (PhD 1956) recalled: “Most of all I remember my fellow students from whom I learned so much, the patient faculty who always had time for us, and the people of Indiana who steadfastly supported the exceptional university that has changed the science and practice of psychology.”\textsuperscript{211}

\textbf{From learning to cognition}

Researchers in the experimental analysis of behavior continued to build their scientific networks, and the interaction between the Indiana and Columbia groups continued beyond the end of the Conferences on the Experimental Analysis of Behavior. For instance, Columbia psychologist William N. Schoenfeld spent a semester as a visiting professor at Indiana during 1950-51, and James A. Dinsmoor (1921-2005) joined the faculty in 1951 after receiving his PhD at Columbia. A number of the former conference participants attended the Dartmouth Conference on Learning Theory in 1950 and helped produce the critical review \textit{Modern Learning Theory} (1954).\textsuperscript{212} For a brief period in the early 1950s the department had an annual exchange of visits with the University of Iowa psychology department. The series revolved around issues in learning theory. The Iowa psychologists (including Kenneth Spence, Gustav Bergmann, and Judson Brown) took a rather formal approach derived from Hull’s theory, while the Indiana group emphasized experimental work based mainly on operant conditioning and mathematical models.\textsuperscript{213}

By the late 1940s Estes had become deeply interested in constructing mathematical models of learning, which combined his background in the experimental analysis of behavior with mathematical skills he had gained during the war.\textsuperscript{214} Joined by a number of coworkers, including Burke and various graduate students, Estes elaborated a statistical learning theory.

\begin{itemize}
  \item \textsuperscript{210} D.G. Ellson, “Report on the Graduate Training Program in Psychology,” to R. Cleland, Dean, Graduate School, 11 March 1954; Psychology Department Files.
  \item \textsuperscript{211} John M. Grossberg to Richard C. Atkinson, 20 January 1988, in “Recollection of the I.U. Psychology Graduates during the 1940’s and 1950’s.”
  \item \textsuperscript{213} D.G. Ellson, personal communication, February 1988.
  \item \textsuperscript{214} Skinner’s skepticism about mathematical models comes through in his playful description that Estes “had suffered a curious ‘service-connected disability.’ On patrol in the South Pacific he had had time to spare and had read mathematics. His brilliant career as an experimentalist soon yielded to mathematical model-building, from which he suffered for many years.” Skinner, \textit{Shaping of a Behaviorist}, 318. In contrast, Estes states: “For over a year I must have averaged more than half of each day working through problems of calculus, differential equations, number theory, and probability. Aside from the advantages for my mental health, those exercises went a good way toward making up for the scanty mathematics education I had unwisely settled for in college . . . . When asked just what I could not have done in research without this preparation in mathematics, I find it hard to give specific answers. Nonetheless, I am convinced that the effort was a worthwhile investment.” William K. Estes, in \textit{A History of Psychology in Autobiography}, v. 8, ed. Gardner Lindzey (Stanford: Stanford University Press, 1989), 94-124, on 98.
\end{itemize}
His seminal 1950 *Psychological Review* paper, “Toward a Statistical Theory of Learning,” presented a conceptual framework that yielded quantitative predictions and permitted additional mathematical development. He proposed that learning proceeded through the sampling of discrete stimuli that became associated with a particular response. Thus an underlying all-or-none process yielded incremental improvement in observed performance. Estes took the middle road in theorizing, eschewing both grand schemes of doubtful testability as well as micro-models of limited applicability. His mid-range models were carefully based on empirical results, and were able to generate testable predictions. Many of the studies used a standard apparatus constructed in the department that was called “the blinking witch” (or less politely, “the winking bitch”), operating as follows:

A variety of stimulus configurations could be displayed in front of the subject, each produced by selectively lighting a different set or sample within a large array of miniature bulbs. At an abstract or theoretical level, each bulb represented a “stimulus element,” and when these samples were generated in accord with the assumptions laid down for a given model, the degree of similarity among successive patterns could be specified in quantitative terms.

Work in mathematical modeling received an additional boost with the arrival of two Stanford-trained PhDs in the mid-1950s, David L. LaBerge (1929-) and Binder in the clinic. In contrast to the prevailing emphasis at Indiana on stimulus-response association, they took a more perceptual approach.

During the 1950s a number of Indiana psychologists moved away from neo-behaviorist paradigms toward more cognitive approaches in their research. For instance, Estes, after framing a theoretical-statistical approach for learning, developed and refined his stimulus sampling model. Although this line of research was based on traditional stimulus-response concepts, particularly as illustrated by animal experiments, it went well beyond them by suggesting a role for cognitive processing. In the area of human learning, Lloyd R. Peterson (1922-2011) and Margaret J. Peterson (later Intons-Peterson) (1930-), who had joined the department in the mid-1950s, conducted an elegant experiment in 1959 that demonstrated the rapidity of memory loss for verbal items when rehearsal was prevented. Although it was indebted to earlier work in verbal learning, their investigation emphasized temporal factors in memory rather than capacity limitations. This study, coming

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just as the emerging information-processing approach was gaining adherents, became a classic in the literature.\footnote{L.R. Peterson & M.J. Peterson, “Short-term Retention of Individual Verbal Items,” Journal of Experimental Psychology, 1959, 58, 193–198. See also L. Peterson’s review of the experiment in Current Contents: Social and Behavioral Sciences, 1982, 14, (36), 22.}

By hiring James P. Egan (1917-89) in 1951, the department also began building a program in the area of sensory psychology. An expert in auditory psychophysics trained under S.S. Stevens at Harvard, he was a veteran of the wartime Psychoacoustic Laboratory in Cambridge. In 1953, Egan supervised construction of new research facilities—the Hearing and Communication Laboratory—including anechoic and reverberation chambers, in a cluster of buildings on 13th Street. His research helped lay the foundations of signal detection theory, and he was also involved in providing practical advice to the speech and hearing therapy program at the university.\footnote{Neal F. Viemeister & Dennis McFadden, “James P. Egan, 1917-1989,” Journal of the Acoustical Society of America, 1990, 87, 445.}

**Bryan’s death**

In 1955 William Lowe Bryan died at home in the President’s House on campus, a few days after his 95th birthday. His obituary in the *American Journal of Psychology* noted that he was the next to the last charter member of the APA to die.\footnote{Only Lightner Witmer remained; he died the following year. D.G. Ellson, “William Lowe Bryan: 1860-1955,” American Journal of Psychology, 1956, 59, 325–327, on 325. Other obituaries include: New York Times, 22 November 1955, 35; J.R. Kantor, “W.L. Bryan, Scientist, Philosopher, Educator,” Science, 1959, 123, 214.} It had been two-thirds of a century since he launched the study of experimental psychology at IU with simple laboratory, and he had lived to see psychology develop into a large and complex enterprise. His own interests had come full circle, returning to the philosophical subjects that had captivated him as an undergraduate. Although one of his last publications was a brief memoir entitled “Adventure in Psychology: 1885-1902” (1948), metaphysical and ethical concerns had dominated his presidency and retirement. In 1940 he published a series of lectures on epistemology entitled *Wars of Families of Minds* in which he tried to explain how the commitments of different vocational groups to different explanatory modes account for misunderstanding and hostility, and how that might be overcome. A few years later, disturbed by the advent of the atomic bomb, he wrote a short pamphlet called “A Better World or None,” an exhortation to embrace Christian values in order to avoid war.\footnote{William Lowe Bryan, “Adventure in Psychology: 1885-1902,” (Bloomington: Privately printed, 1948), 7 pp.; idem, *Wars of Families of Minds* (New Haven: Yale University Press, 1940); idem, “A Better World or None,” (Bloomington: Indiana University Foundation, 1947), 12 pp.}
Until his death, Bryan kept in touch with the department. An inveterate walker, he would stroll by Science Hall to meet students, engaging them in conversation. Both Richard Atkinson (PhD 1955) and John M. Grossberg (PhD 1956) had warm memories walking across campus and being greeted by Bryan.\textsuperscript{221}

\textsuperscript{221} John M. Grossberg to Richard C. Atkinson, 20 January 1988, in “Recollection of the I.U. Psychology Graduates during the 1940’s and 1950’s.”
CHAPTER 6

Expansion and Consolidation

The department had grown substantially during the 1950s, and by the end of the decade there were over 20 faculty members, with about a third in the clinical area. Between 1950 and 1959 the department awarded 79 doctorates, nearly double the total for the entire 30 years before. The dominant interests revolved around animal learning and mathematical modeling. In addition to research in those areas, Davis and Egan each maintained active laboratories in physiological and in sensory psychology, and Kantor remained a highly visible presence until his retirement in 1959. One faculty member recalls that “as a department, we ranked ourselves second only to Iowa.”

The department continued to play an important role in the professionalization of behavior analysis. In 1959 Kay Dinsmoor, the wife of faculty member James Dinsmoor, was appointed business manager of the Journal of the Experimental Analysis of Behavior, and she used the department as her mailing address. The journal had been started two years earlier under the editorship of Charles B. Ferster, a psychologist at the Indiana University School of Medicine’s Institute of Psychiatric Research in Indianapolis from 1957-62. Ferster held a PhD from Columbia and had been a coworker of Skinner’s at Harvard.

New faculty, fields, and facilities

In 1959 Roger W. Russell (1914-98) was hired as professor and chair of the department. An experienced scientist-administrator, he had served as

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224 Ferster and Dinsmoor had been friends since graduate school. While Ferster continued his animal research in Indianapolis, he also extended laboratory techniques to human subjects, including a pioneering demonstration of shaping the behavior of autistic children by using tokens for reinforcement. See James A. Dinsmoor, “Charles B. Ferster (1922-1981),” American Psychologist, 1982, 37, 235.
the executive secretary of the American Psychological Association for the preceding three years and before that had been head of the psychology department at University College, London. His major research interest was in the biochemical basis of behavior, and he made strong efforts to strengthen that area in the department’s program. In contrast to Ellson, Russell favored a more directive style of administration.

Russell’s efforts were aided by the continuing availability of new faculty slots and ample research funds. In 1959 Russell L. De Valois (1926-2003), a promising researcher in the neurophysiology of color vision, was hired as an associate professor. With De Valois and Russell joining Egan and Davis, the department now had a strong physiological/sensory area. Unfortunately, in 1961 Davis died. He had almost singlehandedly established the department’s reputation in this area before World War II, and had been its leading figure since then. Further additions to the faculty in physiological psychology included Gabriel P. Frommer (1936-2014) in 1964.

In the four-year period from 1962-65 four psychologists working in various areas of sensory psychology became associated with the department. William D. Neff (1912-2002), an established researcher in auditory psychophysics, came to the department in 1963. Two years later he was appointed the first director of the Center for Neural Science, an independent interdisciplinary research institute in the university that offered graduate degrees. Among the first scientists recruited to the new center was Conrad G. Mueller (1920-2007), a specialist in the physiology of vision and former chair of the Columbia psychology department. During the same period the department made junior faculty appointments to S. Lee Guth (1932-) and Donald Robinson (1936-2010), who worked on the visual and auditory systems, respectively.

In 1964 George A. Heise (1924-95) joined the faculty under a National Institute of Mental Health grant in psychopharmacology. He had been a student of Skinner and George Miller at Harvard, and had worked as a research psychologist for Hoffman-LaRoche pharmaceutical company, studying drug effects on animal behavior. The following year Roger Maickel (1933-2006), a pharmacologist of the IU medical sciences program, was hired on the grant to perform neurochemical research in the same general area.225

The area of mathematical psychology underwent some important personnel changes in the early 1960s. Estes and Burke, who were largely responsible for the department’s national reputation in the area, both left. That loss, however, was offset by the influx of several younger men, including

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Foundations were also laid for two new areas of specialization—social and developmental psychology. The department’s initial appointment in social psychology was Seymour M. Berger (1928-), who was hired in 1959. In the mid-1960s two more social psychologists were added to the roster—Jerome M. Chertkoff (1936-) and Steven J. Sherman (1942-). The developmental area evolved after Robert B. Cairns (1933-) joined the clinical faculty in 1961. His interests gradually moved toward comparative developmental psychology, and he conducted a number of studies on various animal species. Animal learning and behavior continued to be an important research area in the department throughout the 1960s. Among the many faculty appointments during the period were Isidore Gormezano (1930-) and James Allison (1932-). Although faculty research interests had become fairly diversified, the psychology of learning still provided a touchstone for the department. As late as 1965, 19 of the 43 faculty members mentioned some form of learning among their “primary areas of activity” for a department brochure.226

By the time Ellson concluded his term as department chair in 1959, faculty size was approaching two-dozen. The department had long outgrown its quarters in Lindley Hall (formerly Science Hall), and plans were laid for a new building. Ellson took the lead in determining the design for the new facility, polling the faculty on their wishes and surveying other psychology buildings around the country. A modular system that could accommodate shifting demands for space was decided upon, and the new building was constructed on a $2 million budget.227 Completed in late 1962, the Psychology Building was dedicated in 1963. In three-quarters of a century the original laboratory containing a single Hipp chronoscope had metamorphosed into multipurpose research facility housing an array of specialized laboratories, each equipped with their own complex apparatus.

For the first time, department members had access to modern shop facilities, which were included as an integral component of the new Psychology Building. When chair Russell asked shop manager John Waltke what portion of the new building’s basement was needed for shop facilities, Waltke said, “the whole basement.” The all-purpose shop could perform a variety of mechanical, electrical, and construction tasks necessary to build, maintain, and modify experimental apparatus. Waltke was adept at scrounging government surplus for materials, and had a talent for making “something out

of nothing.” In addition to Waltke, Clete Ellett and Gus Abbott were largely responsible for the efficient operation of the shop.228

By the mid-1960s the department had achieved recognition both locally and nationally for its outstanding research program. In 1960, two years before his departure to Stanford, Estes became the first faculty member on the Bloomington campus to receive the title of Research Professor.229

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229 The only other IU Research Professor was Joseph Muhler of the School of Dentistry in Indianapolis. “Your
Three years later Neff received the same honor. In ten years the department’s expenditures had quadrupled, to nearly $1 million in 1963-64, a total exceeded only by chemistry and history. In a series of widely publicized studies of American university graduate programs between 1957 and 1969, the Indiana psychology department was consistently ranked among the top dozen or so institutions in the country, receiving high ratings for both the quality of its faculty as well as the effectiveness of its doctoral training. In 1964-65 the psychology department boasted 40 faculty members at the assistant professor and above, its largest size to date. In less than three years the new Psychology Building had reached its maximum capacity, and steps were taken to control the department’s future growth.

**The clinical program in the 1960s**

By 1960 the exponential increase in the number of clinic clients had tapered off, and the caseload dropped down to the more manageable level of approximately 600 per year. The clinical program continued to receive substantial training funds from the U.S. Public Health Service, and the number of graduate students grew from 30 to a peak of 60 in 1965 before stabilizing at around 40. The clinical staff retained an experienced core of faculty, and grew with a number of junior appointments, including Kenneth Heller (1933-), Richard D. Young (1935-88), Bruce Denner (1938-), and Richard H. Price (1940-).

There was a notable change in the composition of the client caseload during the decade. In the mid-1960s clients were almost evenly divided between children (under 18) and adult. Within a few years, the number of children had decreased substantially, due in part to changes in the training program as well as to the increasing availability of other mental health services in the community. Many of the clinical faculty, particularly Beier and Hardtke, were active in local mental health affairs. For instance, Beier played a major role in developing plans for a mental retardation research center, first proposed in 1963, and Hardtke was instrumental in the formation of the local community mental health center.

**Restructuring graduate training**

During the 1960s both undergraduate and graduate enrollment in psychology courses grew at a rapid pace. Undergraduate enrollment nearly

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tripled over the decade, to almost 12,000 students in 1969. Graduate enrollment, approximately one order of magnitude smaller, experienced a similar rise, from 300 to 800.

Increasing specialization accompanied the growth of the department, and by the mid-1960s the department had many areas, like American psychology generally, represented among its faculty. As new areas coalesced, it became more difficult to rely on the psychology of learning to provide a unifying theme. Among the consequences of this state of affairs was a restructuring of the graduate training program in 1963 and 1964. In the fall of 1963 a course in Advanced General Psychology was added to the first-year curriculum to prepare students for the Qualifying Examination. Covering the entire spectrum of psychology, the proseminar (or “pro-sem”) was designed to provide students with a broad base of knowledge in the discipline, regardless of their eventual area of specialization. It soon became obvious that examinations taken during the proseminar covering its various sections could be substituted for the Qualifying Examination itself. So the next year the old Qualifying Examination was abolished, and its name transferred to what used to be called the Preliminary Examination, taken at the start of the third year. By then the first two days of general coverage had been stripped from the former “prelims,” and all that remained was a major and two minors. A 1965 departmental brochure noted that: “The Qualifying Examination is a test of the student’s competence in his area of specialization and it demands a high level of performance and a wide familiarity with the relevant literature.” The areas of specialization were listed as “learning, sensory, physiological, mathematical, personality, or clinical.” Within a few years coursework was substituted for the minors, and by the end of the 1960s all that remained of the comprehensive examinations was the single Qualifying Examination in the student’s major area of specialization prior to starting a dissertation.

Faculty growth peaked by the mid-1960s, and a modest rate of turnover allowed existing areas to be strengthened and new areas to be established. By the end of the decade the department had built upon its strong postwar base rooted in the psychology of learning and had developed impressive programs in sensory, cognitive, and mathematical specialties, while remaining a leader in the study of animal learning. The conduct of sophisticated empirical research to test specific theoretical notions continued to be the hallmark of the department’s research and training programs.

233 Ibid.
In 1966, Russell became dean of advanced studies at Indiana University, and Conrad Mueller was recruited to serve as chairman, a position he had held previously at Columbia University. After two years, Irving Saltzman, who had been serving as associate chairman, succeeded him as department chair. Saltzman had been a faculty member since the late 1940s, and was familiar with the department’s internal culture and its role in the university. Like his predecessor, he was committed to democratic governance by the faculty in departmental affairs. Although growth in faculty numbers had peaked, the department’s program maintained its dynamism.

As a result of a brief period of unusually high faculty turnover in the late 1960s, opportunities were available to make some key appointments. In 1968, Richard M. Shiffrin (1942-), a recent Stanford PhD, was recruited. He had worked with doctoral alumnus Richard Atkinson. Their path-breaking joint paper, “Human Memory: A Proposed System and Its Control Processes,” was published in 1968 and opened a useful space for the structural analysis of memory by means of computational modeling. Both Atkinson and Bill Estes, also at Stanford, urged Shiffrin to accept the offer to join the faculty at Indiana. “They told me that IU was a good place to start a career, but that I probably would not want to stay,” Shiffrin recalled. “But I stayed.”

In the next three years, six more professors were hired. Samuel Komorita (1927-2006) joined the social area. In the clinical area, an established researcher in behavior genetics, Richard J. Rose (1935-), was recruited. James C. Craig (1942-) joined the sensory group, extending its coverage to the psychophysics of the skin. During the same period the area of animal learning received a boost with the hiring of William D. Timberlake (1942-)

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in ethological and comparative studies, and of Eliot Hearst (1932-), who also had broad interests in animal learning as well as the history of psychology. Psycholinguistics received significant recognition for the first time when David B. Pisoni (1945-) came in 1971 and started a productive Speech Perception Laboratory.

In 1969, Peggy Intons-Peterson, who had worked as a part-time lecturer and research associate since 1956, received a dramatic change in her professional status: promotion to full professor with tenure. Recognized by her scientific peers as a major contributor to the research literature, she became the second woman ever tenured in the department (and the first to exercise her status). An unlikely pioneer, Intons-Peterson did not complain about the gender politics that delayed proper local recognition and remuneration but handled her elevation in rank with dignified aplomb, becoming an effective advocate for women's affairs on campus as well as an exemplary department citizen.

Intons-Peterson was not only a pioneer in shifting the male status quo in the department, she also steered efforts to extend gender equity at the university in various ways. In 1971, she conducted a study on the status of women at IU that revealed entrenched discrimination in recruitment, hiring, and compensation for women faculty. The findings led to the creation of the Office of Women's Affairs the following year. Serving as associate dean of the College of Arts and Sciences (1972-74) and acting dean of the faculties (1974-77), her shrewd judgment and sensitivity to fair play were valued by both faculty and administration. She started teaching a course, P460: Women: A Psychological Perspective, in the early 1970s. Reportedly the first course in the College dealing with women and gender, it contributed to the university's nascent women's studies initiative.

In the 1970s, under social and institutional pressure for gender equity, department hiring practices began changing. Although 10 new faculty appointments were granted to women between 1970 and 1979 (nearly equal to the total for the preceding 50 years), only three were tenure-track. Linda Smith, fresh from her PhD at the University of Pennsylvania, was hired in 1977. A cognitive and developmental psychologist, Smith's primary research interests were grounded in infant cognition and language development. Her

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236 The decade before, Mary Jeffrey Collier received tenure at the end of the 1952-53 academic year. She was away on fellowship the following year, and resigned in 1954. Intons-Peterson was married to Lloyd Peterson, and her slow advancement revealed a pervasive double standard for women. While Lloyd advanced through the ranks of instructor to professor in typical fashion, Peggy gained the title of Research Associate in 1956, two years after their arrival, and continued to serve the department in a succession of non-tenure-track positions for the next 13 years, in both research and instruction. Intons-Peterson remembers that she was able to do her research and could always say "no" to teaching. Yet she also believes that it would have been useful to have a regular faculty position. Elizabeth Rosdeitcher interview with Margaret Intons-Peterson, 8 April 2013.
productivity earned her early tenure and promotion in 1981, becoming the second tenured woman on the active faculty and only the third ever.

On the undergraduate level, psychology continued to be a popular subject among students through the 1970s and into the 1980s. Course enrollments averaged around 6,000 students each semester since 1971, with 100-level courses accounting for nearly three-fifths of the total.\(^{237}\)

**Indiana Conference**

Mathematical and cognitive psychology continued to be a strong suit of the department. Beginning in the latter part of the 1960s, the department hosted an annual conference on mathematical psychology throughout the 1970s. Known variously as the Midwestern Mathematical Psychology Meeting, Indiana Theoretical and Cognitive Psychology Meeting, or the Indiana Cognitive/Mathematical Psychology Conference, the meetings attracted faculty from universities from the East Coast to Colorado to share their research, theories, and insights. A recurring highlight was the annual dinner at which puppets and dolls were given out for such awards as “the Xerox Award for the outstanding re-contribution to the literature” and the “Noam Chomsky Award for the talk or presentation with the lowest approximation to English.”\(^{238}\) In the middle 1970s, an edited book of annual proceedings, under the title *Cognitive Theory*, was produced, with department members serving as editors. In the Preface to the proceedings of the ninth conference in 1976, editors Castellan and Restle emphasized the dynamic nature of developments in cognitive-mathematical-theoretical psychology:

> The “theory” in this book is not the sort of finished dogma that appears in textbooks and can be relied on by workers in other fields as a proper summary and explanation of the field. Instead, we deal with theory in action, near or (sometimes) beyond the frontiers of knowledge, full of energy, activity, and error of one sort or another. The reader of this book must be prepared to handle difference of opinion but is rewarded with some of the newest current thinking, the ideas that will infuse and inform new experimental work for some time.\(^{239}\)

In 1978, the book series was discontinued, but the annual conference continued for a short time until other conferences of different forms and under different names took place.

\(^{237}\) Harriet Kenny, “Bloomington Campus Psychology Department Enrollment Comparisons,” September 1986; Psychology Department Files.

\(^{238}\) R.M. Shiffrin, personal communication, 29 Sept 2013.

Active researchers such as Shiffrin, Greeno, Restle, Castellan, and Lindman kept publishing in this rapidly proliferating area. In 1979, Restle became the editor of the *Journal of Experimental Psychology: Human Perception and Performance*. He expressed his expansive hopes for the *Journal*: “Any theoretical or methodological tradition—phenomenological, ecological, psychophysical, Gestalt, information processing, or functional—or any tradition that yields new information with good experiments is welcome. As new problem areas arise in experimental psychology, this journal will grow to encompass them.”\(^{240}\) Unfortunately, the life of this talented theoretician was cut short by his premature death in 1980.\(^{241}\)

**Specialization in the graduate program**

Along with the rest of the academic community, the psychology department entered an era of limited resources in the 1970s. The heady days of expansion were over. Federal research and development funding levels had peaked, and campuses were settling down after a period of political upheaval. In response to tightening budgets, the number of graduate students enrolled in the department declined during the 1970s, from approximately 100 to 65 in 1980. Doctorate production peaked as well, and began a slow decline in numbers.\(^{242}\)

By the early 1970s nearly all aspects of graduate training had undergone further specialization, and the shared experience of graduate student cohorts gave way to greater diversity. Over the preceding two decades the role of the comprehensive examination (“prelims” until 1964, “quals” afterwards) in assuring broad knowledge of the field had been taken over by coursework, and the Qualifying Examination had become a test in the student’s major area of concentration prior to the dissertation. Even this was further individualized in 1969 with the advent of “specialized quals.” Students were required to assemble an Advisory Committee composed of three faculty members and a representative of the outside minor field, and submit an “examination proposal” to them. Based on the proposal, students had to pass a six-hour written test and a subsequent oral examination in order to be admitted to candidacy for the PhD.\(^{243}\)

Research training also became more specialized. In the fall of 1970 the required sequence of courses in Advanced Laboratory Methods was

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242 “Program Evaluation, Department of Psychology,” January 1979, 69; Psychology Department Files.

dropped, due in part to the decline in the study of learning as a dominant interest among both faculty and incoming students, as well as to difficulties in running such courses. An apprentice program that utilized existing research facilities replaced it. Students were now required to conduct a first-year and a second-year research project, each in a faculty laboratory of their choice. Although projects were conducted individually, first-year students met together in a course to discuss their work.\textsuperscript{244}

On the substantive side, the proseminar course, Advanced General Psychology, was under pressure as well. It had proved inflexible in accommodating the diverse backgrounds of new students, who arrived with vastly different levels of undergraduate training in each of the areas. In order to provide closer adjustment to individual needs, the proseminar was replaced in 1971 by a series of two-credit “core courses.” The selection soon included courses in clinical psychology, developmental-comparative psychology, complex cognitive processes, learning and motivation, physiological psychology, sensory psychology, and social psychology.\textsuperscript{245}

Admissions policies in the 1970s came to reflect and to further reinforce specialization in the graduate training program. Traditionally the department had guaranteed continuing financial support through assistantships and fellowships to graduate students in the program, which benefited faculty and students alike. Despite the burgeoning enrollments of the 1960s, the department was able to continue that policy because of the large amount of extramural support obtained by faculty members. But as research funding became tighter, it became increasingly difficult to provide financial support to an unrestricted number of students, and by 1973 rationing became necessary. A quota system was begun to apportion student slots among major areas. Each area—clinical, animal, cognitive, developmental, physiological, sensory, and social—was allotted a specified number of invitations it could offer to prospective students, based on a complex formula devised to equalize the ratios of students to faculty. Faculty committees in each specialty began to process the student applications falling in their own area because “the selection of the best candidates demanded a detailed knowledge of the kind of training that was appropriate for each specialty, the strength of the undergraduate program at different institutions, and the significance of letters written by different individuals.” In short, specialized criteria for admission developed in each area.\textsuperscript{246}

The department’s diversification into standard specialty areas was evident when the traditional “specialized quals” were abandoned in 1977. The

\textsuperscript{244} Ibid., 6-7.  
\textsuperscript{245} Ibid., 7.  
\textsuperscript{246} Ibid., 8.
self-designed examinations were deemed insufficiently diagnostic of possible weaknesses in the student’s coverage of the area, and they made comparisons between students difficult. The department returned to a standardized “general examination” in each major area, and qualifying examinations covering topics other than traditional academic fields were discouraged. In order to guide students, “general area reading lists” were prepared by groups of faculty members for each major area.247

**Area developments and graduate training**

In 1969, longtime clinic director Beier died unexpectedly. As Leon Levy assumed the directorship, the clinic was in the midst of redefining its role in the local mental health scene. The outreach efforts of Beier, Hardtke, and others contributed to the proliferation of new facilities for psychological services in Bloomington and the surrounding region. Beier’s plans for a mental retardation research center had come to fruition with the construction of the Indiana University Developmental Training Center, completed in 1969. The previous year community mental health services were inaugurated for Monroe and its neighboring counties, with the opening of the South Central Community Mental Health Center. Other new facilities included the Center for Human Growth, sponsored by the School of Education, and the Middle Way House, begun by the Indiana University Volunteer Students Bureau to treat drug abusers. Both opened in 1970.248

Other clinical faculty members were engaged in research and consultation concerning community mental health issues. For instance, Levy did research on the therapeutic processes underlying self-help groups and Price developed a practicum in crisis intervention. On the theoretical side, Heller, Price, and Denner explored the paradigm shift involved in community psychology.249

Like the rest of the department, the clinic had to cope with decreasing federal funds for training support. Research training continued to be emphasized, and a new element called “on-line service” was introduced into the clinical practicum. Under this system, graduate students were responsible for making case decisions and conducting brief psychotherapy on selected clients, thus gaining valuable first-hand experience.250 By the end of the 1970s, a number of new faculty members had joined the clinic, including John E. Bates (1945-), Robert W. Levenson (1946-), Thomas F. Oltmanns (1949-), and Kenneth A. Dodge (1954-). In 1979, Richard

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M. McFall (1939-) was recruited to become director of the clinic. In 1984, Dodge received an APA Distinguished Scientific Award for an Early Career Contribution to Psychology for his research on childhood precursors of psychopathology and modeling social information processing in aggressive children.251

Among the areas that experienced renewal in the 1970s was developmental psychology. Although some department members such as Cairns and Young had conducted research in developmental psychology in the 1960s, a critical mass in the area did not start accumulating until the mid-1970s. Three new PhDs—Jeffrey Alberts (1948-), Richard N. Aslin (1949-), and Linda B. Smith (1951-)—were hired, representing physiological, sensory, and cognitive specializations within developmental psychology. They shared a common outlook that emphasized the multi-level, history-dependent, and multi-causal (and, at its core, opportunistic) nature of developmental processes. They quickly established active research programs, and soon received national recognition for their promising accomplishments. In 1982, Aslin received an APA Distinguished Scientific Award for an Early Career Contribution to Psychology for his studies on infant perception.252 Although Aslin departed in 1984, three more faculty members joined this emerging cluster in the mid-1980s—Susan S. Jones (1948-), Esther Thelen (1941-2004), and Sheila J. Walker (1950-). In addition, professor June M. Reinisch (1943-), director of the Kinsey Institute for Sex Research from 1982 to 1993, had research interests in developmental psychology.

Physiological psychology was another area earmarked for development in the mid-1980s. Although the Center for Neural Science was established in the mid-1960s, by 1980 the faculty list dwindled to four, with no graduate students. Under the rubric of behavioral neuroscience, new faculty members were recruited to add strength to the area. In 1986, Dale Sengelaub (1956-) was hired, followed by Ronald Kettner (1950-) and Joseph Steinmetz (1955-) the next year, and Joseph Farley (1951-) the year after. George Rebec (1949-), hired the decade before, became the acting director in 1984 of the Neural Science Program, and spearheaded its re-establishment. Outside consultants were brought in to assess needs and opportunities, and nearly 40 IU faculty from a variety of departments expressed interest in neuroscientific questions. By the late 1980s the program had regained a critical mass of faculty and student involvement.253

253 IU Archives/C323/Box 10/Folder Psychology-Neuroscience Center, 1985-1990.
The close ties between clinical and experimental areas were further strengthened in 1984 when the department received a major training grant from the National Institutes of Mental Health. This renewable grant was used to support both predoctoral and postdoctoral students for training as clinical scientists, and involved around 10 faculty members, half from the clinical area and half from developmental, behavioral neuroscience, and social specialties. In the same period, David Pisoni, the director of the Speech Perception Lab, received a five-year renewal on the NIH Multidisciplinary Training Program in Speech, Hearing and Sensory Communication, to fund three postdoctoral and one predoctoral scholars. The training faculty members were drawn from psychology, speech and hearing sciences, and linguistics.

The social area got a boost in 1978 with the hiring of Russell Fazio (1952–). His research on the attitude-behavior relation was recognized in 1983 by an APA Distinguished Scientific Award for an Early Career Contribution to Psychology.

Through the 1980s, the department continued to offer seven major areas of graduate specialization: animal learning and behavior, developmental, cognitive/mathematical, social, behavioral neuroscience (physiological), sensory, and clinical. The boundaries between them, however, remained somewhat fluid as faculty and students sometimes engaged in research pertaining to more than one field. Cross-fertilization was also encouraged by requiring graduate students to take core courses in five of the seven areas. Rigorous research training endured as the hallmark of graduate training in both experimental and clinical fields. As the 1987-88 department brochure stated: “The graduate program particularly emphasizes training in experimental design, scientific methodology, and the quantitative analysis of scientific data.” In addition to passing two required statistics courses, students had to complete two research projects during their first three years. The total number of full-time graduate students numbered about 50 in 1988, down more than one third from the levels of the 1970s, with the happy result of a lower graduate student/faculty ratio. A comprehensive student evaluation process further ensured close contact between graduate students and faculty. Upon admission, each graduate student was assigned an advisor. The entire faculty reviewed each student’s progress at the end of each semester for the first two years. At the conclusion of the second

year, the student's advisor presented a summary evaluation to the faculty. Students had to then pass a qualifying examination during their fifth semester in order to be admitted to candidacy for the PhD degree. Doctorate production between 1980 and 1988 averaged 13.8 per year, which was practically identical with the overall rate since the initial expansion of the PhD program in the late 1940s and early 1950s.\textsuperscript{258}

**IU psychology centennial**

In the 1987-88 academic year, psychology surpassed English as the most popular undergraduate major. As the 100th anniversary of the opening of IU’s first psychological laboratory approached in 1988, Eliot Hearst, a researcher in learning and conditioning and teacher of the history and systems of psychology course in the department, headed a centennial committee to plan for the occasion.\textsuperscript{259} Hearst and former student James Capshew (BA 1979) compiled a monograph, *Psychology at Indiana University: A Centennial Review and Compendium*, which contained a narrative history as well as lists of psychology faculty and graduate degree recipients for the past century.\textsuperscript{260} On April 8 and 9, over 200 people attended a series of informal reunions, group conversations, lectures, and a banquet featuring after-dinner remarks by Richard Atkinson (PhD 1955), former Director of the National Science Foundation and current Chancellor of University of California—San Diego. Alumni and faculty mingled with current department staff to share memories and gain insight into the present programs of the department.

The American Psychological Association sent a reporter, Tori DeAngelis, who filed a story in the June 1988 issue of the *APA Monitor*. She noted the presence of many former students, including Atkinson, who was also president-elect of the American Association for the Advancement of Science. Other graduate alumni remarked on the breadth of scope and diversity encountered in their education. She summarized: “Talking with people who graduated in different decades elicits uncannily similar perceptions of the department’s character over the years: academically hard-core and research-oriented, but personally supportive.” Among the scheduled speakers were former chair B.F. Skinner, but he had suffered a recent head injury and sent a letter instead, read by professor emeritus James Dinsmoor. “I am

\textsuperscript{258} From 1952, when the first wave of postwar graduate students started completing their PhDs, to 1987 the department has awarded an average of 13.4 PhDs per year.

\textsuperscript{259} In addition to Hearst, the centennial committee included faculty members Jack Bates and James Craig, staff member Harriet Kenny, and historian of science James Capshew.

proud,” Skinner wrote, “to have played a small part in the distinguished history of the department.” Of the department’s 37 faculty members, nearly 40% had been hired in the last 10 years, including 10 individuals hired in the last 4 years, presaging major changes to come.

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When Irv Saltzman stepped down as chair of the Department of Psychology in 1989, he capped a distinguished 20-year administrative career that had lasted through four IU presidents. Saltzman had first come to Indiana in 1948 as part of the postwar boom, when President Wells was overseeing an academic renaissance that was remaking the institution as a research university. After a brief stint as acting chair in 1967, Saltzman was elected to lead the department in 1969. He skillfully managed the many demands placed on him by more than 40 faculty members, up to 140 graduate students, and an undergraduate population of psychology majors that fluctuated between 400 and 800. He was known as a wonderfully supportive chair, but a tiger in meetings with university administrators, protecting the interests of his faculty. In a 1988 interview with an undergraduate student regarding the future of the department, he predicted robust growth in both neural and cognitive approaches, but hoped that “the department will not become divided with neural science and cognitive science separating to form their own departments.”

Saltzman’s successor as chair was Peggy Intons-Peterson, who had been part of department’s postwar cohort. In 1988, her disciplinary peers elected her as the President of the Midwest Psychological Association, while her institutional contributions were recognized by the receipt of the inaugural Office of Women’s Affairs Faculty Award for Distinguished Scholarship and Service to Women of Indiana University. Under her leadership, the department continued to expand the recruitment of women psychologists. From 1980 to 1988, over half of the 17 departmental appointments made to women psychologists were tenure-track, and a total of three gained tenure.

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263 Tracy Adams, “Profile of Dr. Saltzman,” P459 project, 2/18/88.
during the period. Thus, when Intons-Peterson became chair, there were a total of four tenured women (including her) on the psychology faculty.

Table 8.1: Female Faculty Members Throughout the Last Century

<table>
<thead>
<tr>
<th>Decade</th>
<th>Appointments</th>
<th>Tenure-Track</th>
<th>Tenured During Decade</th>
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<td>1930–1939</td>
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</tr>
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</table>

When Intons-Peterson assumed leadership, the department was entering a period of faculty turnover, due largely to the aging of a major faculty cohort that arrived during the period 1947-54. Amounting to nearly a quarter of the faculty, nine professors reached emeritus status in the period 1986 to 1992, many with four decades of service. The majority had spent their careers at Indiana University, providing continuity and stability to the department since the 1940s. With this natural pruning of personnel, opportunities for strategic hiring were presented. Among the new faculty hired in the period from 1989 to 1995 included: Meredith West (1946-) and Preston Garraghty (1949-) in animal behavior, Julie Stout (1962-) in neuropsychology, and Thomas Busey (1966-) in visual information processing.

Center for the Integrative Study of Animal Behavior

A productive partnership was added to the area of animal behavior in 1989 with the hiring of Meredith West as a professor and her husband, Andrew P. King, as a research scientist. They quickly established a research aviary a few miles from Bloomington, where they also lived. The department’s animal behavior area was gaining strength, and included Timberlake, Hearst, and Alberts in addition to West and King. Soon an interdepartmental group of organismic biologists (from the Biology Department) and

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Mueller (1986); Berry, Dinsmoor, L. Peterson, Yamaguchi (1987); Saltzman (1989); Buchwald, Heise (1990); Allison (1992).
animal psychologists (from the Psychology Department) joined forces and hatched plans to compete for a Research Training Grant (RTG) from the National Science Foundation with the concomitant creation of an interdisciplinary research institute, the Center for the Integrative Study of Animal Behavior (CISAB). Bill Timberlake (Psychology) and Ellen Ketterson (Biology) provided leadership for CISAB and the RTG under the overall objective of understanding the behaving animal in its natural environment.

The RTG proposal outlined a comprehensive program under the title, “Choices, Transitions, and Constraints: An Interdisciplinary Program in Animal Behavior,” with five broad research themes: communication; sexual behavior and mate choice; orientation and migration; learning and behavioral plasticity; and parental behavior and ontogeny. There were 13 faculty members listed on the roster of personnel (7 from psychology and 6 from biology), and another 8 as adjunct members. In September 1990, the RTG was funded, with $1.5M over five years, with an official start date on January 1, 1991. In the meantime, CISAB continued to be organized as an IU research center, which included a renovation of a house at 402 N. Park Avenue for offices and a small lab space. In June 1991, Ketterson and West become co-editors of Animal Behaviour, a major journal in the field.

With major funding in place, the Center for the Integrative Study of Animal Behavior became a bustling node of diverse research and interdisciplinary graduate and post-graduate training. After five years of operation, the RTG was renewed for another term, under the leadership of Ketterson and Sengelaub as co-PI’s. In the spring of 1992, CISAB organized and hosted the first annual IU Animal Behavior Conference, which provided a venue for graduate students, undergraduates, and post-doctoral fellows from IU and elsewhere to interact and present their research to a diverse audience. In 1995, CISAB obtained National Science Foundation funding to create a site for Research Experiences for Undergraduates (REU) in Animal Behavior. The program provided research experiences for IU undergraduates as well as summer internships for underrepresented minorities. Over time, the Animal Behavior Conference grew substantially, evolving into a regional animal behavior meeting. In 2011, 141 researchers (59 visitors)

266 Faculty from psychology: Alberts, Farley, King, Sengelaub, Steinmetz, Timberlake, and West; adjunct: Rebec and Thelen. Faculty from biology: Ketterson, Nolan, Phillips, Rowland, Skinner, and Suthers; adjunct: Lively and Nelson. Also adjuncts DeVoe (visual sciences), Hunt (anthropology), Prange (medical sciences), and Schroeder (medical sciences). Indiana University Archives/C323/Box 10.

267 Ketterson & Sengelaub to George E. Walker, 17 Mar 1995. Ibid.

268 As of 2011, the REU program in Animal Behavior was one of the longest-running and most successful REU programs in the nation, providing summer research training for 167 undergraduate research interns since 1995, and 117 interns since 2001. These undergraduates came from 59 institutions, and nearly 70% were underrepresented minorities. More than 80% of those who have graduated from college were currently pursuing graduate degrees or have found science-related jobs.
attended from 19 institutions and 12 states, and presented 55 talks and posters.269

Cognitive psychology and cognitive science

Researchers in the department played key roles in laying the foundations of the cognitive revolution during the 1950s and 60s. Experienced faculty and new hires in the 1970s and 80s contributed to the expansion of the area beyond psychology in the effort to create a new interdisciplinary field known as cognitive science. For instance, John Castellan, a productive member of the mathematical area since 1965, was an early and enthusiastic supporter of computers in psychological research and instruction. A specialist in nonparametric statistics and multivariate analyses, he also performed research in decision-making under uncertainty. Appointed editor of *Behavior Research, Instruments, & Computers* in 1990, he observed relevant developments in the research environment, including “increasing collaboration in research projects, increasing reliance on technology in the conduct of research, and the increasing fusion of teaching and research” in an editorial. His productive career was cut short by his premature death in 1993.270

A steady stream of hires in the 1980s and early 1990s kept the cognitive area strong and provided the impetus to expand into new areas of interdisciplinary cognitive science. Among the new faculty were Robert Nosofsky (1956-), Janet Metcalfe (1950-), Geoffrey Bingham (1954-), James Townsend (1939-), John Kruschke (1961-), and Robert Goldstone (1964-), adding both breadth and depth to the cognitive area.

In 1988, an organizing committee composed of representatives from psychology, computer science, philosophy, and education began planning an interdisciplinary program in cognitive science. Among the key individuals supporting the new venture were the leader of the cognitive area in the department, Rich Shiffrin, department chair Peggy Intons-Peterson, and the associate dean for planning in the College, Michael Dunn, from the philosophy department with adjunct status in computer science. The draft proposal emphasized that students would be adept in solving “difficult cognitive problems of practical significance” and recognized as “problem solvers and implementers of intelligent systems in all areas of society.”271 With support from IU president Thomas Ehrlich, the interdisciplinary Cognitive Science Program was officially launched in 1989, with Shiffrin as the inaugural director. Capitalizing on the strength of cognitive psychology faculty,

it also drew from a large number of departments and schools, not only in Bloomington but on other IU campuses as well.

Although the organizing committee wanted a cognitive science program that offered both graduate and undergraduate degrees, the initial program offered only graduate degrees, and (at first) relied largely on related courses offered by other departments for graduate course offerings. At its beginning, the Cognitive Science Program was a combined degree program, in which doctoral-level work in cognitive science was combined with doctoral-level work in another discipline (psychology, computer science, philosophy, linguistics, etc.). The PhD degree in cognitive science offered either a major or a minor. With a large and diverse faculty drawn from many departments and schools, ranging from business to optometry, graduate students had many research options. Also, for those who chose not to pursue a PhD, there were various graduate certificate programs available, including dynamical systems; language and speech; logic, language, and computation; and modeling.272

In its inaugural year, 1989-90, the program offered just one course (Q500: Intro to Cognitive Science) and had only eight graduate students. By the second semester, the program offered four graduate courses and enrollment mushroomed, from eight to 65.273 From 1990-1995, the program offered about four graduate courses per semester, growing from eight in 1989 to 96 students enrolled per semester in 1995-96.274 That year, the program started to offer undergraduate courses—Q300: Survey of Cognitive Science and Q301: Brain and Cognition. Graduate enrollments continued to climb, to a new record of 118 graduate students in the first semester of 1996-97.

As IU’s cognitive science program continued to grow, it formed an intellectual hub for faculty and students from many units who had related interests in cognitive science writ large. The research vitality of the program was bolstered by contributions from fields reaching far beyond psychology, fields such as anthropology, artificial intelligence, neuroscience, linguistics, and philosophy, though most of the outreach could be viewed as centering in aspects of mind and brain, and hence in the province of psychology. Thus the study of cognition expanded and took place in both the psychology department and the cognitive science program, but was facilitated by collaboration and coordination among disciplines. As a mark of IU’s leadership nationally, it was chosen as the site of the 1992 annual meetings of both the Cognitive Science Society and of the Society for Mathematical Psychology.

274 Indiana University enrollment data; accessed July 2013.
In 1993 the National Institute of Health awarded another training grant, in Cognitive Modeling, to department faculty, with James Townsend as PI. Supporting both predoctoral and postdoctoral trainees, the program was focused on mathematical models of cognitive processes, including memory, attention, perception, low-level vision, and decision-making. In 1997, a colleague of Townsend at Purdue, Jerome Busemeyer (1950-), a specialist in decision-making, was hired at the senior level to add strength to the cognitive area. An undergraduate joint major in cognitive science was started in 1995, and a stand-alone BA major in 1997, with 50 students initially enrolled.

By the end of the first decade of the Cognitive Science Program, its success in fostering interdisciplinary research and collaboration led to a wider appreciation among department faculty about the fluid boundaries of psychology and its useful relations with other fields. Expanded notions of what areas belonged in the department, the added value of teamwork and cooperation in research, and a new sense of the department as a center of activity and reference point for other disciplines became more resonant. Some faculty began to think that “psychology” was too narrow a descriptor for a department with such far-reaching research initiatives and innovative faculty.

Clinical psychology to clinical science

When Richard McFall was hired in 1979 to direct the doctoral program in clinical psychology, there was a strong core group of clinical faculty, including Yamaguchi, Buchwald, Heller, Young, Rose, Bates, Levenson and Oltmanns. They represented a variety of interests and approaches with a shared commitment to scientific research applied to clinical problems. Since the beginning of the clinical training program over 30 years previously, IU had had a perfect record of renewal of its APA accreditation. In the late 1970s the clinical faculty was moving toward reemphasizing scientific research as the basis of clinical training and making changes in the curriculum to accomplish that goal, and McFall was able to crystalize and communicate that shared attitude.

In 1984, the department received a multiyear NIMH Research Training Grant in clinical science, one of only three awarded nationally. Focused on knowledge production, the overall goal emphasized scientific research in the etiology, assessment, prevention and treatment of psychological problems. Students were expected to roam freely across all content areas represented in the department, working with diverse faculty and laboratories. Faculty members who had not been trained in clinical, but whose interests

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had implications for solving clinical problems were added to the core faculty of the clinical program.

While each specialty area has its own substantive knowledge base and appropriate methodologies, knowledge in any sub-area within psychology also rests upon psychological principles and methodologies that are common to all. What this means for our program is that it is multi-pronged; our training emphasizes both breadth and depth. We see the boundary between clinical and non-clinical areas of psychology as permeable, with a number of non-clinical areas having direct relevance to clinical research problems. Hallmarks of our graduate program are the interactions between clinical and non-clinical faculty and the ease with which students can choose either clinical or non-clinical faculty as research sponsors.\(^{278}\)

The program also emphasized the acquisition of clinical skills, by means of practicum training, in which students would gain first-hand experience in directly working with individuals who suffer from psychological difficulties. “Students become aware of what is known about the assessment and treatment of specific clinical problems, while at the same time, also becoming acutely aware of what is not known.” Thus theory, research, and practice were integrated in coursework, in practicum experiences, and in student and faculty research, by deliberate design.\(^{279}\)

By 1990, faculty turnover yielded a stable base of senior faculty, consisting of Bates, Heller, McFall, and Rose, joined by junior colleagues Peter Finn (1954-), Amy Holtzworth-Munroe (1959-), Alexandra Quittner (1954-), and Richard Viken (1954-).

In 1993, a questionnaire was sent out to 124 alumni of the program, graduates between 1972 and 1992, to rate their training and its influence on their subsequent careers. The 99 completed questionnaires revealed, through anonymous responses, that, as a group, they thought the scientific training was excellent, were highly satisfied with their training, modestly rated their own scientific competence as above average, and reported that their performance of current professional responsibilities was influenced extensively by their scientific training.\(^{280}\)

The clinical science program underwent periodic review by the NIMH and the APA, for renewal of training funds and accreditation respectively, every five to seven years. In the description of the connection between clinical and non-clinical areas, the 1996 APA Self-Study of the training program used a new metaphor: “We refer to this cross-fertilization between


\(^{279}\) Ibid.

clinical and non-clinical areas as “hybrid training.”281 As the clinical Graduate Student Handbook stated, “The goal is for these hybrid students to integrate multiple perspectives (biological, clinical, cognitive, developmental, social) in their research on clinical problems.”282 Of course, achieving this training goal depended upon collaboration and coordination of the entire department faculty.

In 1998, a national study of the origins of clinical psychology faculty indicated that the Indiana program ranked fifth in terms of the number of graduates who were core faculty members at the 134 accredited, university-based clinical psychology PhD programs in the country.283 In 2005, clinical programs were ranked according to measures of mean publication and citations, yielding a composite ranking. IU was ranked 22.5 in publications and 4.0 in citations, yielding a composite ranking of 11th in the country.284

National reform efforts

McFall was active in Division 12, Clinical Psychology, in the American Psychological Association. As clinical psychology developed in the post-war environment, many theories and therapeutic traditions took root, ranging from humanistic to psychoanalytic to behavioristic, and Division 12 attempted to be inclusive. As clinical affairs increasingly came to dominate the APA in the 1960s, some members of Division 12 formed an interest group, Section for the Development of Clinical Psychology as an Experimental/Behavioral Science, known as Section III.285 In the 1980s, various reforms were attempted to prevent another defection of scientists from the APA, as happened earlier with the experimental psychologists forming an independent Psychonomic Society in 1961, but in 1988, a new association, the American Psychological Society (now Association for Psychological Science), was formed.286

In 1990, McFall was elected president of Section III, and he delivered an unusual presidential address at the APA annual meeting in Boston, in the form of “A Manifesto for a Science of Clinical Psychology.”287 Reflecting on

281 Ibid.
282 “Graduate Student Handbook,” Clinical Science Program, Department of Psychology, Indiana University—Bloomington, rev. 4/08.
the ungainly but accurate name of the group, he reminded the audience that
the section was dedicated to “building a science of clinical psychology, with
no allegiances to any particular population, content, or theory.” His man-
ifesto was simple, containing one cardinal principle and two corollaries.
The principle was: “Scientific Clinical Psychology Is the Only Legitimate
and Acceptable Form of Clinical Psychology.” McFall was rejecting the sci-
ence-practitioner model, put into place in 1949 to organize practice and
clinical training in the immediate postwar period by an APA-sponsored
conference held at Boulder.

In his eyes, the “Boulder model” had evolved into a dichotomy between
science or practice, giving the mistaken impression to students and the pub-
lic alike that they are equally worthwhile and valid by themselves. To illus-
trate the perniciousness of that view, he presented a hypothetical example
of an undergraduate chemistry major talking with her advisor about why
she would be choosing only those programs that require the least amount
of scientific training: “after all, she explains, she plans to do applied chem-
ical work, rather than basic research, once she completes her degree.” Such
an example was ludicrous, he admitted, but that was exactly what was
happening in psychology, he contended. He called on fellow members of
Section III “to declare unequivocally that there is only one legitimate form
of clinical psychology: grounded in science, practiced by scientists, and held
accountable to the rigorous standards of scientific evidence. Anything less is
pseudoscience.”

The need for quality assurance of treatment was the subject of the “First
Corollary”:

Psychological services should not be administered to the public
(except under strict experimental control) until they have satisfied
these four minimal criteria:

1. The exact nature of the service must be described clearly.
2. The claimed benefits of the service must be stated explicitly.
3. These claimed benefits must be validated scientifically.
4. Possible negative side effects that might outweigh any benefits must be ruled
   out empirically.

He echoed Julian Rotter’s warning, sounded from two decades earlier,
that clinical psychologists face external regulation unless the quality of their
techniques and interventions can be assured. “One of the problems facing
clinical psychology is that it has oversold itself,” McFall argued. “Clinical

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(6), 75-88.
288 Ibid., 75-79.
289 Ibid., 80.
psychologists cannot justify marketing unproven or invalid services simply by pointing to the obvious need and demand for such services, any more than they could justify selling snake oil remedies by pointing to the prevalence of diseases and consumer demand for cures.\textsuperscript{290}

The “Second Corollary” dealt with training: “The primary and overriding objective of doctoral training programs in clinical psychology must be to produce the most competent clinical scientists possible.” There was no consensus, McFall admitted, about what constituted effective scientific training. But he urged (like his mentor George Kelly) that those who train scientists “should be reflexive, taking a scientific approach to the design and evaluation of their training programs.” He had few illusions about the obstacles to change: “Institutional, departmental, and personal traditions, alliances, and empires are at stake, and these tend to make the system unresponsive to logical, empirical, or ethical appeals.” McFall ended his manifesto with an explicit call to action, despite the forces resisting change. He likened the current state of clinical psychology to a bicycle race, where the status quo was to be in the middle of the peloton, going with the flow. “Inevitably, a breakaway will come. Some groups of clinical psychologists will become obsessed with quality, dedicated to achieving it,” he predicted, calling on his fellow members of Section III to lead the breakaway pack.\textsuperscript{291}

McFall’s manifesto had reverberations and repercussions. Within the year, Section III streamlined its name to the Society for a Science of Clinical Psychology.\textsuperscript{292} A national debate and discussion was enjoined. Appropriating the term “clinical science” to distinguish it from other points of view, supporters argued for changes in training, certification, and public relations. In 1992, a special summit meeting on accreditation was held in Chicago, with representatives from the Council of Graduate Departments of Psychology (COGDOE), the American Psychological Society (APS), and the National Institute of Mental Health (NIMH). The summit focused on doctoral education and training in psychological clinical science.

In April 1994, McFall organized and chaired a conference on “Clinical Science in the 21st Century.” Held in Bloomington, it brought together leading figures from the best university-based programs in clinical psychology to discuss the ways forward for scientific clinical/health psychology. The conference soon gave rise to the Academy of Psychological Clinical Science (APCS), an organization of leading clinical science training programs that became a leading advocate for evidence-based clinical assessment, treatment, and graduate training. McFall was elected its first president in 1995.

\textsuperscript{290} Ibid., 80-83.
\textsuperscript{291} Ibid., 84-88.
\textsuperscript{292} Ibid., 75.
Beginning the Second Century

McFall’s national leadership activities on behalf of clinical science were the tip of the iceberg in terms of the Indiana department’s involvement with this important development. Many other faculty members, both current and past, and a host of graduates played significant roles, to the point where Indiana had its fingerprints all over the clinical science movement.293

The dynamic systems approach to development

As a member of the department’s productive developmental area, in 1985 Linda Smith received an APA Distinguished Scientific Award for an Early Career Contribution to Psychology for her “innovative exploration of the way humans perceive, compare, represent and think about complex objects and the relations between them; and for demonstrating clearly that a most profitable approach to acquiring an understanding of human knowledge is by studying the origins and growth of that knowledge in young children.”294 Within a couple of years, Smith and Esther Thelen, who joined the faculty in 1985 and was a leading researcher on infant motor development, were meeting with the “Dynamics Group,” an informal multi-disciplinary faculty gathering to explore the emerging paradigm of dynamic systems applied to cognition and behavior. In contrast to the dominant computational approach in cognitive science, which was mainly concerned with sequential ordering of states, nonlinear dynamic systems theory sought to understand how phenomena unfold in real time.295 A national workshop on “Dynamic Systems in Development” was held in 1989, funded by the National Institute for Child Health and Human Development (NICHD), which attracted nearly 200 participants, and was organized by Thelen and Smith, Bennett Bertenthal (University of Chicago), and Alan Fogel (University of Utah).

In the mid-1990s, Thelen and Smith joined forces on a major publication venture to explicate the theoretical principles and experimental results of dynamical systems approaches to development. Two linked volumes on dynamic systems were produced by the duo. The first, A Dynamic Systems Approach to Development: Applications (1993), was an edited collection

293 IU’s clinical program has contributed understanding and leadership through its former faculty members, including: T. Oltmanns (Washington University; incoming president of APPCS), R. Levenson (University of California–Berkeley; PCSAS board secretary; former president of APS), L. Carstensen (Stanford University), K. Dodge (Duke University), and J. Steinmetz (Ohio State University; current president of APS); and through its graduates, including: K. Sher (University of Missouri), H. Berenbaum (University of Illinois; outgoing president of APPCS), M. Pogue-Geile (University of Pittsburgh), B. Ditto (McGill University), T. Treat (University of Iowa), and J. Newman (University of Wisconsin). R.M. McFall, personal communication, 22 Sept 2013.


of research studies demonstrating the promise of such methods. In the Preface, they state:

\begin{quote}
The implications of seriously viewing developing organisms as dynamic, open, contingent systems are profound. Because the state of the system depends on the organism within its total context, there can be no logical distinction made between the organism and the environment as the cause of behavior and its change. . . . The system’s stability, and thus its vulnerability to change, results from the relative dynamic interactions of the components. In terms of traditional developmental issues, this inseparability means that the distinction between the “biological” and the “environmental,” including the cultural and social context, is not tenable, nor is partitioning behavior into these dichotomous categories.\footnote{Preface, in Linda B. Smith & Esther Thelen, eds., \textit{A Dynamic Systems Approach to Development: Applications} (Cambridge, MA: MIT Press, 1993), xiii-xiv.}
\end{quote}


In 1995, Thelen and Smith led the effort to win a major training grant award, for the Integrative Study of Development Processes, from the NICHD. Funding for five predoctoral and three postdoctoral trainees, it was one of the agency’s largest ever. Focused on understanding how typical and atypical developmental trajectories in children emerge in the interactions of multiple systems and mechanisms of change, it drew faculty from the department as well as optometry, kinesiology, and speech and hearing sciences. Kelly Mix (1964-) joined the faculty in 1996 and actively contributed to the growing national reputation of the developmental area with its pioneering integrative and complex systems approach.
CHAPTER 9
From Silos to Hub

In a rare move, the department hired one of its own doctoral graduates in 1991—social psychologist Edward Hirt (PhD 1987). Interested in issues of motivation and performance, he had served on the University of Wisconsin faculty before returning to IU, joining a growing social area, with Jerry Chertkoff, Jim Sherman, Russ Fazio, and Igor Gavanski (1958-2011). Paula Niedenthal (1960-) was hired in 1993. Shortly after Hirt’s arrival, the faculty voted to reduce the number of breadth courses required (5 out of 7 areas) of the graduate students, arguing that it placed too great a burden on students and that it cut into their research productivity. Eliot Hearst and Jim Sherman were among the faculty that staunchly opposed this move, claiming that broad exposure to the entire field of psychology was vitally important.

When Intons-Peterson turned 65 in 1995, she decided to step down from the chair position and retire. The procedure for selecting the next chairperson relied on the long-standing custom of requiring at least a 75% faculty consensus of acceptability in critical matters such as faculty recruitment. The Chair Selection Committee, consisting of Bingham, Jones, and Intons-Peterson, prepared a first ballot sent to all faculty members, listing every tenured member as the pool of potential candidates. The instructions read:

Vote for all of the individuals you consider acceptable for the position of Chair. “Acceptable” should be interpreted as meaning that you would be comfortable with having the person as Chair. We hope that a number of individuals will meet the 75% criterion.

Steinmetz was the only one who met the 75% standard. Since at least three-quarters of the faculty endorsed him as “acceptable,” a confirmation ballot (yes/no) followed, with a simple majority for approval. Behavioral

298 Hirt, trained under the old system, tended to agree with Hearst and Sherman, his doctoral advisor. E. R. Hirt, personal communication, 1 December 2013.
299 Chair Selection Committee to The Faculty, “Ballot 1 for Selection of the Next Chairperson,” 11 Jan 1995.
neuroscientist Joseph Steinmetz, just 40 years old and newly promoted, became the 11th chairperson of the psychology department (and a full professor) on July 1, 1995.\footnote{Chair Selection Committee to The Faculty, "Ballot 2 for Selection of Next Chairperson," 2 Feb 1995. See also "Procedure for Selecting the Next Chairperson," 12/23/95.}

The year 1995 proved to be a watershed year for the department. Not only was Steinmetz installed as the new chair, but Indiana University also had a new president, philosopher Myles Brand. The tradition of choosing a chair of mature professional age and departmental experience went by the wayside with the selection of Steinmetz, who was hired in 1987. During his recruitment, he was attracted by the prospect of joining an extremely strong faculty and the prospect of several concomitant hires in the behavioral neuroscience area. Concerned about the future make-up of the department, he had agreed to serve on departmental budget and policy committees as a junior professor.

Possessed of executive ability and interpersonal skills, Steinmetz was a strategic thinker and a powerful advocate for the interests of the department. He was concerned that each of the seven areas—clinical, animal, developmental, cognitive/mathematical, social, behavioral neuroscience, sensory—mostly kept to themselves, without much research collaboration and with few incentives for bridging different areas. In other words, he saw a department “tremendously siloed,” as he put it later.\footnote{J.E. Steinmetz, personal communication, 25 July 2013.}

A chief appeal of administrative leadership was to influence hiring opportunities and program building, and Steinmetz was determined to shift the department to emphasize more collaboration and cooperation in research. The cognitive area, with psychology at the center of a campus-wide program in cognitive science since 1989, was maturing rapidly and had gained national visibility. The clinical area was a national exemplar of the clinical science paradigm, and its program of hybrid training was known as the “Indiana model.” Steinmetz himself was part of a revitalized behavioral neuroscience area in the Neural Science Program. IU faculty, laboratories, and programs in psychology and neuroscience were already strong; the challenge was to bring them into more productive synergy.

\section*{Structural reorganization}

By the mid-1990s, the cognitive area had grown to about a quarter of the faculty. Members of sensory, behavioral neuroscience, and animal learning and behavior were discussing joining forces in a new “biology and behavior” area, which would include another quarter of the faculty. Disciplinary developments in theory and methodology as well as local preferences were
driving these structural changes. As faculty interests shifted and new directions were explored, research collaborations among faculty became more common, with a significant increase in cross-area training in the graduate program. The presence of NIH training grants, such as the Multidisciplinary Training Program in Speech, Hearing and Sensory Communication, headed by David Pisoni, which received another five-year renewal in 1994, gave further incentives for cooperative work. However exciting and fruitful these developments were, they made graduate recruitment and faculty hiring procedures sometimes “awkward and inefficient.”

Alive to the disciplinary changes that psychology was undergoing, particularly the emergence of interdisciplinary studies such as cognitive science and neuroscience, Steinmetz was proactively maintaining the department’s innovative edge. For nearly 30 years, the intellectual structure had been organized into seven content areas—animal learning and behavior, behavioral neuroscience, clinical science, cognitive psychology, developmental psychology, sensory psychology, and social psychology—and the areas exerted control over issues of graduate recruitment and faculty hiring. He was also looking ahead to the end of the College’s temporary moratorium on hiring. After the close of the spring semester in 1997, Steinmetz had conversations with area spokespersons to get a sense of concerns about organization. The need for bridge building between areas and integration across fields were mentioned. Linda Smith, area spokesperson for developmental, broached the idea of a name change for the department to better reflect the current configuration, such as Behavioral and Brain Sciences, or Behavioral, Brain, and Cognitive Sciences. “We should be pioneers in the field and change the name,” she suggested.

Seeking to explore new arrangements that might better serve the twin goals of research and graduate education, Steinmetz formed an Ad Hoc Committee on Department Structure in September 1997, appointing Hirt, Jones, McFall, Townsend, and, as chair, Bingham. About the same time, the *APS Observer* published a survey of employment trends in experimental psychology, which revealed a decline in the number of job prospects for traditional fields such as Animal Psychology or Behavior/Learning and the more plentiful job offerings in Cognitive, Social, and Developmental areas.

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303 [Steinmetz], “Meeting with Area Spokesperson[s], May 15, 1997.”

In his charge to the Ad Hoc committee, Steinmetz outlined a sweeping agenda:

(1) Determine if changes in department structure are likely, if not necessary, for us to remain among the top psychology programs in the country,

(2) Determine what aspects of department function will be impacted by any changes in structure that might occur over the next several years,

(3) Suggest how the department might change its processes and procedures to deal with changes in department structure, and

(4) If necessary, suggest alternative departmental structures that will assist in accomplishing Item #3 above while also accommodating significant trends and changes in the field.\(^{305}\)

The committee conducted a survey of inter-area faculty interactions of research, qualifying examinations, and dissertations, revealing wide variations in terms of faculty collaboration. The group met regularly during the fall semester, and by December the discussion had coalesced around some issues, foremost among them was reduction to fewer areas. Endorsing the trend toward bigger yet more diverse subfields, like cognitive and clinical and the proposed biology and behavior areas, the committee assumed consolidation was a given, and planned on perhaps five areas, each containing 5 to 11 faculty members. But two problems were raised: the potential areas would be too large and too diverse for graduate students candidates to be evaluated, and cross-area topics (e.g., perceptual learning, cognitive neuroscience) would not be represented. A proposed solution would be to have specializations or concentrations that would represent training programs, with three or more faculty members per concentration. Each concentration would evaluate candidate graduate students, compose qualifying exam committees, and so forth. The committee was reluctant to give up the traditional areas entirely, because of employment classification, correspondence with typical undergraduate course offerings, and general public relations value. With respect to the other major issue, faculty hiring, the committee suggested that proposed hires would be developed by the concentrations and then reviewed by the relevant areas before a faculty vote.\(^{306}\)

In their final report, the committee decided to decouple procedure from area control, and to allot each faculty member departmental support for one graduate student. To ensure quality control, graduate admission would be allowed if three faculty members agreed to serve on a prospective student’s

\(^{305}\) Steinmetz to Bingham, 9/17/97.

\(^{306}\) Bingham to Hirt, Jones, McFall, Townsend, and Steinmetz, "Ad Hoc committee notes (pre-meeting)," 4 Dec 1997.
committee (in line with graduate school requirements). As far as faculty hiring procedures, the committee’s logic determined that a minimum of five faculty members (about 15% of the whole) could propose a new hire. “To accommodate cross-area interests, faculty making a proposal need not do so on behalf of an area,” they wrote. In order to ensure fairness, hiring priorities would be established each year with fresh proposals.

Whether to dissolve the traditional areas was the most controversial task facing the committee. They surveyed other top psychology departments in the Big Ten, in the Ivy League, and in the California and New York systems. They found that the five-area configuration was perhaps the most useful model, noting that none had a sensory area and a couple had animal learning and behavior (ALB) or something similar. Heeding earlier discussions on possible new areas, the committee considered constraints on area formation. They decided that five faculty members represented a “stable concentration and sufficient critical mass.” The committee met with the Sensory and the ALB area faculty in early 1998 before the report was released. The ALB faculty preferred to retain their area autonomy and not join the behavior and biology area. They expressed concern over the lack of input leading to the decision to effectively eliminate their area if the proposal was ratified, noting that only a year earlier the ALB area was on the list for future faculty hiring.

By the end of April 1998, Steinmetz summarized the reorganization discussion in a memo, and presented four recommendations for a faculty vote. They were: each faculty member is allocated departmental support for one graduate student; graduate admission is allowed if three faculty members sign an agreement to serve on the committee to oversee the training; hiring proposals require the support of at least five faculty members; and five faculty members are required to form an area. The vote was 21 for the proposals, 10 against, and 5 abstentions. Realizing the significant minority who were against, Steinmetz wrote to the faculty: “Regardless of how you voted on this proposal, I would appreciate receiving, in written form, your thoughts (especially any reservations) regarding this proposal for consideration by the various committees that will be responsible for implementing these recommendations.”

John Kruschke, a faculty member in mathematical modeling and statistics, expressed concern about the minimum size requirement for area status. He pointed out that fewer than five faculty members might have enough

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309 Steinmetz to the Psychology Faculty, “Results of the vote on the Ad Hoc Committee on Department Organization,” 4 May 1998.
training resources, or that five faculty members or more might not have enough. He endorsed Linda Smith's observation that people could dissolve and reform areas to exclude certain individuals, or they might modify area boundaries to gain larger numbers or to gerrymander votes or committee memberships. "The point is that under the new rules there is no check that a new area is intellectually viable and politically balanced," Kruschke wrote. He proposed a process of departmental approval in which new areas, no matter their size, would come up for a vote.310

In fall 1998, the new areas became functional. The 41 active faculty members spread themselves across Biology and Behavior (15), Clinical Science (10), Cognitive (16), Developmental (10), and Social (6). Fifteen had two areas of affiliation, and David Pisoni had four.311

Faculty turnover slowed during the 1990s, but started picking up again in the early 2000s as faculty hired in the 1960s reached retirement age. Combined with a slight expansion in the permanent faculty target authorized by the College, new faces appeared with increasing frequency. Hired in the years immediately before and after the new millennium, some new faculty provided links between neural and cognitive approaches. They included Brian O'Donnell (1951-), William Hetrick (1965-), and Cara Wellman (1964-), who obtained her PhD from the department in 1993, with a double major in neuroscience and clinical psychology.

In the stream of new hires, one familiar face was welcomed back. Bill Estes, who had left Indiana for Stanford in 1962 and had subsequent stints at Rockefeller University and Harvard University, retired to Bloomington in 1999 and rejoined the faculty as a Distinguished Scholar after a 37-year hiatus from the department. Estes was forced to retire from Harvard due to age limitations on tenure (the last year such rules were in effect). Psychologist and lifelong friend George Collier (PhD 1951) noted, Estes and his wife, Kay, “were never happier than during their years at IU, where they retired. . . He was clearly at home.” Retirement for Estes was active, Rob Goldstone recalled: “Deep into his 80s, Bill continued to come to work every day, had an active and important research program, and was very tightly enmeshed in the psychology and cognitive science communities here. He gave many excellent talks in our ‘cognitive lunch’ series, which I appreciate all the more because I remember Bill telling me that he didn’t believe in ever giving the same research lecture twice.” Estes’ renewed association with the department lasted for a dozen years, until his death in 2011.312

310 Kruschke to Steinmetz, "Re: Results of vote on the Ad Hoc Committee on Department Organization," 4 May 1998.
312 R.M. Shiffrin; George Collier; Robert Goldstone, "Remembering Bill Estes," Psychological Science, 2011, 24
The Integrative Study of Developmental Processes training grant was renewed in 2000, with Linda Smith taking over the role of PI from Esther Thelen. That same year, Thelen and Smith convinced computational neuroscientist Olaf Sporns (1963-) to seek a faculty position. He was working on neural dynamics, with an emphasis on self-organizing processes and the role of action in creating change and complexity. Joining the department in 2000, he became an active member of the training grant faculty.\(^{313}\) Cognitive scientist Rob Goldstone, on the faculty for 10 years, received an APA Award for Distinguished Early Career Contribution to Psychology in 2000, for his elegant computational models that showed how object perception and concept learning were mutually constitutive.\(^{314}\)

**Psychology Building addition**

Steinmetz’s administrative bailiwick extended to facilities. For nearly 30 years, the department had to contend with a Psychology Building that became too small just a few years after it was built in 1963. As early as 1983, chair Saltzman and Gabe Frommer, representing the department building committee, sent a detailed memo to President John Ryan about the need for a “Psychology Building Addition.” Emphasizing psychology as a laboratory science more akin to biology or medical science rather than to the traditional social sciences, the memo cited the growth of faculty and consequent need for more lab space, the increasing use of computers (35 microcomputers and 34 terminals), and the fact that comparable institutions have more space. They argued that research practices have been dramatically changed by technological developments:

“In cognitive psychology, for example, the memory drum and the tachistoscope, which fit on a small table and test one subject at a time, have largely been replaced by computers, complex signal-conditioning devices, and several subject booths, which together take up half a laboratory suite, or more.”\(^{315}\)

As a result, laboratories and offices had to find other quarters—the Geology Building next door, Hillcrest Apartments down the street, and other places. Space needs had been a chronic administrative worry, with a succession of chairs and other faculty members concerned about departmental efficiency, morale, and solidarity under such conditions. When Steinmetz assumed the chair, plans to expand the Psychology Building

\(^{313}\) L. Smith, personal communication, 25 November 2013.


had been on the drawing board for decades, but each time campus capital projects were prioritized, it failed to get funded. It took the intervention of President Brand, who took a lively interest in the department, to finally achieve the go-ahead for construction in 2000.

CSO Architects, guided by the Office of the University Architect, designed the 48,000 square foot addition to the back of the existing Psychology Building. In contrast to the modern and unadorned façade of the existing building, where row of jutting office windows provided the only visual relief, the rear elevation echoed the predominant campus style of collegiate gothic. The addition was facing a grassy courtyard, with three other buildings filling in a traditional quadrangle design. Constructed of limestone, the addition boasted a handsome courtyard entrance, many windows, and precious new office and lab space. It was dedicated in 2002, nearly 40 years after the original Psychology Building first opened.

Jerry Forshee, longtime manager of the technical staff, was intimately involved in the addition’s technical design and planning as well as coordinating other aspects of the physical plant. He welcomed technical challenges, and his mantra was, “Don’t tell us what you want to build. Tell us what you want to do and we will find a way to make what you need.” The department shop, in other words, not only built, installed, and repaired equipment, but also invented scientific apparatus and instruments for all manner of experiments. Forshee, who came as a Master’s student in 1969 and never left, witnessed the coming of computers in psychological research, which revolutionized the acquisition and analysis of data.

Forshee inherited a long tradition, reaching back to the construction of the Psychology Building in 1963 and the employment of John Waltke as shop manager. Over the years, Waltke, Dwight Hector, and electronics designers Mike Bailey and Bill Freeman, developed many laboratory instruments for the department. Most recently, electrical engineers Mike Bailey and Tony Walker and manager Lee Deckard have made equipment ranging from eye-puff goggles with a sensor that records eye movements and the timing of blinks to an MRI-safe electronic cigarette that allows researchers to study brain changes that occur while smoking. Forshee retired in 2012, and now the 33-member staff is divided into four functional areas: fiscal (Elaine Parsley, fiscal officer), workshop and facilities (Lee Deckard, manager), information technology (Roger Rhodes, manager), and administrative staff and human resources (Lana Fish, coordinator).

Support for faculty research grants required more staff dedicated to grant management. Longtime staff members Lana Fish and Sheryl Mobley were brought on board to fill the growing demand, and Karen Jukes, Mark Adair, and Robert Knight, each hired during the early 1990s, have made many contributions to the department’s success over the last 25 years. E. A. Rosdeitcher, personal communication, 22 Aug 2013.
Strengthening undergraduate teaching

As the number of undergraduate psychology majors continued to grow, reaching more than a thousand in 2002, the department was forced to rely on a combination of tenure-track faculty, non-tenure-track lecturers, visiting professors, and graduate students to fill the demand for classroom sections. Adding to this pressure was the effort to reduce the tenure-track faculty teaching load from four to three courses per year in order to offer nationally competitive faculty positions. To cover existing psychology enrollments, Steinmetz estimated that it would take about 100 tenure-track faculty. To more than double the existing faculty of 40 was not a viable option, to say the least, so the chair and POSTCOM looked for other solutions. In step with national trends in hiring contingent faculty, IU reformed and liberalized its policies concerning non-tenure-track faculty positions.

In 2003, Steinmetz was able, with the blessing of the College and new university policies for non-tenure-track faculty, to start hiring lecturers on long-term contracts. The department sought to develop a cohort of pedagogically-oriented faculty to strengthen the undergraduate teaching program, and conducted national searches to hire the best possible candidates as lecturers with long-term full-time faculty contracts. Initially, three lecturers were hired—Cynthia Hoffman, Alan Roberts, and Scott Thompson—followed by Irene Vlachos-Weber a year later.317

External review

In the fall of 2003, College Dean Kumble Subbaswamy informed the department to prepare for an external review. He was seeking to re-establish an old College policy that called for periodic external reviews of each department, in order to assess needs and provide valuable feedback from outside academics to improve the department’s functioning vis-à-vis its disciplinary peers. The review committee was selected in consultation with Steinmetz and the other members of the faculty. To prepare for the review, the department assembled a comprehensive “Statement of Program,” a hefty report analyzing the department’s research foci, faculty hiring, departmental governance, facilities, graduate training program, and undergraduate education and curriculum. The document performed an important strategic function, highlighting the department’s strengths while also pointing out significant needs to be met or obstacles to be overcome, presumably with the help of the College.

The program statement began with a short “Overview,” introducing the study of psychology and its unique intersections with other disciplines

ranging across the humanities, the social/behavioral sciences, and the natural/mathematical sciences. Emphasizing interdisciplinarity, the overarching goals of the department were:

(1) to continue to promote psychology as an interdisciplinary science relevant to a wide variety of issues affecting human welfare; (2) to contribute significantly to the corpus of knowledge about human and animal behavior; and (3) to provide leadership at the local and national level through our research, teaching, and service.\footnote{318}

Noting that the department has made “a disproportionately large contribution to the University’s teaching mission and reputation at both the graduate and undergraduate levels,” a continuing challenge had been to balance the demands of mass education with exceptional research programs.\footnote{319}

The basic description of the department’s personnel revealed the size and complexity of the organization. It included 43 tenured or tenure-track faculty, 5 full-time lecturers and 5 part-time instructors, 93 graduate students, 27 postdoctoral scholars/research scientists, nearly 1,100 undergraduate majors, and 69 staff members (supported by university funds or research grants). The national status of the department, measured by reputation, federal funding, or other dimensions, was consistently ranked among the top psychology departments in the country. An impressive list of faculty honors and awards, such as membership in the US National Academy of Science or the elite Society of Experimental Psychologists, was cited to provide evidence of national achievement and international prominence.\footnote{320} “Without a doubt, the faculty of the IU Department of Psychology has gained the respect of colleagues from around the world. We can point to a very important hallmark of psychology at IU that has contributed significantly to our reputation: the combination of careful and deliberate selection of new faculty and our great success in retaining them,” the report stated. Historically, that was not always the case, but during this period, both the College and the University made strenuous efforts to retain outstanding faculty.

\footnote{318}{“Statement of Program,” Department of Psychology, Indiana University, December 2003, [draft 10/27/2003] p. 1.}
\footnote{319}{Ibid.}
\footnote{320}{The list included two members of the National Academy of Sciences; three faculty awarded the National Academy of Science’s Troland Research Award; a Rumelhart Prize winner; four faculty members of the Society of Experimental Psychologists; three faculty recipients of the American Psychological Association’s (APA) Early Career Contribution Award; and a number of faculty who have been elected to fellow status in the APA or the American Psychological Society (APS). Several younger faculty members have been recipients of such extra-university awards as Fulbright Fellowships, the Carnegie-Mellon University Chase Memorial Award, APA Young Investigator Awards, and the Boyd McCandless Award. In addition, a number of faculty members have received prestigious University awards, including Chancellor Professorships and Sonneborn Lectureships, Distinguished Teaching Awards, and Outstanding Young Faculty Awards. Many of the faculty members serve on prestigious editorial boards as well as NSF, NIH and other important panels and committees in Washington. Ibid.}
This hallmark was a direct result of the department’s governance structure. Operating under democratic principles, the entire faculty was involved in the operation of the department and its program. Some business was conducted by specialized elected standing committees, the most important of which was the Budgetary Advisory Committee (BAC) (to conduct annual merit reviews and advise the chair on faculty compensation) and the Policy and Steering Committee (POSTCOM) (to make recommendations on policy and planning, including faculty recruitment). Although most issues were decided by a simple majority vote, faculty hiring decisions were made by the department as a whole and required a 75% affirmative vote.321

The report identified seven areas of concern. The need to: (1) increase faculty size to 50-52 to preserve existing strengths and add new areas; (2) attract and retain undergraduate lecturers with competitive compensation; (3) address research and office space shortages through a combination of renovation and colonizing new lab space in the planned second science building; (4) remodel outmoded classrooms; (5) grow the graduate program and increase graduate student financial support; (6) increase staff support in grants management, technical and computer support, and secretarial services; and (7) promote and increase diversity by recruiting more minority faculty members and graduate students.322

The external review committee was made up of chair Gregory A. Miller, Professor of Psychology and Psychiatry and Director of the Biomedical Imaging Center, University of Illinois; Randall W. Engle, Professor and Chair, Department of Psychology, Georgia Institute of Technology; Michael S. Fanselow, Professor of Psychology and Area Chair, Learning and Behavior, UCLA; and, ex officio, Bennett B. Brabson, Professor of Physics, Indiana University. They visited the department on December 7-9, 2003, and submitted their 5-page report in January.

Agreeing with the department’s self-presentation about its quality, they concurred that it was “one of the very finest in the country.” They remarked on its unusual congeniality, “achieving a rare balance of support for junior faculty, freedom for outstanding senior faculty, and widespread enthusiasm for and investment in its leadership and governance,” and its vibrant research culture of interdisciplinary collaboration.

Four major areas of concern were identified. The first was faculty hiring, to replace existing lines and to expand into new areas, particularly cognitive neuroscience as the fMRI facility became a going concern. They advised the department to engage in “systematic dialogue” about the overall makeup

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321 Ibid.
322 Ibid.
of the faculty and what vision should guide future hires. The second concern had to do with resources. “On many fronts, the gap between appropriate resources (including classroom quality, undergraduate advising, regular-faculty teaching slots, research space especially for new hires) can only be described as enormous.” Citing the fact that the department provided the third highest number of credit hours in the College (behind Mathematics and English) and was responsible for 12% of all undergraduate majors, they strongly asserted that the existing faculty was too small and stretched too thin for the undergraduate demand. They enjoined the administration to treat psychology “as primarily a laboratory science with resource needs comparable to other laboratory sciences.” Related to this was the observation that the best undergraduate students were not being well served, based on interviews with seven students in the honors program. The students “raved” about their experiences working in faculty labs, but reported that coursework was unchallenging and academic advising was lacking. The fourth concern was diversity. They found highly favorable attitudes among the faculty in general and a strong sense of support among women faculty, but a “remarkably low” representation of people of color among faculty, staff, and graduate students. “To the extent the problem is campus-wide rather than department-specific, this should be vigorously addressed at the College and Graduate School levels.” Several, less important, issues or needs were identified, including: the degraded state of animal care facilities; need for budgetary flexibility; more planning for the MRI facility; making graduate student stipends competitive with other leading departments; and insuring that graduate students are appropriately trained for instructional service. They noted the drop in graduate enrollment from 1993-2003 was 16%, and that the current graduate program was undersized, and would be even more so with the planned growth of the faculty.323

Nearly eight months went by until Steinmetz, the department chair, responded to the external review committee’s report, saying, “We are in general agreement with the points raised by the reviewers.” To address the first point about faculty hiring, Steinmetz said that the faculty has a daylong retreat scheduled for the semester. In reply to the reviewers’ remarks about resources, he reiterated the department’s need for space in the second science building, an additional allocation for S&E expenses, and an increase in graduate student support. Responding to the reviewers’ observations on the undergraduate program, Steinmetz took issue with their characterization that students lack timely information about the program, and cited the existence of a course, P199: Planning Your Career in Psychology, required for all sophomores. On the general lack of diversity in the department,

323 Gregory A. Miller to David Zaret, Executive Associate Dean, College of Arts and Sciences, IU, 17 Jan 2004.
he responded that the department would continue to aggressively recruit minority faculty and students. Steinmetz’s tone throughout was cordial and collaborative, with ample praise for the ongoing efforts of the College to provide financial and moral support to the department. All in all, the external review was an opportunity for the department to receive outside affirmation of its distinguished status as well as to make a case yet again for additional resources from the College. 

The promise of fMRI

Throughout the 1970s, in the department and elsewhere, computer-assisted instrumentation gradually replaced the electro-mechanical relays and counters in human and animal experimentation with a dazzling array of probes, screens, and other means of presenting stimuli and recording responses. The dream of enhanced brain imaging had been achieved in the 1980s with the advent of Magnetic Resonance Imaging (MRI) for medical applications. In the 1990s, researchers pioneered ways to track the slight magnetic charge of blood in the brain while performing cognitive tasks in real-time, leading to the development of fMRI (functional MRI) machines. Such machines were instruments of great promise for research on the brain and behavior.

In May 2002, after the close of the spring semester, Steinmetz sent out his annual reminder to the faculty to start thinking about faculty recruitment for next academic year, and to forward any proposal, backed by at least five faculty members, to POSTCOM. Shiffrin wrote back, copying more than a dozen colleagues, about additional hiring in the broad area of sensory/motor systems, ideally someone working in cognitive neuroscience. A similar search two years earlier resulted in the hiring of Jason Gold (1971-), who had just finished his first year on the faculty, and Shiffrin reminded his colleagues that the desirability of an additional hire was discussed at that time. He also broached the idea of a hire of a sensory researcher who would work with fMRI, adding the conundrum: “We can’t get a grant to buy an MRI without a strong presence of such researchers, and can’t hire such researchers without an MRI.” Noting that College Dean Subbaswamy was putting up a million or two for lab start up costs for new biologists and physicists, he asked: “If they can get this, why can’t we?” He also found out that Swamy agreed to underwrite half of a large equipment purchase if the new hire would apply for a grant for the remainder, and, if the grant failed, Swamy would pick up the whole tab. Shiffrin estimated that a top of the line fMRI lab would cost $3M, and mused a similar cost-sharing scheme with the

324 Steinmetz to Subbaswamy, 2 September 2004.
College might be possible. Under a new College policy, the indirect costs associated with grants would return to the originating department rather than remain in the College coffers. He suggested that giving back some of the indirects to the College might work.\(^\text{325}\)

In June 2002, the IU Board of Trustees approved a $1,000 fee in addition to regular tuition for every new undergraduate starting in the fall of 2003 at IU Bloomington. The idea behind the new fee, dubbed the “Commitment to Excellence” (CTE), was to generate funds to support innovative programs that would, directly or indirectly, benefit undergraduate education. Word spread quickly, and Shiffrin mobilized his departmental colleagues to be first in line with a proposal to develop a brain-imaging facility on campus. The idea had been bandied about in the department previously, but the unexpected new source of funding might prove a bonanza. Finn, Bingham, and Smith expressed their enthusiasm over email, and Smith added, “I think the case we have to make is that we will be left behind if we do not do this. We cannot recruit top faculty without this, we cannot recruit top graduate students without this. There are places—Rutgers Newark for one, that bought themselves a research fMRI and have been using it to get much better faculty than they have had.”\(^\text{326}\)

Since Steinmetz was out of town, Shiffrin hastily assembled a proposal and sent it off to Bloomington Chancellor Sharon Brehm, whose office would ultimately decide the fate of the CTE funds. (Although Brehm was a psychologist and a member of the department’s faculty since 2001, she had been brought in as an administrator and had little contact with the department.) The cover letter was signed by 25 members of the department.\(^\text{327}\)

The proposal linked the hiring of an outstanding fMRI researcher to the creation of a well-equipped lab for such work. The extensive rationale cited a rapid increase in non-invasive brain-imaging techniques that allowed visualization of brain activity associated with thinking, memory, and emotion. “Such approaches have a strong and growing foothold in 21st century scientific research, and have generated a cadre of advancements not only in cognitive, psychological, and neural science, but also physics, chemistry, mathematics, statistics, informatics, anthropology, biology, philosophy, and computer science,” the proposal asserted. The popular appeal of brain imaging was also mentioned, as attractive to the public as well as students.


326 Smith to Shiffrin et al., 25 June 2002.

Retaining the university’s competitive edge with such a faculty and facility was a major aspect of justifying the expenditure: “It is absolutely necessary that IUB ‘pull itself up by its own bootstraps’ in order for us to become a player in the world research effort in this arena.” Addressing the plan’s relevance to the Commitment to Excellence Initiative, the rationale argued that increasing the number of scientists on campus would add directly to student opportunities for excellent laboratory and classroom instruction as well as one-on-one faculty mentoring. The case for indirect benefits was even more strongly made. Proclaiming “the scientific reputation of IUB is seriously degraded by the lack of human brain imaging,” the proposal stated that an fMRI facility would increase student interest by contributing to “an atmosphere of high technology innovations and cutting-edge science,” particularly in areas relevant to science and technology that have importance to the state’s economy. Left unsaid in the rough proposal was the fact the IU Medical School in Indianapolis already had an imaging facility with MRI machines.

**A new name**

In November 2004, the Biology and Behavior area voted to change its name to Biology, Behavior, and Neuroscience, citing the fact that the group had 19 faculty members with 14 doing neuroscience research, including the department’s most recent hire (in 2003), Anne Prieto (1960-), working on the cellular basis of neuroplasticity. The area had successfully pursued collaborations with the department’s Clinical Science area, and wanted to do the same with the Cognitive area, believing that cognitive neuroscience would be a major growth topic of increasing importance. Planning for the move of the department’s neuroscientists into the Multidisciplinary Science Building II was a concern, in order to maintain integration with faculty in the Psychology Building. There were three future emphases noted: molecular and cellular neuroscience, systems and behavior, and cognitive neuroscience. Funding from Commitment to Excellence initiative was mentioned in connection with new hires in brain imaging and molecular neuroscience.

At the departmental retreat in December 2004, discussions were held about the possibility of changing the name of the department in the wake of the restructuring. The executive committee, POSTCOM, was charged with examining the issue and suggesting actions. In January 2005, POSTCOM sent a formal proposal to the faculty in favor of a name change. Noting that the terms “neural” or “cognitive” could not be used because of prior use by

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328 Ibid.
other campus units, the committee included additional criteria of recognition by other institutions and departments as well as national ranking organizations. A ballot was prepared with four possibilities:

1. Department of Brain and Psychological Science
2. Department of Psychological and Brain Sciences
3. Suggestion:
4. I Do Not Support a Name Change:

By the end of the month the faculty had returned 34 votes: 12 for Brain and Psychological Sciences, 13 for Psychological and Brain Sciences, 3 had no preference, and 6 did not want a name change. The votes were tallied and converted into percentages. Steinmetz summarized to POSTcOM, reporting “82.4% of the faculty voted for a name change.”

More discussion followed about the specifics of the new name. “We recognized all of the changes taking place not only in cognitive science, but across the field of psychology,” said Shiffrin. “We wanted our name to reflect these innovations.” In the end, the original two possibilities identified by POSTcOM were left standing, and another vote was held at the end of March. There were 29 votes for Psychological and Brain Sciences and 9 for Brain and Psychological Sciences. Steinmetz informed the campus administration about the wishes of department faculty and started the ball rolling for official approval.

During the same period, POSTcOM began organizing the search for the next chairperson. In January 2005 the committee sent a ballot to all faculty containing a list of every tenured faculty, which constituted the pool of candidates. Their instructions were:

Please vote for all of the individuals you consider acceptable for the position of Chair. “Acceptable” should be interpreted as meaning that you would be comfortable with having the person as Chair. It does not mean that you are wildly enthusiastic; neither does it exclude such support. We hope that a number of individuals will meet the 75% criterion required for nomination.

Three individuals—Peter Finn, Linda Smith, Olaf Sporns—were the top vote-getters, although no one reached the 75% criterion. Smith was closest, with 69.8% of faculty nomination votes, and Finn and Sporns each received

333 Steinmetz to Psychology Faculty, “Name Change Vote,” 25 Mar 2005.
334 Chair Selection Committee (POSTcOM) to Psychology Faculty, “Ballot 1 for Selection of Next Chairperson,” 17 Jan 2005.
51.2%. Sporns declined the nomination, lauding the experience of the other two candidates and citing his own comparative professional newness. In early February, Finn and Smith prepared and delivered brief statements about their vision for the department and fielded questions. When she finished, Smith threw her hands down on the edge of the conference table and addressed the assembled faculty:

> Look-it. I don’t know I want to do this, but—I was raised in this department, I’ve benefited from this department, and I’m dedicated to this department, and if you think it is my turn, I’m ready to do it.

The faculty deliberated about the candidates, and a vote was taken. Smith was the preferred candidate. 335

As the new chair, Smith championed the discursive process that led to reconsideration of the department’s name. Being ahead of the game was something Smith had always valued as necessary and rational: “Change is coming. It’s already happening whether you want it to or not. Instead of resisting it, I think we should embrace it and see what it can do for us. There’s no point fighting against developments in the field.” 336

The department had explicitly embraced an integrative approach, hiring mature scientists and recent PhDs to work collaboratively on fundamental problems of brain and mind. With the rebuilding of the department’s structure, many felt a new name was in order.

Historically, there was precedent for a name change. The original psychological laboratory was housed in the Department of Philosophy. In 1919, the name became the Department of Psychology and Philosophy to more accurately reflect the ongoing program. By 1929, with growth in the faculty and program, Psychology achieved independent departmental status. In 2005, with disciplinary changes reflecting reciprocal relations between behavior and biology and the emerging recognition of multiple scientific approaches to psychological research, psychological and brain sciences made sense to a majority of faculty.

The name change was accompanied by a written “mission statement,” a first for the department. Seeking to convey the excitement of renewed purpose in a form that was common in the increasingly corporatized university, it stated:

335 Steinmetz to Psychology Faculty, “Chair Selection,” 5 Feb 2005; Sporns to Psychology Faculty, “Chair Selection,” 7 Feb 2005; Steinmetz to Psychology Faculty, “Chair Selection,” 7 Feb 2005; William Hetrick, in Video, “Celebrating the History of Psychological and Brain Sciences,” October 11, 2013, 4pm, Whittenberger Auditorium, Indiana Memorial Union.

336 L.B. Smith interview, June 2013.
The mission of the Department of Psychological and Brain Sciences is to lead scientific advances through state-of-the-art experimentation and theory by means of understanding how the whole system works—from molecular neuroscience to the social behavior of groups. Through the application of cutting-edge discoveries to real world problems, through the training of the next generation of scientists, and through training citizens who will apply their knowledge in many fields from medicine to industry to public service, the Department accepts the basic responsibility to translate scientific knowledge into practical solutions to problems that impact human lives.337

The familiar trope of science in service to society was expressed in the language of “translational science,” and the statement was accompanied by a brief discussion of “Visions and Values.” The new name, by suggesting a material locus (the brain) for conceptual/empirical investigation of the mind and behavior (psychology), provided additional rhetorical possibilities. The first paragraph read:

The human brain is one of the most complex systems in the universe. An advanced understanding of how the brain works and gives rise to behavior and the mind is essential to the health and well-being of humankind and to deeper insights into the very nature of ourselves and our place in the world. The scientific understanding of mind, brain, and behavior matters—for health, for economic competitiveness, for decisions about society.338

An internal “Fact Sheet” was prepared to highlight aspects of PBS, including numbers of undergraduate majors (1100), graduate students (83), and postdocs (41); external grant funds ($13M, 4th nationally among Research 1 institutions); NIH training grants (5, totaling more than $8M for most recent five-year award), and current national ranking by US News and World Report (experimental psychology—6, clinical psychology—4).339

After a hundred-year hiatus, another Indiana department faculty member, Sharon Brehm (1945-), ascended to the presidency of the American Psychological Association in 2007. Under Smith’s leadership, with the assistance of associate chair Olaf Sporns, the department increased its engagement with its many alumni. In 2007, an external advisory board was established and a media and communications coordinator was hired.340

The undergraduate curriculum was undergoing refinement in the wake of the department’s name change. By the fall of 2007, new PBS course

337 Memo, “The Department of Psychological & Brain Sciences Mission Statement,” 9/14/06.
338 Ibid.
339 Psychology and Brain Sciences Fact Sheet, n.d.
340 The coordinator position was held successively by Melissa Slemin, Heather Winne, Jennifer L. Porter, Prianka Rayamajhi, and Jenn Robison.
requirements were set. They included a new introductory course required for majors (P151: Introduction to Psychological and Brain Sciences), along with three foundational courses—in neuroscience (P346), cognitive (P335), and social/individual differences (P304)—to represent different levels or approaches to psychological questions, as well as required courses in research methods (P211) and statistics (K300). These changes more accurately reflected faculty area composition as well as providing a broad preparation for advanced study.341

In this period, three more lecturers were hired—Lisa Thomassen, Linda Hoke-Sinex, and Benjamin Motz—increasing the numbers of teaching faculty to seven. Beyond their commitment to exceptional classroom teaching, this cadre has also pursued innovative pedagogical projects, extra-curricular and outreach activities, as well as experimental new courses. Scott Thompson advised the department’s local chapter of Psi Chi (the national honor society in Psychology). Linda Hoke-Sinex and Cindy Hoffman pioneered transformative service-learning courses and assisted in the organization of the recently re-chartered Psychology Club. Lisa Thomassen has organized community outreach initiatives (e.g., Brownie Day) and taught a small course intended to jumpstart research activities for the most promising undergraduates. Both individually and as a group, the lecturers have been consistently recognized for their dynamic and dedicated teaching, in both the large lecture hall and more personalized, small-group settings.342

Cognitive neuroscience area emerges

As part of the department’s strategic hiring plan for researchers to work with the fMRI, in 2004 Sharlene Newman (1971-), Thomas James (1969-) and Karin Harman James (1967-) joined the faculty, representing specialties in language processing and problem solving, neural mechanisms of object recognition, and action and perception coupling in the developing brain, respectively. In 2005, the MRI scanner was purchased with $3.3 million of the Commitment to Excellence funds.343 The new faculty members, under

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341 E. R. Hirt, personal communication, 1 December 2013.
342 Their teaching has received much recognition and some major awards. In the 2012–2013 academic year, for instance, Irene Vlachos-Weber achieved an astounding #8 ranking as one of the highest-rated professors at the popular website RateMyProfessor.com among 1.7 million professors in the US, UK, and Canada. Linda Hoke-Sinex was given a Healthy Schools Award for her “dedication to student mental health and wellness” by the Monroe County Community School Corporation for her collaborations with three Bloomington middle schools in a service-learning course on the psychology of adolescent girls. Ben Motz was engaged in both national and campus-wide dialogues on pedagogical issues, as an appointed member of the IUB Undergraduate Strategic Planning Committee and in academic conferences around the country. E.A. Rosdeitcher, personal communication, 13 Aug 2013.
343 The machines included a 3 Siemens Tim Trio, a 256 channel EEG, and TMS. The latter two machines are used for correlating its data with fMRI data. The fMRI machine is capable of BOLD, diffusion, and anatomical imaging, making it useful for both functional and structural data analyses. The IRF also has 12- and 32- channel head coils (having a 32-channel head coil is rare at some facilities).
the supervision of Julie Stout, the inaugural director of the Image Research Facility (IRF), were involved in the initial set-up, from layout of the facility to standard operating procedures. “We were involved in everything from beginning to end,” Newman recalled. The fact that they were junior meant that they were “somewhat naïve of the obstacles,” but they each had relevant experience that was quite useful.\textsuperscript{344} In addition to these pivotal tenure-track hires, an important non-tenure-track hire was also made, that of Hu Cheng, the facility’s MR physicist, as an Associate Scientist in the department. Cheng has been with the facility throughout its development and has been a major factor in its success. The IRF was dedicated on 13 January 2006, with chair Smith and director Stout presiding.\textsuperscript{345}

The machine was a reality by the time Joshua Brown (1973–), a computational modeler, and Luiz Pessoa (1966–), a brain researcher studying cognitive-emotional interactions, joined the faculty in 2006. After the departure of inaugural director Stout in 2007, Pessoa stepped in as Interim Director for a year before senior cognitive neuroscientist Aina Puce (1960–) came in as IRF Director. Puce formulated an expansion plan for the facility that included an upgrade of the existing magnet to allow for parallel imaging methods, a high-density electroencephalography (EEG) and transcranial magnetic stimulation (TMS) laboratory and MRI-compatible EEG capability and data analysis facilities within a shared research space. The high-density EEG/TMS lab was completed in March 2009.\textsuperscript{346}

In 2007, with a state-of-the-art fMRI facility and core group of faculty utilizing neuroimaging techniques, a group of faculty members brainstormed to create a new area for research and graduate education. Tom James spearheaded these organizational efforts, in consultation with director of graduate studies Amy Holtzworth-Munroe and chair Linda Smith. Possible names under consideration were Cognitive Neuroimaging, Human Neuroscience, or Cognitive Neuroscience, which won out. The motivation for creating the Cognitive Neuroscience (CNS) area was three-fold: (1) fill the gap between the Cognitive and BBN areas of the department and between the Cognitive Science and Neuroscience programs; (2) offer graduate training in cognitive neuroscience; and (3) establish an organizational hub for connecting researchers inside and outside the department to cognitive neuroscience methods and theories. Receiving the enthusiastic endorsement by the department faculty, CNS would become the sixth area of specialization in PBS.\textsuperscript{347}

\textsuperscript{344} S. Newman interview, 12 Aug 2013.
\textsuperscript{345} IRF Review 2008-2912, page 9.
\textsuperscript{346} IRF Review 2008-2012, pp. 10-11.
\textsuperscript{347} T. James to Newman, Brown, Pessoa, K. James, Stout, Sporns, [CNS proposal], c. 5 March 2007.
Gill Center for Biomolecular Science

The department’s new name reflected a commitment to understanding the brain and behavior from molecules to social systems, and the department began to invest not only in cognitive neuroscience, but also in the direction of molecular neuroscience. As it turned out, both timely coincidence and visionary leadership substantially enhanced the growth of neuroscience in the molecular realm—just as had happened with the development of cognitive neuroscience and the Imaging Research Facility through the Commitment to Excellence initiative.

In the late 1990s, Jack Gill, entrepreneur and philanthropist, along with his wife Linda, gave funds to the College to endow chaired professorships and a center under the general topic of instruments and measurement in an effort to advance chemical research. Gill, a PhD graduate from IU’s Department of Chemistry, sought to give back to his alma mater by this endowment. After several years of unsuccessful searches, the College Dean formed a committee with representatives from Chemistry, Physics, Biology, and Psychology with the hope that a broadened search involving multiple departments could attract a distinguished candidate to campus. George Rebec, Director of the Program in Neuroscience, chaired the committee as Interim Director of the Linda and Jack Gill center for Biomolecular Science. Although Jack Gill had misgivings about the scientific nature of psychology, thinking of Freud and a lack of empirical support, a visit to the department’s neuroscience labs and interactions with Rebec and his colleagues convinced him that neuroscientific research was cutting-edge and worth supporting.

The committee identified and pursued candidates in chemistry and biology, but attracting and moving internationally distinguished faculty could be inherently difficult and the searches continued to come up empty. But when Dean Subbaswamy had the opportunity to hire eminent chemist Richard DiMarchi in 2003 from Eli Lilly as the Gill Chair in Biomolecular Sciences he did so. Around the same time, the Gill committee was successful in attracting Robert deRuyter, a well-known neuroscientist with a background in biophysics. With these successes, the Gill committee, which by now included members from the IU School of Medicine, identified neuroscientist Michael Walker (1950-2008), the chair of Brown University’s psychology department, as a potential target. He was hired in 2004 as the Linda and Jack Gill Chair of Neuroscience and Professor of Psychology. The following year he assumed the title of Director of the Gill Center for Biomolecular Science as well as the Director of the Program in Neuroscience, with substantial assistance from Rebec. In 2007, Walker recruited Kenneth Mackie (1958-) a neuroscientist with an MD degree, to fill a Gill Chair of Neuroscience. The
same year, Heather Bradshaw (1970-), a specialist in female reproductive neuroendocrinology, became an assistant professor after several years as a postdoc under Walker’s supervision.

The hiring of the Gill chairs highlighted again the physical limitations of the Psychology Building. Steinmetz, chair at the time, argued successfully that the new Multidisciplinary Science Building II, still on the drawing board, would be located immediately north of the Psychology Building and would contain extensive lab space for the Gill chairs and other neuroscience faculty members (as well as space for other disciplines). Ground was broken for the new building in 2007, with completion two years later. Much of the planning of the interior space for department neuroscientists fell to Dale Sengelaub, with help from Jerry Forshee in outfitting the laboratories and administrative support from chair Smith.

After Walker’s untimely death in early 2008, Ken Mackie assumed directorship of the Gill Center and George Rebec resumed directorship of the Program in Neuroscience. Two more Gill Chairs of Neuroscience were hired: Cary Lai (1956-) in 2008, and Andrea Hohmann (1966-) in 2010. Jonathon Crystal (1969-), hired in 2012, now directs the Program in Neuroscience after Rebec’s retirement in 2013.348

In 2011, at the urging of Mackie, faculty members in the neurosciences organized a new area in the department, Molecular to Systems Neuroscience (MSN), in early 2011. The area focused on integrative studies linking cellular, molecular, and systems neuroscience, and was designed to complement and augment existing content areas. The proposed graduate student curriculum for MSN stressed the importance of breadth (molecules to systems) as well as depth.349

The presence of the Gill chairs within PBS not only reflected the department’s commitment to understand the molecular basis of brain and behavior, it also reflected the shared intention, which was championed by Linda Smith during her term as chair, to fully embrace and integrate neuroscience across multiple levels of analysis. Leadership in the department, including chair Smith and the Policy and Steering Committee, were cognizant that at some universities, such as Duke and UCSD, neuroscience was split away from psychology. With the established tradition of pioneering research on scientific frontiers and integration across subareas, once again the purposeful decision was made to expand the frontlines of the department rather

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348 G.V. Rebec, personal communication, 23 Sept 2013.
than draw artificial boundaries or limit the interface of psychology with emerging areas.\textsuperscript{350}

**Clinical science: APCS and PCSAS**

When Richard McFall was elected as the inaugural president of the Academy of Psychological Clinical Science (APCS) in 1995, there were members representing 21 doctoral training programs. Ten years later there were 54 member programs (45 university-based doctoral training programs and nine pre-doctoral internship programs). Growing dissatisfaction with the APA’s Committee on Accreditation led, in 2006, to a special meeting by the APCS that was focused on accreditation issues. A major problem with the APA’s accreditation system, performed by its Committee on Accreditation, was its generic, one-size-fits-all approach. Designed to handle a heterogeneous assortment of several hundred doctoral training programs, internships, and post-doctoral programs, with a diverse array of conceptual models, goals, and content specialties, it relied exclusively on “input” measures (e.g., required courses, supervised practicum hours) rather than “output” or results, since they differed remarkably depending on the program. The APCS, in contrast, had a unifying sense of rigorous science-based practice and a general consensus on scientific assessment and evaluation.

Deciding to create a new, separate system of accreditation, the APCS set up the Psychological Clinical Science Accreditation System (PCSAS), which was ratified by Academy members in 2007. IU became the first university to join the PCSAS Founders’ Circle to back the new system, and the IU administration provided office space in the Psychology Building and other support. The new organization started to review cases in 2009; by the middle of 2013, 21 doctoral programs (out of over 60 member programs) had been accredited.\textsuperscript{351}

**Area developments**

Reflecting disciplinary trends toward interdisciplinary research and buoyed by ongoing departmental reorganization, new hires were often identified with two program areas. For instance, Chen Yu (1972-), who came in 2004 with a computer science doctorate, was interested in cognitive

\textsuperscript{350} J.C. Craig & W.P. Hetrick, personal communication, 24 Sept 2013.

\textsuperscript{351} In 2012, after a review by the official national governing body, the Council for Higher Education Accreditation, PCSAS was awarded “Recognition” as an accrediting agency; R.M. McFall, personal communication, 16 Sept 2013. For views on clinical science, see the Festschrift for McFall: T.A. Treat, R.R. Bootzin, & T.B. Bakers, eds., Psychological Clinical Science: Papers in Honor of Richard M. McFall (New York: Psychology Press, 2007), including McFall’s contribution, “On Psychological Clinical Science,” 363-396.
development in children, and Brian D’Onofrio (1975-), who came the year following, was aligned with clinical and developmental areas in his studies of child and adolescent psychopathology. Peter Todd (1963-), hired in 2005 as professor of cognitive science, informatics, and psychology, enjoyed affiliations with the department’s cognitive and social areas as well as with the School of Informatics. Michael Jones (1975-), hired in 2006, started the Cognitive Computing Laboratory to study language and knowledge representation in human and machines using computational and experimental methods. A core member of the cognitive area, he also served the School of Informatics and Computing as an adjunct faculty member.

Between 2007 and 2013, the number of faculty members in the cognitive neuroscience area doubled in size, with new members representing each one of the other five areas in the department. Existing faculty began to use neuroimaging methods in their research, and collaborations formed between CNS faculty and faculty in Cognitive, Clinical, and Developmental areas. Another reason for growth of the CNS-affiliated faculty was the recruitment of new faculty to the department, such as the hiring of Anne Krendl (1976-) in social neuroscience and Dan Kennedy (1980-) in developmental neuroscience in 2012. Finally, outreach through CNS and the IRF has attracted a network of researchers from outside units such as the School of Optometry and Kelley School of Business, and, within the College, the Departments of Anthropology, Criminal Justice, Linguistics, Speech and Hearing Sciences, and Telecommunications.

The PhD specialization also grew, and by 2013 there were 15 graduate students with a declared CNS specialization and many more who were minoring in CNS. Survey courses are offered in cognitive neuroscience, brain and cognition, and human neuropsychology; with more specialized courses offered in developmental cognitive neuroscience, neuropsychology of language, clinical neuroscience, decision-making and the brain, and networks in the brain; and laboratory courses offered in neuroimaging methods and statistics, brain electrical activity, and computational cognitive neuroscience methods. In addition, the IRF (and in particular Hu and Puce as active mentors) was integrated with the new Masters of Science degree program in medical physics.

CNS bridged the psychological science and brain science facets of PBS, and the IRF has fostered innovative research, enhanced collaborations, and created new training opportunities for students. While the future of the IRF is bright, it faces a few challenges moving forward: to further increase its

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352 For instance, Cognitive faculty Nosofsky, Gold, Townsend, and Pisoni (with T. James); Clinical faculty Hetrick (with Newman and Puce) and Finn (with Brown and T. James); and Developmental faculty Smith (with Puce).
user base; to expand external funding in an era of low pay lines at federal agencies; and to continue to develop administrative and leadership structures that optimize use of such a large and expensive shared facility and the collaboration of a large number of faculty.

A group of faculty from the Cognitive Science Program put together a successful NSF proposal for an Integrative Graduate Education and Research Traineeship Program (IGERT) on The Dynamics of Brain-Body-Environment Systems in Behavior and Cognition. The six-year award started in 2009. Informatics professor Randall Beer served as the Principal Investigator (PI), with three co-PI’s from PBS: Robert Goldstone, Linda Smith, and Olaf Sporns. Of the original 18 faculty involved, 14 had affiliations with PBS, 5 in Informatics, 1 in Physics, and 1 in History and Philosophy of Science (a few had more than one). In keeping with NSF IGERT program goals and building on longtime interdisciplinary collaboration within the IU Cognitive Science Program, the plan was to “bring together cognitive science faculty at Indiana University doing cutting-edge research at the neural, behavioral, and social levels using both experimental and modeling approaches to develop a unique training program in the dynamics of brain-body-environment systems.”

Approaching the mind and brain as embodied, situated, and dynamic, the proposal was oriented toward synthesis across different systems and time scales. The IGERT was heir to the department’s extensive expertise in graduate training in many areas of psychology and neuroscience as it attempted to create scientists who combined proficiency in using both experimental and theoretical tools to analyze intelligence as an emergent property of a complex dynamic system. Many hoped that these “new” scientists will “transform not only our understanding of intelligence, but also the very way cognitive science is done.”

Historically, the department’s social area faculty has been small but highly collaborative, especially with the cognitive area, but in the last decade faculty size has increased greatly with consequent expansion of interdisciplinary collaborations. In 2003, tenured Purdue professor Eliot Smith (1950-), who had interests in intergroup emotions and social cognition, was lured to Indiana, joining faculty colleagues Jim Sherman and Ed Hirt. He served as a core faculty member of the IGERT program on the Dynamics of Brain-Body-Environment Systems in Behavior and Cognition. Social network

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353 In 2013, 24 faculty were involved in the IGERT, with 18 affiliations with PBS, 5 with Informatics and Computing, 1 with Physics, and 1 with History and Philosophy of Science. [http://igert.cogs.indiana.edu/faculty.html](http://igert.cogs.indiana.edu/faculty.html) [accessed 20 Nov 13]

354 [http://igert.cogs.indiana.edu/vision.html](http://igert.cogs.indiana.edu/vision.html) [accessed 19 Nov 13]

researcher Stan Wasserman (1951-), originally hired by the IU Department of Statistics, later assumed a joint appointment in PBS to continue his work on complex social systems. Further strength in social cognition was added with the hiring of Robert “BJ” Rydell (1977-) in 2008. With the renewed emphasis on neuroscience in the department, social neuroscientist Anne Krendl was recruited in 2012, becoming a member of the cognitive neuroscience area. The same year, social psychologist Mary Murphy (1978-) became a member of the department, where she directed the Mind and Identity in Context Lab, testing theories about social identity.\textsuperscript{356}

Bennett Bertenthal (1949-), first recruited in 2007 as Dean of the College of Arts and Sciences, returned to his faculty position in 2010 and continued his research into the dynamics of brain and behavior development. In 2013, Julia Heiman (1948-), the Director of the Kinsey Institute for Research in Sex, Gender, and Reproduction since 2004 and a tenured member of the department, stepped away from her administrative responsibilities and returned to her research, based in the Sexual Psychophysiology Laboratory. In the fall of 2013, two tenure-track hires were made: Cara Lewis (1981-) in clinical science, and David Landy (1977-) in cognitive; and Richard Hullinger was added as a full-time lecturer.

\textsuperscript{356} S. J. Sherman, personal communication, 1 Nov 2013.
In June 2012 newly appointed Director of Pedagogy Ben Motz reminded the new PBS chair, Bill Hetrick, that the department would be celebrating its 125th anniversary in 2013. This anniversary, cumbersomely termed the “Quasquicentennial,” would offer a chance to highlight the research and training accomplishments of the department and provide an occasion for a reunion of the PBS community, both past and present. As chair, Hetrick understood the value of community building and enthusiastically began planning to mark the anniversary. Organizing a small group of staff members, including the department’s new science writer, Liz Rosdeitcher, to get the ball rolling, he immediately reached out to James Craig, a long-time faculty member who enjoyed widespread trust among the department community. Craig, who had served on the centennial committee 25 years before, provided valuable perspective. Urged by Motz, Hetrick also made contact with James Capshew, an IU historian of science, who authored the 1988 centennial history, about writing an update that would cover the last 25 years of the department’s history. After a few months of planning, a date was set—October 11, 2013—for the celebration. A series of events (alumni roundtables, research lectures, a banquet) were planned, as well as setting a fundraising goal of $125,000.

To further mark the anniversary, Hetrick commissioned an artwork—a seven-foot high, three-foot wide limestone representation of a human brain. Now the world’s largest anatomically accurate brain sculpture, the project was inspired by neuroscientist Jill Bolte Taylor’s “Brain Extravaganza” in which Taylor temporarily installed 22 large fiberglass brains across the city of Bloomington, one of which stood in front of the Psychology Building on Tenth Street. The new limestone brain was designed by local artist Amy Brier, in collaboration with local carver, Mike Donham and his team at Accent Limestone, and was carved using limestone mined from a local
quarry. Generous funds from Hal P. Harlan and sons Hugh P. Harlan and Doug H. Harlan, of Indianapolis, made the handsome sculpture possible. Dedicated at the Quasquicentennial, the brain stands in the courtyard to the building's main entrance.357

A full day of talks marked the Quasquicentennial. Faculty members Olaf Sporns and Linda Smith spoke about “Connections and Connectivity in Psychological and Brain Sciences.” Joe Steinmetz, Executive Dean and Vice Provost of the Ohio State University (and former department chair), Alan Kraut, the Executive Director of the Association for Psychological Science (APS), IU emeritus professor Dick McFall, and Philip Rubin, head of the White House’s neuroscience initiative, probed the “Future of Psychological and Brain Sciences” in a lively panel discussion. John Monahan (PhD 1972), distinguished professor of law, psychology, and psychiatric medicine at the University of Virginia, gave a keynote address on “Danger and Disorder: Violence, Guns and Mental Illness” in which he presented empirical evidence questioning the public perception that the mentally ill are more prone to violence. “Psychology in the Real World” was the subject of an alumni roundtable discussion.

At a session celebrating the history of psychological and brain sciences from 1888 to 2013, IU President Michael McRobbie, College Dean Larry Singell, and IU historian James Capshew were principal speakers. Although their subject was the same, each took a different tack in their brief remarks. McRobbie focused on the career of William Bryan and his efforts to build the university, and the key role of faculty and their research and teaching. “A wonderful fact to reflect upon,” Singell began by quoting Charles Dickens’s A Tale of Two Cities (1859), “That every human creature is constituted to be a profound secret and mystery to every other.” Reflecting on the department’s achievements and contributions, he noted that Indiana has long been a leader in psychology, evolving with the discipline. Capshew presented a succinct overview of the history of the department, concentrating on the department’s academic community and shared scientific culture.

Master of ceremonies and current PBS chair Bill Hetrick said a few words about the PBS department in the present day. He stressed that the department represented a “hub” discipline, such as chemistry or physics, one of seven major nodes among the sciences.358 Department procedural reform caused research decision-making to be pushed down to the faculty level, where interdisciplinary collaboration could occur without traditional area boundary disputes. For the future, the department would continue to invest

357 E. A. Rosdeitcher, personal communication, 2 December 2013.
in hub functions, emphasizing the centrality of psychological and brain science to understand mind and behavior at all levels, from the molecular to the social. He approvingly cited a 2003 department self-study and then-chair Linda Smith's insistence that the department “should own the integrative question.” Hetrick maintained that PBS:

*Must develop and leverage basic empirical methods and formal models to understand neural, developmental, social, cognitive, and pathological factors influencing animal and human behavior; span molecular to systems neuroscience; span individual to population methods.*

Such a multi-level approach creates a stimulating, productive scientific environment that is attractive to faculty and students, both graduate and undergraduate, he continued, with the overarching goal to remain ahead of the curve by fully embracing and fostering the department's breadth. “Brave hiring” in the past has led to a diverse faculty, including hires in robotics, biomedical engineering, physics, medicine, and computer science, in order to keep abreast with field-changing advances in the psychological and brain sciences and to increase connectivity among specialists. Another department goal is to create and exploit translational opportunities in fields such as healthcare, law, business, education, and industry. Hetrick brought the story back to the central role of individual faculty, who perform the research and train the next generation. “We are—together—greater than the sum of our parts,” he affirmed, and that “defines the Indiana spirit.” Concluding with a précis of the PBS “brand,” he asserted its principal features: Innovative, high-impact science; renowned and well-funded faculty; highly interdisciplinary and collaborative faculty; collegial and harmonious environment; individualized and integrative graduate training; strongly committed to undergraduate education. The department’s goal is “to protect and enhance these brands.”

After his talk, Hetrick shifted gears and used the occasion to unveil a suite of new alumni awards, designed to be presented annually. The inaugural Young Alumni Awards went to Virginia Commonwealth University professor Danielle Dick (PhD 2001) and University of California-Davis professor Katharine Graf Estes (BA 2000). Two Distinguished Alumni Awards were presented to Mary Czerwinski (PhD 1988), principal researcher at Microsoft Research, and Pete Yonkman (BA 1995), executive vice president at Cook Group. The first Lifetime Achievement Award was presented to Richard C. Atkinson (PhD 1955), president emeritus of the University of California. As Atkinson was accepting the award, Hetrick announced that the faculty decided that the award would be named in honor of its first recipient, and be

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359 Video, “Celebrating the History of Psychological and Brain Sciences,” October 11, 2013, 4pm, Whittenberger Auditorium, Indiana Memorial Union.
known henceforth as the Richard C. Atkinson Lifetime Achievement Award. With a look of pleasant surprise on his face, the visibly moved Atkinson quipped, “For a moment there I thought I was going to get off without having to make any remarks!”

In accepting the honor, Atkinson spoke of the department’s extraordinary “effectiveness in the evolution of American psychology.” He claimed a special relationship with the 125th anniversary, because he had contact with people involved at the very beginning down to the present day. Arriving on campus in 1950, Atkinson noted that it was the exact midpoint of the 1888-2013 span. He told of meeting and chatting with William Bryan several times when the emeritus president, then in his 90’s, was still taking regular walks on the campus. On one occasion, Atkinson accompanied Bryan from Science Hall (now Lindley Hall), where the department was located, back to the President’s House (since renamed Bryan House), reporting that the founder of IU psychology was “very cordial, very pleased to know that I was a psychology graduate student.”

After his graduation, Atkinson followed the fortunes and the people of the department, including fellow graduate students, and “sent quite a few undergraduates” to pursue graduate work at Indiana, adding, “They always had a very good experience.” He singled out James Townsend and Richard Shiffrin—“two of my most distinguished PhDs [at Stanford]”—as longtime Indiana faculty members. Somewhat sheepishly, Atkinson admitted that he had been involved in trying to get them to move to other universities upon occasion, but they resisted, finding IU a “very congenial place to do their research and teaching.” Launching into a description of the department’s program in the early 1950s, he said that, “Every faculty member and every graduate student was fully engaged in research, and almost all the work was experimental work.” He recalled that there were only two areas, experimental and clinical, and clinical students had to complete not only the same coursework as the experimental students but also several clinical courses and a yearlong internship. Clinical psychology graduates were in high demand, and those Indiana PhDs from the 1950s, Atkinson noted, laid the foundations of a scientific approach to clinical work at universities throughout the country. Department experimental facilities, notably laboratories in psychophysics, physiological psychology, and conditioning, were state-of-the-art, and were supported by extensive shop services and a large vivarium. Faculty and students were exposed to the latest developments in information theory, signal-detection theory, McCullough’s neural-network theory, and, of course, stimulus sampling theory. He ended by saying, “I’m very pleased to have been here.”

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360 Ibid.
The Indiana Tradition

The life of organizations and institutions depends upon many factors, not the least of which is the spirit of the people involved and the energy with which they pursue a shared agenda. Psychological and brain sciences at Indiana University is a wonderful exemplar, both in the past and for the present. The scientific study of psychology meant empirical research set within a theoretical framework, from William Lowe Bryan’s time down to today, even though the methods, concepts, and aims have evolved significantly.

At the outset of Indiana University’s postwar renaissance, President Wells suggested that each department in the university should chronicle its activities and accomplishments, “to perpetuate in some fashion the comprehensive accomplishments of their predecessors.” With typical farsightedness, he realized that the heritage of earlier years would be forgotten and lost unless steps were taken to preserve it. Department histories, he believed, were important “to keep the record continuous and green.”361 That belief was a direct consequence of his bedrock assumption that spirit was the essential element for educational achievement. Unquantifiable yet unmistakably real, a university’s spirit, co-located in a material place with geographical coordinates, resided in the hearts of those devoted to its welfare. “With the right spirit, the right atmosphere, the right ambience, nearly all things become possible in the learning process, which is the central purpose of the university,” Wells affirmed.362

Since 1888 tens of thousands of people have come into contact with the department. The bulk of them have been Indiana undergraduates who have either majored in psychology or neuroscience, or else taken a course or two. Hundreds of others have been more deeply involved as graduate students; the careers of more than 500 PhD graduates have been significantly shaped by experiences in the department. Nearly 300 psychologists have

361 Clark, Indiana University, v. 3, 89.
362 Wells, Being Lucky, 120.
been members of the faculty, and have spent portions of their lives engaged in research, teaching, clinical service, and public outreach. These summary statistics, however, only demonstrate that psychology and neuroscience has become a major academic enterprise at Indiana University. Perhaps more important is the research ethos that has developed in the department over the past 125 years. Department members have shared an overarching commitment to science, shown by the research accomplishments of both faculty and students and in the rigorous graduate training program. To an unusual extent, the clinic has remained closely integrated with the rest of the department, and has shared its commitment to empirical research.

“This department has always been really outstanding, and over its 125 years it’s reflected the whole history of American psychology,” Atkinson remarked at the Quasquicentennial. “We’re right there at the very beginning, we’re there at every key stage along the way.”

The current Indiana department grew from an investment in a single brass instrument and a determined engagement with scientific psychology in 1888 by William Bryan to a veritable cornucopia of specialized laboratories pursuing knowledge about mind, behavior, and brain, both for fundamental insights into the human condition as well as practical benefits to individuals and society.

The legacy of Bryan’s laboratory experiments, the legacy of teaching undergraduate students and training graduate students, the legacy of the clinic in scientific research as well as in public service, the legacy of research in animal behavior, sensory and perceptual systems, social psychology, learning and development, mathematical modeling, speech, cognitive processing, molecular and cognitive neuroscience—all are part of the department’s extraordinary record in the cultivation of human talent and potential, a record unmatched by few in breadth and depth anywhere in the United States—and nowhere else in length. Such is the heritage of the psychological laboratory at Indiana University.

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APPENDIX A

Faculty, 1885–2013

The following chronological list includes the tenure-track ranks of lecturer, instructor, assistant professor, associate professor, professor, and professor emeriti; it covers only the Bloomington campus. Between 1885-1988, it also includes acting, visiting, and adjunct appointments. Before 1929, when psychology became an independent department, the list includes only faculty members who were definitely identified with the psychology program; their titles often involved some combination of appointments in philosophy, pedagogy, and psychology. The list was compiled from university catalogs, Dean of Faculties files, and Department of Psychological and Brain Sciences records. For each individual, beginning and ending ranks are given along with inclusive dates of service.

1880s

- **William Lowe Bryan**, Associate Professor–Professor, 1885–1902; Lecturer & President, 1902–37; President Emeritus, 1937–55
- **Richard G. Boone**, Acting Professor, 1886–87

1890s

- **Fletcher B. Dresslar**, Instructor, 1892–93
- **Robert Hessler**, Instructor, 1893–94
- **Ernest H. Lindley**, Instructor–Professor, 1893–1917
- **John A. Bergström**, Assistant Professor–Professor, 1894–1908
- **Frank Drew**, Instructor, 1895–96
- **Elmer B. Bryan**, Assistant Professor–Associate Professor, 1897–1901; Professor, 1903–05
1900s

- **James P. Porter**, Instructor, 1900–03; Professor, 1908, 1914 (summers)
- **Melvin E. Haggerty**, Assistant Professor–Professor, 1909–16

1910s

- **William F. Book**, Professor, 1912–13, 1916–34; Professor Emeritus, 1934–40
- **John W. Todd**, Acting Professor, 1915–16
- **William H. Pyle**, Acting Professor, 1916–17
- **Cecile W. White**, Instructor, 1916–17
- **Joseph A. Williams**, Acting Professor, 1917–19
- **Thomas E. Nicholson**, Instructor–Associate Professor, 1917–33
- **Sidney W. Pressey**, Research Associate & Assistant Professor, 1917–21
- **Harry D. Kitson**, Associate Professor–Professor, 1919–25

1920s

- **J. Robert Kantor**, Assistant Professor–Professor, 1920–59; Professor Emeritus, 1959–84
- **Hannah M. Book**, Instructor–Assistant Professor, 1921–22, 1923–37
- **Herman H. Young**, Associate Professor–Professor, 1922–31
- **Gladys M. Dykes**, Instructor, 1924–25
- **Edgar L. Yeager**, Instructor–Assistant Professor, 1924–46
- **Mary H. Young**, Instructor, 1924–25; Assistant Professor, 1931–32
- **George S. Snoddy**, Professor, 1925–40
- **Sumner L. Crawley**, Assistant Professor, 1926–29
- **Winthrop N. Kellogg**, Assistant Professor–Professor, 1929–51

1930s

- **Roland C. Davis**, Acting Associate Professor–Professor, 1931–61
- **Chauncey McKinley Louttit**, Assistant Professor–Associate Professor, 1931–45
- **Edmund S. Conklin**, Professor, 1934–42
- **Merrill F. Roff**, Instructor–Assistant Professor, 1935–47
1940s

- Robert S. Daniel, Instructor, 1940–42
- James W. Layman, Assistant Professor, 1941–42
- Theodore A. Jackson, Assistant Professor, 1942–43
- Clarence J. Leuba, Visiting Professor, 1942
- Nicholas H. Pronko, Instructor, 1943–45
- L. Harold Sharp, Acting Assistant Professor, 1943–44
- Mary M. Shirley, Assistant Professor, 1943–45
- J. Bradley Reynolds, Instructor, 1944
- John H. Rohrer, Instructor, 1944
- G. Raymond Stone, Instructor, 1944–46
- Delton C. Beier, Assistant Professor–Professor, 1945–69
- Douglas G. Ellson, Assistant Professor–Professor, 1945–78; Professor Emeritus, 1978–2000
- David T. Herman, Instructor, 1945–47
- B. Frederic Skinner, Professor, 1945–48
- Sidney W. Bijou, Assistant Professor, 1946–48
- John Bucklew, Instructor, 1946
- Robert E. Dreher, Instructor, 1946–47
- Sylvia Lotman Glaser, Clinician, 1946–47
- William O. Jenkins, Instructor–Assistant Professor, 1946–48
- William S. Verplanck, Assistant Professor, 1946–50
- Irvin S. Wolf, Instructor, 1946–47
- Leo J. Postman, Assistant Professor, 1947–48
- Richard N. Berry, Assistant Professor–Professor, 1947–87; Professor Emeritus 1987–present
- Mary Jeffery Collier, Instructor–Assistant Professor, 1947–54
- E. Kuno Beller, Instructor–Assistant Professor, 1948–52
- Cletus J. Burke, Assistant Professor–Professor, 1948–63
- Harris E. Hill, Instructor, 1948–49
- Irving J. Saltzman, Assistant Professor–Professor, 1948–1989; Professor Emeritus 1989–2000
- Bertram D. Cohen, Instructor–Assistant Professor, 1949–52
- John J. Conger, Assistant Professor, 1949–52
1950s

- Otis J. Benepe, Assistant Professor, 1950–55
- Eldred F. Hardtke, Associate Professor–Professor, 1950–71
- Sumner C. Hayward, Instructor, 1950–51
- Alfred Libby, Instructor, 1950–52
- William N. Schoenfeld, Visiting Associate Professor, 1950–51
- John J. Schwarz, Instructor, 1950–51
- James A. Dinsmoor, Assistant Professor–Professor, 1951–86; Professor Emeritus, 1987–2005
- James P. Egan, Associate Professor–Professor, 1951–68
- Donald W. Lauer, Assistant Professor–Associate Professor, 1951–82
- Harry G. Yamaguchi, Assistant Professor–Professor, 1951–87; Professor Emeritus, 1987–2002
- Alexander M. Buchwald, Assistant Professor–Professor, 1952–90; Professor Emeritus 1990–present
- Arnold M. Binder, Assistant Professor–Professor, 1953–65
- Herbert Gerjuoy, Instructor, 1954–57
- Leon H. Levy, Instructor–Professor, 1954–78
- Edith C. Robinson, Clinical Associate, 1954–56
- David L. LaBerge, Instructor–Assistant Professor, 1955–58
- Margaret J. Intons-Peterson, Research Associate–Professor, 1956–1995; Professor Emerita, 1995–present
- Mymon Goldstein, Assistant Professor, 1957–60
- Harry M.B. Hurwitz, Visiting Assistant Professor, 1957–58
- Coy D. Robbins, Psychiatric Social Worker–Chief Psychiatric Social Worker, 1957–85
- Isidore Gormezano, Instructor–Associate Professor, 1958–66
- William H. James, Assistant Professor, 1958–62
- Lawrence Wheeler, Jr., Lecturer & Research Associate, 1958–60; Instructor, 1962–63
- Seymour M. Berger, Instructor–Associate Professor, 1959–69
- Russell L. DeValois, Associate Professor–Professor, 1959–68
- Marvin Levine, Instructor–Assistant Professor, 1959–65
- Roger W. Russell, Professor, 1959–67
1960s

- Frank Dalziel, Lecturer & Research Associate, 1960–62
- Donald D. Jensen, Assistant Professor–Associate Professor, 1960–69; Visiting Professor, 1976–77
- Walter Kintsch, Lecturer & Research Fellow, 1960–61
- John W.P. Ost, Lecturer–Assistant Professor, 1960–69
- Gary T. Yonemura, Lecturer–Instructor, 1960–62
- Robert B. Cairns, Assistant Professor–Professor, 1961–73
- James G. Greeno, Instructor–Professor, 1961–69
- Frank Restle, Visiting Associate Professor–Professor, 1961–80
- Joseph L. Zinnes, Assistant Professor–Associate Professor, 1961–81
- Norman Anderson, Visiting Associate Professor, 1962–63
- Vincent Dilollo, Visiting Lecturer, 1962–65
- Philip B. Gough, Assistant Professor–Associate Professor, 1962–67
- S. Lee Guth, Lecturer–Professor, 1962–96; Professor Emeritus, 1996–present
- Kenneth Heller, Assistant Professor–Professor, 1962–98; Professor Emeritus, 1998–present
- Boyd R. McCandless, Professor, 1962–66
- Richard D. Young, Instructor–Professor, 1962–88
- James Allison, Instructor–Professor, 1963–92; Professor Emeritus, 1992–present
- William N. Dember, Visiting Associate Professor, 1963
- Moshe Anisfeld, Visiting Assistant Professor, 1964
- Jerome M. Chertkoff, Assistant Professor–Professor, 1964–2000; Professor Emeritus, 2000–present
- Gabriel P. Frommer, Assistant Professor–Professor, 1964–2000; Professor Emeritus, 2000–14
- George A. Heise, Associate Professor–Professor, 1964–90; Professor Emeritus, 1990–95
- Harold R. Lindman, Assistant Professor–Associate Professor, 1964–2000; Associate Professor Emeritus, 2001–present
- Donald E. Robinson, Assistant Professor–Professor, 1964–2000, Professor Emeritus, 2000–10
• Gary E. Stollak, Assistant Professor, 1964–66
• William B. Vance, Assistant Professor, 1964–71
• Sheldon Cashdan, Assistant Professor, 1965–68
• N. John Castellan, Jr., Assistant Professor–Professor, 1965–93
• Bruce Denner, Assistant Professor–Associate Professor, 1965–71
• John J. Furedy, Visiting Lecturer, 1965–66; Visiting Assistant Professor, 1966–67
• Melvin L. Goldstein, Assistant Professor, 1965
• Alan G. Hundt, Assistant Professor, 1965–69
• Conrad G. Mueller, Professor, 1965–86; Professor Emeritus, 1986–2007
• Gordon Stanley, Visiting Lecturer, 1965–67
• Frederick Stare, Assistant Professor, 1965–69
• Mark D. Van Slyke, Lecturer, 1965
• Sheldon Cotler, Assistant Professor, 1966–71
• Terry Dolan, Visiting Assistant Professor, 1966–70
• E. Veronica Lenard, Clinical Social Worker, 1966–74
• Rodney McGinnis, Visiting Assistant Professor, 1966–67
• Richard H. Price, Assistant Professor–Associate Professor, 1966–74
• Elizabeth Botha–Antoun, Visiting Associate Professor, 1967–70
• Steven J. Sherman, Assistant Professor–Professor, 1967–present
• Robert J. Seltzer, Assistant Professor, 1968–73
• Richard M. Shiffrin, Assistant Professor – Distinguished Professor, 1968–present
• Constantine Trahiotis, Visiting Assistant Professor, 1968–70
• Robert Wolosin, Assistant Professor, 1968–75
• James C. Craig, Assistant Professor–Professor, 1969–2014; Professor Emeritus, 2014–present
• Samuel S. Komorita, Professor, 1969–74
• Barry S. Markman, Visiting Assistant Professor, 1969–72
• Raymond C. Mulry, Visiting Assistant Professor, 1969–70
• Richard J. Rose, Associate Professor–Professor, 1969–99; Professor Emeritus, 2000–present
• William D. Timberlake, Lecturer–Professor, 1970–2009; Professor Emeritus, 2010–present
1970s

- **Stephen J. Bacon**, Assistant Professor, 1970–75
- **William A. Gilkey**, Adjunct Assistant Professor, 1970–2006
- **Eliot S. Hearst**, Professor–Distinguished Professor, 1970–96; Distinguished Professor Emeritus, 1996–present
- **David Stewart**, Assistant Professor–Associate Professor, 1970–76
- **Robert Thatcher**, Visiting Assistant Professor, 1970–71
- **Lynn D. Devenport**, Visiting Assistant Professor, 1971–72
- **John W. Kelsey**, Assistant Professor, 1971–78
- **Phillip A. Mann**, Associate Professor, 1971–74
- **David B. Pisoni**, Assistant Professor–Distinguished Professor, 1971–present
- **Paula C. Stone**, Visiting Assistant Professor, 1971–72
- **Kathy Bloom**, Visiting Assistant Professor, 1972–74
- **John M. Gottman**, Assistant Professor–Associate Professor, 1972–76
- **Katherine Olsen**, Psychiatric Social Worker, 1972–73
- **John E. Bates**, Assistant Professor–Professor, 1973–present
- **Marc Lewis**, Visiting Assistant Professor, 1973–75
- **Richard E. Mayer**, Visiting Assistant Professor, 1973–75
- **Jeffrey Alberts**, Assistant Professor–Professor, 1974–present
- **Frances Cherry**, Assistant Professor, 1974–77
- **Bradley Glanville**, Visiting Lecturer, 1974–75
- **Robert W. Levenson**, Assistant Professor–Professor, 1974–87
- **Richard N. Aslin**, Assistant Professor–Professor, 1975–84
- **Mark S. Cary**, Assistant Professor, 1975–80
- **Robert Castleberry**, Visiting Assistant Professor, 1975–77
- **Richard Colker**, Visiting Assistant Professor, 1975–77
- **Christopher L. Cunningham**, Visiting Assistant Professor, 1975–76
- **Margaret P. Freese**, Assistant Professor, 1975–78
- **Alfred Strickholm**, Professor, 1975–99; Professor Emeritus, 1999–present
- **Sharon C. Wilsnack**, Adjunct Assistant Professor, 1975–78
- **Thomas F. Oltmanns**, Assistant Professor–Professor, 1976–86
- **Clark C. Presson**, Visiting Assistant Professor, 1976–79
- **David M. Schnarch**, Visiting Assistant Professor, 1976–77
• Laurence R. Barnhill, Adjunct Assistant Professor, 1977–88
• Michael R. Freese, Visiting Assistant Professor, 1977–78
• George V. Rebec, Assistant Professor–Professor, 1977–2013; Professor Emeritus, 2013–present
• Robert Remez, Visiting Lecturer–Visiting Assistant Professor, 1977–80
• Linda B. Smith, Assistant Professor – Distinguished Professor, 1977–present
• Mary K. Van Reken, Visiting Assistant Professor, 1977–78
• Laurie Chassin, Visiting Assistant Professor, 1978–79
• Russell H. Fazio, Assistant Professor–Professor, 1978–2002
• Michael R. Petersen, Lecturer–Associate Professor, 1978–85
• Kenneth A. Dodge, Assistant Professor–Associate Professor, 1979–85
• Richard M. McFall, Professor, 1979–2004; Professor Emeritus, 2004–present
• Glenn A. Miller, Adjunct Assistant Professor, 1979–80
• Cathy Spatz Widom, Associate Professor–Professor (part–time), 1979–90
• Dolf Zillmann, Professor (part–time), 1979–89

1980s

• Stephen J. Hanson, Visiting Assistant Professor, 1980–82
• Janice Juraska, Assistant Professor–Associate Professor, 1980–86
• Gary A. Lucas, Visiting Assistant Professor, 1980–82
• Rebecca A. Treiman, Assistant Professor–Associate Professor, 1980–84
• Karin Ahlm, Visiting Lecturer–Visiting Assistant Professor, 1981–90; Adjunct Assistant Professor, 1990–93
• Judith R. Johnston, Assistant Professor–Associate Professor (part–time), 1981–89
• Eileen C. Schwab, Visiting Assistant Professor, 1981–83
• Stephen L. Franzoi, Visiting Assistant Professor, 1982
• June M. Reinisch, Professor, 1982–93
• Mary M. Smyth, Visiting Assistant Professor, 1982–83
• Robert Weiskopf, Assistant Professor (part–time), 1982; Visiting Assistant Professor–Adjunct Associate Professor, 1984–2007
• Laura L. Carstensen, Assistant Professor–Associate Professor, 1983–87
• Loren Wingblade, Visiting Assistant Professor, 1983–89
• John L. Werner, Visiting Assistant Professor, 1983
• Patricia Agnew, Visiting Assistant Professor, 1984–89
• Paget H. Gross, Assistant Professor, 1984–88
• Susan S. Jones, Visiting Assistant Professor–Professor, 1984–2014; Professor Emerita, 2014–present
• Ellen Junn, Visiting Assistant Professor, 1984–86
• Robert M. Nosofsky, Assistant Professor–Distinguished Professor, 1984–present
• Paul Sweeney, Visiting Assistant Professor, 1984–86
• Jack E. Thomas, Adjunct Assistant Professor–Visiting Assistant Professor, 1984–87
• Karen C. Morgan, Visiting Assistant Professor, 1985–87
• Rickey L. Morgan, Visiting Assistant Professor, 1985–87
• Esther Thelen, Professor, 1985–2005
• James Dougan, Visiting Assistant Professor, 1986–91
• Valeri Farmer-Dougan, Visiting Assistant Professor, 1986–89; Assistant Professor (part-time), 1989–90
• Donald J. Gawley, Visiting Assistant Professor, 1986–88
• Sheila J. Walker, Assistant Professor, 1986–93
• Gary Kidd, Assistant Professor (part-time), 1986
• Janet Metcalfe, Associate Professor, 1986–89
• Dale R. Sengelaub, Assistant Professor–Professor, 1986–present
• Richard J. Viken, Visiting Assistant Professor–Professor, 1986–present
• Victoria Bedford, Visiting Assistant Professor, 1987
• Ronald E. Kettner, Assistant Professor, 1987–92
• David J. Schneider, Visiting Professor, 1987–88
• Joseph E. Steinmetz, Assistant Professor–Professor, 1987–2007
• Joseph Farley, Assistant Professor–Professor, 1988–present
• Igor Gavanski, Assistant Professor, 1988–94
• Amy Holtzworth-Munroe, Assistant Professor–Professor, 1988–present
• Alexandra L. Quittner, Assistant Professor–Associate Professor, 1988–99
• Charles S. Watson, Professor (part-time), 1988–2000
• Geoffrey Bingham, Assistant Professor–Professor, 1989–present
• Asher Cohen, Assistant Professor, 1989–93
• Peter Finn, Assistant Professor–Professor, 1989–present
• James T. Townsend, Professor, 1989–present
• Meredith West, Professor, 1989–present

1990s

• John K. Kruschke, Assistant Professor–Professor, 1990–present
• Robert Goldstone, Assistant Professor–Professor, 1991–present
• Edward R. Hirt, Assistant Professor–Professor, 1991–present
• Robert R. Peterson, Assistant Professor, 1991–96
• Preston E. Garraghty, Assistant Professor–Professor, 1992–present
• Paula M. Niedenthal, Associate Professor–Professor, 1993–99
• Thomas A. Busey, Assistant Professor–Professor, 1994–present
• Armando D.B. Machado, Assistant Professor–Associate Professor, 1994–2001
• Julie C. Stout, Assistant Professor–Professor, 1995–2009
• Kelly Sue Mix, Assistant Professor–Associate Professor, 1996–2005
• Jerome R. Busemeyer, Professor, 1997–present
• Brian O’Donnell, Assistant Professor–Professor, 1998–present
• William P. Hetrick, Assistant Professor–Professor, 1999–present
• Sarah Quellar, Assistant Professor, 1999–2005

2000s

• Nira Liberman, Assistant Professor, 2000
• Olaf Sporns, Assistant Professor–Professor, 2000–present
• Brian F. Bowdle, Assistant Professor, 2001–05
• Jason M. Gold, Assistant Professor–Associate Professor, 2001–present
• Sharon S. Brehm, Professor, 2001–12; Professor Emerita, 2012–present
• Cara L. Wellman, Assistant Professor–Professor, 2001–present
• Cynthia Hoffman, Senior Lecturer, 2003–present
• Anne L. Prieto, Assistant Professor–Associate Professor, 2003–present
• Alan Roberts, Lecturer–Senior Lecturer, 2003–present
• Eliot R. Smith, Professor, 2003–present
• Scott Thompson, Senior Lecturer, 2003–present
• Zakary L. Tormala, Assistant Professor, 2003–07
• Julia Heiman, Professor, 2004–present
• Thomas James, Assistant Professor–Associate Professor, 2004–present
• Sharlene D. Newman, Assistant Professor–Associate Professor, 2004–present
• Irene Vlachos-Weber, Lecturer–Senior Lecturer, 2004–present
• J. Michael Walker, Professor, 2004–08
• Stanley Wasserman, Professor, 2004–present
• Chen Yu, Assistant Professor–Associate Professor, 2004–present
• Brian M. D’Onofrio, Assistant Professor–Associate Professor, 2005–present
• Hu Cheng, Senior Scientist, 2005–present
• Peter Todd, Professor, 2005–present
• Joshua W. Brown, Assistant Professor–Associate Professor, 2006–present
• Michael Jones, Assistant Professor–Associate Professor, 2006–present
• Luiz Pessoa, Associate Professor, 2006–10
• Sari M. van Anders, Assistant Professor, 2007–08
• Bennett I. Bertenthal, Professor, 2007–present
• Heather B. Bradshaw, Assistant Professor–Associate Professor, 2007–present
• Karin H. James, Assistant Professor–Associate Professor, 2007–present
• Kenneth Mackie, Professor, 2007–present
• Lisa Thomassen, Lecturer–Senior Lecturer, 2007–present
• Linda Hoke-Sinex, Lecturer–Senior Lecturer, 2008–present
• Cary Lai, Professor, 2008–present
• Benjamin Motz, Lecturer–Senior Lecturer, 2008–present
• Aina Puce, Professor, 2008–present
• Robert Rydell, Assistant Professor, 2008–present
• Ben Ramsden, Senior Scientist, 2009–present

2010s
• Andrea Hohmann, Professor, 2010–present
• Cara Lewis, Clinical Assistant Professor–Assistant Professor, 2011–present
• Jonathon Crystal, Professor, 2012–present
• Dan Kennedy, Assistant Professor, 2012–present
• Anne C. Krendl, Assistant Professor, 2012–present
• Mary C. Murphy, Assistant Professor, 2012–present
• Jeffrey Huber, Professor of Practice, 2013–present
• Richard Hullinger, Lecturer, 2013–present
• David Landy, Assistant Professor, 2013–present
# Appendix B

## Department Chairs, 1885–2013

Department of Philosophy, 1885–1919;  
Department of Psychology and Philosophy, 1919–1929;  
Department of Psychology, 1929–2005;  
Department of Psychological and Brain Sciences, 2005–present

<table>
<thead>
<tr>
<th>Chair</th>
<th>Years</th>
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<tbody>
<tr>
<td>William Lowe Bryan*</td>
<td>1885–1886</td>
</tr>
<tr>
<td>Richard G. Boone*</td>
<td>1886–1887</td>
</tr>
<tr>
<td>William Lowe Bryan</td>
<td>1887–1902</td>
</tr>
<tr>
<td>William B. Elkin*</td>
<td>1891–1892</td>
</tr>
<tr>
<td>Ernest H. Lindley</td>
<td>1902–1917</td>
</tr>
<tr>
<td>William F. Book</td>
<td>1917–1934</td>
</tr>
<tr>
<td>William Lowe Bryan*</td>
<td>1933–1934</td>
</tr>
<tr>
<td>Edmund S. Conklin</td>
<td>1934–1942</td>
</tr>
<tr>
<td>J. Robert Kantor*</td>
<td>1942–1945</td>
</tr>
<tr>
<td>B. Frederic Skinner</td>
<td>1945–1948</td>
</tr>
<tr>
<td>J. Robert Kantor*</td>
<td>1947</td>
</tr>
<tr>
<td>Douglas G. Ellson</td>
<td>1948–1959</td>
</tr>
<tr>
<td>J. Robert Kantor*</td>
<td>1952–1953</td>
</tr>
<tr>
<td>Roland C. Davis*</td>
<td>1958–1959</td>
</tr>
<tr>
<td>Roger W. Russell</td>
<td>1959–1966</td>
</tr>
<tr>
<td>Harry G. Yamaguchi*</td>
<td>1965–1967</td>
</tr>
<tr>
<td>Irving J. Saltzman*</td>
<td>1967</td>
</tr>
<tr>
<td>Irving J. Saltzman</td>
<td>1969–1989</td>
</tr>
<tr>
<td>Joseph E. Steinmetz</td>
<td>1995–2005</td>
</tr>
<tr>
<td>Linda B. Smith</td>
<td>2005–2012</td>
</tr>
<tr>
<td>William P. Hetrick</td>
<td>2012–present</td>
</tr>
</tbody>
</table>

*Acting Chair*
APPENDIX C

Psychological Clinic Directors, 1922–2013

Herman H. Young 1922–1931
   Mary H. Young* 1931
Chauncey McKinley Louttit  1931–1945
   James W. Layman* 1941, 1942
   Robert S. Daniel* 1942
   Theodore A. Jackson* 1942–43
   Mary S. Shirley* 1943–45
Delton C. Beier  1945–1969
   Mary Jeffrey Collier* 1952–53
   Eldred F. Hardtke* 1954–55
   Harry G. Yamaguchi* 1957
   Alexander M. Buchwald* 1972–73
   Richard D. Young** 1978–79
   Alexander M. Buchwald** 1978–79
Richard M. McFall  1979–1985
Richard M. McFall  1991–1994
Peter R. Finn  1997–2001
Richard M. McFall  2001–2004
Richard J. Viken  2004–present

* Acting Director
**Acting Co–Director
APPENDIX D

Departmental Data, Visual Representations

Number of Full-Time Faculty
1886-2013

Psychology Course Enrollments
1948-1988

in thousands

in hundreds
To download a full version of this chart, visit:
http://psych.indiana.edu/images/PBSFacultyChart.pdf
APPENDIX E

Photographs

3. Psychology students in the laboratory, circa 1899, with various instruments, including the Hipp chronoscope. Marie Louise Boisen, John F. Bobbit, Purley C. Emmons, John P. Spooner.
4. Faculty and students of the IU Psychology Club, 1923

5. The Bryan Symposium, held to honor the 50th anniversary of the psychological laboratory, was held in 1939. (front) William Book, William Bryan, Herman Wells, Edmund Conklin (back) John McGeoch, Elmer Culler.

6. The first Conference on the Experimental Analysis of Behavior, hosted by the department in 1947, with participants on the steps of Lindley Hall. (clockwise from lower left) Dinsmoor, Klein, Ellson, Daniel, Skinner, Estes, Frick (obstructed), Anderson, Jenkins, Keller (speaking), Hill, Wyckoff, Lloyd, Hefferline, Schoenfeld, Musgrave.


10. William K. Estes in 1959, a year before he was named IUB’s first Research Professor.


12. At the department’s centennial celebration in 1988. Herman Wells, James Craig, Dorothy Saltzman, Irving Saltzman.

15. The world's largest, anatomically-correct limestone brain sculpture is unveiled by Hugh Harlan, Hal Harlan, and Doug Harlan, on October 11, 2013.

16. Linda Smith gives the opening remarks at the 125th celebration.

17. Jill Bolte Taylor, whose "Brain Extravaganza" project was the inspiration for the limestone brain sculpture, and Amy Brier, artist who designed the sculpture.
18. Bill Hetrick and President Michael McRobbie present a Young Alumni award to Danielle Dick.
19. Bill Hetrick and President Michael McRobbie present a Young Alumni award to Katharine Graf Estes.
20. Bill Hetrick presents a Distinguished Alumni award to Mary Czerwinski.
21. Bill Hetrick presents a Distinguished Alumni award to Pete Yonkman.
22. Dean Larry Singell, President Michael McRobbie, and Bill Hetrick present the inaugural Lifetime Achievement award to Richard Atkinson.
23. The 125th celebration ended with a banquet held at the newly-renovated Presidents’ Hall on October 11, 2013.

ACKNOWLEDGEMENTS

In 2012, the eagle eye of Ben Motz spotted the approach of the Quasquicentennial before anyone else, and soon Bill Hetrick lent his enthusiasm and mobilized resources to get the ball rolling for a significant commemoration of 125 years of psychological and brain sciences at Indiana University. With the aid of the department's “MarComm” (marketing committee), a date for the celebration was set—October 11, 2013—and planning commenced. I was recruited to “update” my 1988 centennial history and soon hired a trio of fine research assistants—Kate Grauvogel, Katie Van Loo, and Eunice Lee—who gathered information, obtained oral histories, and analyzed historical themes. Several PBS faculty members (current, emeriti, and former) contributed information, perspectives, and counsel as the scope of the project increased: Jack Bates, Jim Craig, Joe Farley, Peter Finn, Jason Gold, Eliot Hearst, Ken Heller, Bill Hetrick, Ed Hirt, Peggy Intons-Peterson, Ken Mackie, Dick McFall, Ben Motz, Sharlene Newman, Robert Nosofsky, David Pisoni, George Rebec, Jim Sherman, Rich Shiffrin, Eliot Smith, Linda Smith, Joe Steinmetz, and Jim Townsend. Ellen Ketterson and Linda Summers facilitated access to CISAB records. A special thanks to Lana Fish, who answered my incessant questions efficiently, and always with a smile. Several PhD alumni provided valuable historical materials and perceptions, especially Dick Atkinson and Dennis McFadden. Jim Craig, Bill Hetrick, and Donald J. Gray reviewed the entire draft manuscript, as well as Elizabeth Rosdeitcher, the department's science writer, who also provided expert copyediting. Media maven and communications coordinator Jenn Robison skillfully crafted the book's layout and design.

As the project grew to include substantial revisions as well as new material, I thought back to the mastermind who planned the centennial monograph a quarter-century earlier—Eliot Hearst. Not only did he assemble the modern foundation for the department's concern about history of psychology, he also nurtured my historical sensibility and shaped my approach to the past. This work is dedicated to him—with admiration, appreciation, and affection.

James H. Capshew, 7 June 2014

Pictured: the author with Eliot Hearst