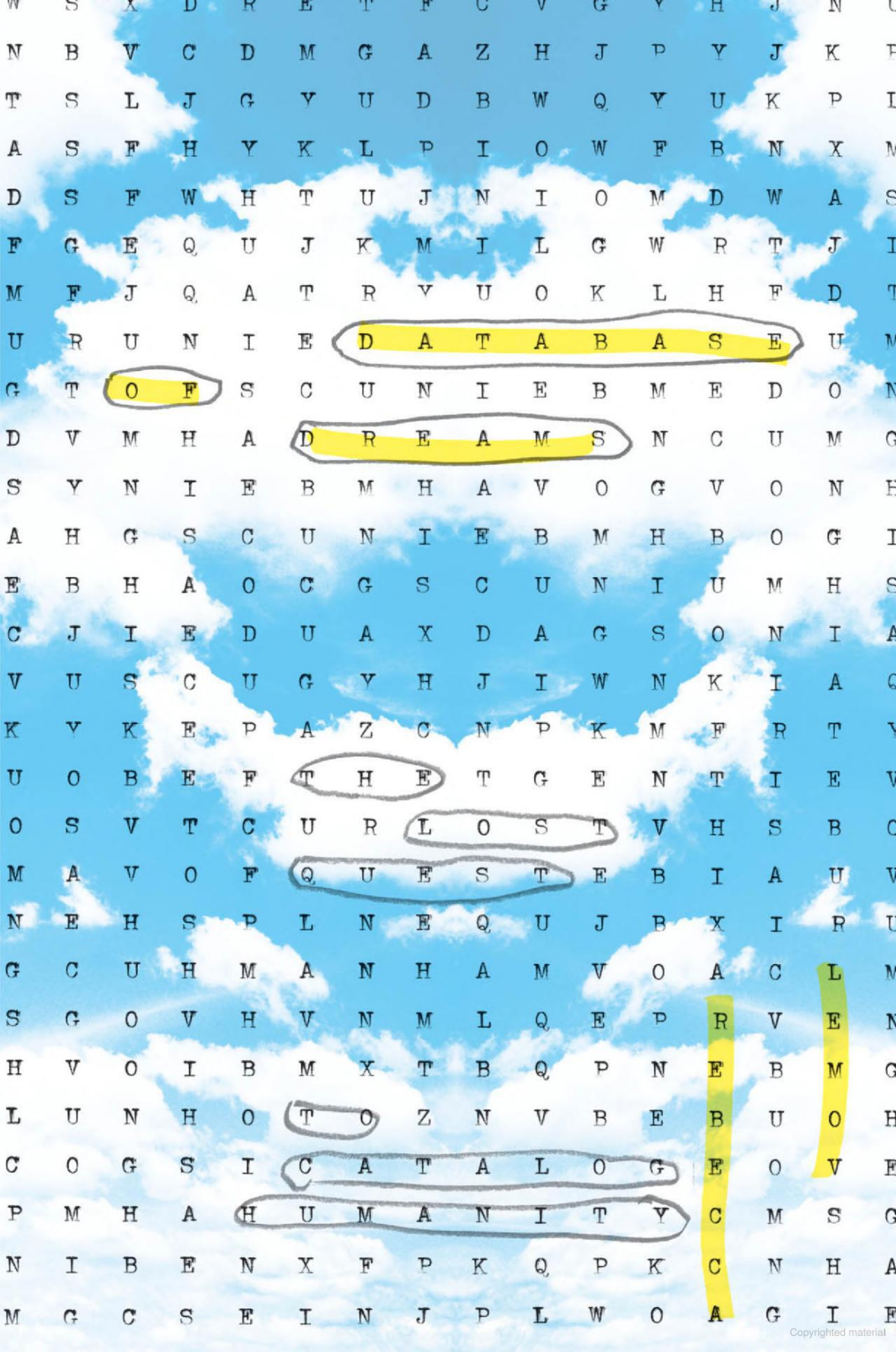

DATABASE OF DREAMS

The Lost Quest to Catalog Humanity

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Acknowledgments

More than a decade ago, when I was living in Oakland, California, I was under the impression that if one found a book lying on the street or stacked in a free pile near the sidewalk, one should probably read it because it might carry a message. Indeed, I did so when I found the book *The Captive Mind*, by Czeslaw Milosz (1953), around the end of the last century, in a red jacket, abandoned on the sidewalk. In the book, Milosz describes the fate of "human materials," and this idea stuck with me through the end of graduate school, all sorts of life events, the early years of teaching, and the eight years it's taken me to write this book. Under particular conditions and certain systems, Milosz seems to say, humans function as both materials and living beings or as subjects and objects. My first book was about the constraint of human materials. This is a book about human materials also. The archive I'm calling the "database of dreams" was at its core a collection of just such materials—sometimes also called by their collectors "human documents"—and was part of a larger movement to collect the same. In the process of telling the story of the archive housing these documents and the lives they represent, I have incurred many human debts and drawn on many friendships.

First are the people from around the world who contributed to the archive I've written about. These are the subjects whose stories and dreams I have referred to, drawn from, or retold in fragmented fashion. Most are deceased; many may not have known that their dreams or other materials were being stored in a social-scientific

project. Others worked willingly with those who came and engaged in the project or subsidiary projects. I owe a great debt to them.

I also owe a large debt to the anthropologists and psychologists who collected these materials and later collected the collections. First of all, the late Bert Kaplan, whose children, Josh and Emily, have been generous with their time and memories; whose granddaughter Hannah provided me with a preliminary bibliography of her grandfather's papers; and most particularly, his wife Hermia, who has been a wonderful friend, a gracious host, and delightful to talk to. As in the case of the subjects, most of the scientists who contributed to the data collection are now deceased (George and Louise Spindler, A. I. Hallowell, and Dorothy Eggan, to name some of the most important to this story), but I have been immeasurably aided by the recollections of colleagues who knew them or who were affiliated with these projects and whom I was privileged to interview: G. William Domhoff, Richard Randolph, Brewster Smith, and Howard Becker. I would like to acknowledge the contributors to the *Microcard Publications of Primary Records in Culture and Personality* for their generosity in adding their data sets to a collective experimental inquiry, from which I was able to draw. I would also like to thank H. David Brumble III for allowing me to quote from his communications. Robert LeVine has been especially generous with his time over the past seven years, in both Berlin and Massachusetts. In addition, archivists and microfilm experts at the University of Chicago, the Library of Congress, Harvard University, the American Philosophical Society, UCLA, UC Santa Barbara, and the National Academy of Sciences, as well as the National Archives, have been generous in helping me.

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DATABASE OF DREAMS

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Introduction

This book is about a lost history of data and a secret collection of dreams. It tells the story of a group of industrious people who piled up a "mountain of data" in the middle of the twentieth century. Not only was the size of the mountain notable—although today, of course, it is dwarfed by countless amalgamations of data—but also it was made of peculiar "stuff."

When a Hopi grandmother dreamed of white chickens in a snow-filled evergreen forest one night in 1949; when a young man from the northeast Pakistan frontier saw visions of water snakes; when four German exchange students and several patients in a Lebanese mental hospital answered psychological test questions, looking at inkblots, drawing pictures, filling out sentences—all this information entered researchers' records and merged in a single archive. Soon, materials that would almost certainly not have been kept, issuing mainly from people who did not generally write in journals (if they wrote at all), rested, preserved, in a vast bank of data. It was the most intimate of data mines, made of thousands and thousands of Rorschach test protocols, as well as sets of fleeting thoughts, random asides, irreverent inquiries and sad memories, life stories and dreams. Even today, the Library of Congress holds copies of these fragments of seemingly unremarkable human lives in condensed form. Built in 1956, the archive's materials dated back to earlier decades of the twentieth century, and its subjects'

lives often dated back even further, to the end of the nineteenth century. By the time of its last installment in 1963, it formed a unique enterprise, neither simply a large lump sum of data, nor a purpose-driven agglomeration gathered to test a particular hypothesis, but a collection of collections, a massive clearinghouse holding a global array of data sets, a sort of memory machine. Its strange combination of old and new technologies, its great size, and its (in time) greater obscurity made it a data device that no historian has examined before in published writing.

The "database of dreams" is one of the most promising and yet strangely forgotten undertakings in American social science—a dizzyingly ambitious 1950s-era project to capture people's dreams in large amounts and store them in an experimental data bank. Over sixty researchers pooled their data in one place and chose one format in which to do the pooling: the Microcard, in 1955 the latest in micropublishing technologies, capable of reducing a normal page to one-twenty-fourth of its original size and storing it on opaque cards at the attractive price of just over half a cent per page.[1] Perhaps their "nominal cost" relative to traditional publishing suggested cheapness; yet Microcards offered security against the threats of dust, dampness, war, and other forms of neglect to which the book was susceptible: "Should Microcards be damaged or destroyed by fire or flood, exact duplicates can be quickly prepared from negatives which the Microcard Corporation, upon request, keeps on file," assured their brochure.[2] Backed by such guarantees, the mass of collected materials constituted "a vast scientific resource."[3] It was believed that very small bits—data sets culled from hundreds of workers—when put together en masse and miniaturized by advanced machines made a grand vision possible. But the "database of dreams" as I argue, was not simply this innovation (of miniaturizing the massive stocks of collected materials from field stations, ethnographic sites, behavioral labs, and potentially almost any social or cultural situation). It was a combination of techniques and tools that came together over a concentrated period of time to make an odd yet strangely successful (if later obscure) device.

Its makers—especially its primary mover, psychologist Bert Kaplan, and his group, the Committee on Primary Records in Culture and Personality of the National Research Council—

envisioned the project as a "master plan" for how to save and harness data across the social and behavioral sciences (especially anthropology, sociology, and psychology), and even though only one part of the plan was carried out—namely, *Microcard Publications of Primary Records in Culture and Personality*, conceived originally as a pilot project of twenty to thirty thousand pages—their design and indeed their dream was far bigger. Participants were in fact pioneers of data, to apply a retrospective label. Nearly alone, they worried about what would become of social researchers' data sets, so carefully harvested via "Herculean efforts," so carelessly provided for.[4] In 1955, a California-based child-study expert remarked exhaustedly on the expense and effort of researchers in gathering their data on children's doll-playing and block-stacking games, as well as other behavior. Clearly it would be desirable for others to share in the fruits; yet, she declared to her interlocutor, Kaplan, "Our data has been very expensive to collect and we should make it available. . . . Our problem is that we have so darned much data."[5] Was there a standard method that would manage, save, store, hold, and circulate this excessive amount?

The device described here was the first iteration of its originators' dream of total data management in the social sciences. Data sets from all sorts of unlikely contexts, Kaplan's group agreed, were in danger of inadequate preservation, and the group hoped to make a home for such research that would allow scientists of the present and future freely to access it. To mention the fact that only today are such repositories coming into being and that researchers' up-to-the-minute debates concern these very problems is to suggest just how prescient these pioneers were sixty years ago and how poignant their project appears in retrospect. It is tempting to place the Kaplan group's effort in the tradition of literary works such as William Wordsworth's 1850 *Prelude*, intended to be mere prefatory material for something much longer and greater but which ended up instead serving as the work itself. Likewise, despite its enormous prescience, the pilot project, *Microcard Publications of Primary Records in Culture and Personality*, became its own endpoint.

The project began with little fanfare in the summer of 1947 as foot-wearying research for a doctoral dissertation. Bert Kaplan,

then a Harvard graduate student, set out from Cambridge to the New Mexico desert to study four American Indian tribes living near the small farming town of Ramah, where a sign welcomed visitors to "The Pinto Bean Capital of the World." Kaplan was young, tall, shy, and gangly, giving some people the impression that he was physically unrelated to his own body. When he was in high school, due to his height, he was invited out of the blue to try out for the football team, for which he played affably during the year. When, at the start of the next year, a new coach "somehow did not realize that I was on the team" (as he recalled decades later), Kaplan proved equally unflappable and "just let the matter drop."[6] Even at an early age, Kaplan had a gift for getting along with people and a team-spirit generosity.

When he arrived at Ramah, he had just returned from World War II service as an army psychologist. With only a college degree in psychology from Brooklyn College—though with rave reviews from his mentor, the humanist psychologist Abraham Maslow—his army orders at first had him on a crew maintaining B-26's "despite [my] being pretty uncertain what a wrench was." His stint in the mechanics squadron was cut short with a dispatch to officer candidate school. After a brief time as supply officer, he was "somehow picked out by some equipment of the computer to be a psychologist" and shipped off to Okinawa and other places in the far reaches of the Pacific Front to treat soldiers suffering from traumatic neurosis, a malady now known as Post-Traumatic Stress Disorder.[7] Kaplan loved being an army psychologist. Given his own ward, he tried out psychological testing; hypnotic trance induction; the occasional dose of sodium amytal, a bitter, barbiturate-like powder once believed to function as a truth serum (administered by Kaplan's colleague, who was a psychiatrist); and psychoanalytic talk therapy to get emotionally distraught soldiers to unburden themselves. Kaplan noticed that having the chance to tell their stories helped the men he was treating more than almost any other approach. He grew more interested in storytelling and psychological testing and in the vagaries of personality differences, different responses to the same situation. He also seemed to enjoy the multiplying of methods rather than fastening on a favorite one, an eclecticism that would prove useful later.

With some finagling on his part, Kaplan received an offer, while he was still at the Pacific front, to join Harvard's PhD program in social relations. As his wife Hermia recalled it, Harvard admitted him somewhat half-heartedly, claiming (in her words), "We don't ordinarily take people with your academic background, but because there's a war on, we'll accept you."[8] This reluctant invitation perhaps added to Kaplan's initial lack of confidence in graduate school. The son of a Tammany Hall "captain" of East European Jewish immigrant stock, he was not at all "to the manner born," much less to the manor, as were many at Harvard. Nonetheless, when there, Kaplan embarked on ambitious research using the most up-to-date methods. He and Hermia set off for New Mexico in the summer of his second year under the wing of Clyde Kluckhohn, a powerful professor at Harvard.

Their destination in New Mexico was a rich area for social scientific inquiry due to the fact that at least four different subgroups—Zuni, Navaho, Hopi, and Spanish-American—lived side by side within a twenty-five-mile contained area. Instead of the usual anthropology-style fieldwork, Kaplan went to Ramah to do just one thing: give tests. To be precise, he planned to give several kinds of highly exacting projective psychological tests and then gather a mini-encyclopedia of results in an unprecedentedly short timespan. Although he focused on veterans of the recent war—one of his colleagues was writing about American Indian vets, and Kaplan intended, by sharing his data, to contribute to this study—he also wanted to gather full sets of test results encompassing whole villages. What kind of tests? Kaplan had four in hand: the Rorschach inkblot test; the Thematic Apperception Test (TAT), a picture-based test he administered in two standard varieties; and a sentence-completion test of thirty-six questions.

Kaplan went on to write his dissertation on the four cultures he had tested but increasingly found his attention drawn to the matter of data collection and storage—a concern that today might be referred to as the problem of the "perishable format."[9] It worried him that many researchers generated significant amounts of data—new, never-before-seen kinds of data detailing the inner lives of subjects (peasants, primitives, poor people) who were otherwise reluctant to tell their stories, at least to strangers and scientists—but few took

pains over the fate of such data. Kaplan himself had spent arduous hours giving tests and collecting results; his friends gathered dream materials and life histories with zeal. In the manner of a reverse milkman, one anthropologist in Tanzania was known to go around the village each morning before breakfast to collect villagers' dreams before they went on with their day and forgot them. Other colleagues stacked up long hours observing nursery school children play with blocks or primates groom each other and coding the component "behavioral items" in regularized field notes. Some came across incidental "found" data—the 500-page memoir of a female heroin addict the pioneering Chicago School sociologist Howard Becker recorded in the late 1940s, for example. Others used their classrooms to generate data—not least 453 dreams of Harvard undergraduates. These last were just two of the data sets Kaplan's committee targeted (although never realized) for its most ambitious collection. Kaplan's insight was to see that the future of these reams of information was not provided for. Unless researchers planned, their data, no matter how valuable and how meticulously rounded up, might disappear. Over the next few years, he thought up a plan to secure potentially all psychological, anthropological, and sociological data through the highest-tech methods he could find.

Cobbling together old and new technologies, a select group of American social scientists at mid-twentieth century, led by Kaplan and a committee of data-driven innovators, built what was in effect a machine to capture the contents and feel of other people's experiences. Unlike European and American psychoanalysts before them, they did not seek the deep meaning of a dream or track it through the thickets of the unconscious. They treated dreams and memories as "stuff," as material reality. They wanted to gather records of exactly what fades away and in effect prevent it from doing so.

Quantities of dreams typed out as records and miniaturized in micropublished format to serve the needs of future scientists was a new concept, something even Freud had not thought to do. It was also almost entirely new in history. Certainly, dream catalogs existed (for example, the sixteenth-century *Chinese Encyclopedia of Dreams*), and others had attempted to capture dreams in significant

amounts (Jesuits collected Iroquois dreams in the seventeenth century, Jungians collected all kinds of dreams in the twentieth, and in 1963 the British writer J. B. Priestley collected evidence of precognitions, much of it stored in the dreams he urged television viewers of his popular broadcasts to mail in to him), but these were almost always gathered with an eye to supporting a particular theory or cosmology, from the "wish theory" of the Iroquois to the nature of the unconscious to speculations about the non-chronological nature of time. In each case, the dreams gathered up were said to be particularly *meaningful*, auguries, spectacular. At the turn of the twentieth century, psychiatric hospitals such as Massachusetts General and Bellevue collected dreams as part of an attempt to record more fully than ever before the psychic life of patients.[10] What was different in this later collection, rivaled perhaps only by the Mass Observation project in Britain, was the goal of collecting ordinary, everyday, unremarkable dreams from ordinary, everyday, unremarkable people—and these from cultures around the world. Neither medical patients nor seers, these subjects offered access to the often mundane and sometimes strange variety their offhand remarks and life stories described. Here was a database that held no age-old techniques or exotic rites but was made of passing thoughts, unremarkable dreams, and people's unknown lives. Some told dreams of the ordinary, such as grocery lists, and others told dreams of nighttime assignations with deities and of special powers gained. The dreams were not only "dreams themselves" but symbolic of the types of materials researchers would target—the dream-like, the penetrating, the possessed and the dispossessed. In the way that dreams happen every night and some days, and yet are often fantastic, this was about collecting the worldly and the otherworldly where they met.

How did investigators in 1947 begin to collect the uncollectable? How did they isolate the "intimate laws" of the "irresponsible incense of the imagination" (to borrow from Jorge Luís Borges)? How, at the same time, did they expand the scope of totality, even as the project of total knowledge-gathering bore, as we will see, a built-in tendency toward alienation? As we will see, in the gathering up of subjective materials, one can glimpse a "haunted" quality

of the pursuit of objectivity: in marching on, collecting more and more, the specter of inevitable loss also asserts itself. This process casts a spell under which we continue to operate, in our database-aided search for an ever more total accounting. One can ask: What is lost and gained in the process of trying to recover something akin to Borges's "irrecoverable colors of the sky"?[11]

This archive was by 2005 or 2010 unexpectedly hard to locate in physical form, even in libraries where online listings claimed to hold a copy of it. Footnotes indicated its existence. Card catalogs assured its presence in scattered university microfilm rooms and in the Library of Congress. Yet very often I arrived only to find it either not available that day—temporarily lost, hard to find, misfiled, head scratchingly missing, or simply not readable due to the scarcity of capable machines. "Not much demand for these records!" a librarian at the Library of Congress remarked once when I requested it. Initially the archival assistant was unable to find it after considerable rummaging in the stacks. Such elusiveness emphasized a key finding of my research that would emerge over time: these data, and the technology that sustained and transformed them, had entered a curious state of limbo, one into which unfavored or once-but-no-longer-favored data often fall. This state has a dynamics of its own. It is not stable at all. "Latent life," a phrase the Catholic priest and scientist Basile Luyet used in the 1940s to describe a biological being that is neither fully alive nor absolutely dead, can apply to paperwork as well. Preserved in hard-to-access paper file folders or, later, in a Microcard archive—or, even later, on 3.5″ floppy disks—latent files can enter an in-between state, neither lost nor found. Such states of suspended animation become more and more common, as seen in such phenomena as "atomic trash," "zombie satellites," and scholarly anxieties of the sort Pacific anthropologist Roderick Ewens recently expressed: "I'm sure I'm not the only person that still has information locked away on the odd disk in a bottom drawer, probably never to be accessed again."[12]

Pushing at my thoughts while pursuing this archive was an ever more persistent fact: the nature of memory itself was changing. Joan Didion and John Gregory Dunne used to save in a small box the quixotic sentences their daughter spoke when she was

learning to talk, odd scraps oddly piled in, the box sitting on Dunne's desk. Didion told the story from the point of view of her grief at the death of her husband and the soon-to-be-fatal illness of her daughter. Everything passes. And where was the box? Those who had filled it were no longer there, and the details of what they had said were also fragile. A change was taking place in terms of what was done with the scraps of paper of the world. Who today does not experience such change? "Small details that were once captured in dim memories or fading scraps of paper are now preserved forever in the digital minds of computers, in vast databases with fertile fields of personal data."[13] The question became: What about that forever?

The "database of dreams" was a pioneering exercise in the forever storage of intimate details. Today there are many more such databases, powered by machines that are far more powerful than the Rube Goldberg–like invention of these years. Yet the fate of what this earlier effort stored is a parable for our time. Its very existence, the parts that turned out to be fragile and the parts that ended up enduring, equally raise important questions about what it means to be human in an increasingly data-based world. That the experimental hard-won data it held got lost in many ways—though never entirely—is a symptom of our own future buried in the present. And yet this database holds thousands of pages of irreplaceable "raw" data from societies spread over the globe, data that had been gathered with care over previous decades of fieldwork, testing, and subject interviews. Somehow, this great project—great in ambition and great in scale—has disappeared almost entirely from the historical record and also from the memory of many of its disciplinary inheritors.[14] This near expunging is itself a historical phenomenon worth considering.

On one level this book is about the lists and charts; tests and standardized sheets; opaque cards, reports, and dissertations; public policy statements and census-style paperwork—what all together have been called "little tools of knowledge"—that make up and made possible this one-of-a-kind archive. Such "little tools" might seem to be trifles. Does it really matter what kinds of notebooks Dorothy Eggan's Hopi subjects used to write down their dreams?

Does it make a difference that Kaplan chose the Microcard rather than a normal filing cabinet or the preexisting Human Relations Area Files (HRAF) taxonomic system—or the dreaded microfiche, for that matter—as his vehicle? How are life histories taken down? By means of which tools and which rules? What happens when people stutter, burp, ask for more tea or more money, or refuse to go on? And can the whole technique count, itself, as a new technology? Can it do what scientists such as Robert Park asked of them—to reveal "what goes on behind the faces of men"? In total, the book forms a prosopography, or a portrait of a group of actors whose collective history can begin to "construct an intelligible picture of society and politics."[15] It is also, in effect, a prosopography of technologies, including tools both little and big.

What made such a collection possible in the middle of the twentieth century? How did researchers suppose they could render the elusiveness of dreams and the richness of inner psychological states as a string of micropublished numbers, images, lists, records, narratives, and charts—in short, as data? Was there nothing so remote or odd that it could not be transformed in this way? What is and what is not, what should and should not be, database-able? This book answers these questions by following the scientific logic and tool-based action that led some researchers to target ever more elusive and difficult-to-work-with materials for their files. Through the efforts of a cast of behavioral researchers working in the 1940s, 1950s, and early 1960s, a strange hybrid device developed that could take old-fashioned materials documenting old and (purportedly) disappearing ways of life, render them as data via the latest psychological and sociological techniques, and cache them in futuristic micro-reduction cards so that they could be read on a network of advanced gadgets around the world. The idea, and eventually the reality, was that any researcher could stand in New York or Basel and "hack into" assorted dreams of people far away—a Paraguayan tribesman or a Pathan villager.

The effort involved "suites of technologies"—combined techniques, new and old.[16] In order to understand how Kaplan's data bank worked and later didn't work, then, the chapters below follow the "careers" of a succession of techniques, technologies, and tests as they emerged and eventually, through the assiduous work of Bert

Kaplan, merged. Ultimately they formed a creole and compound new thing in the world of data storage. What lies ahead, then, are accounts including the birth of and fashion for projection tests (for example, the Rorschach), the emergence of miniaturizing photographic techniques, the life of the life-history method, the proceedings of dream-extraction forays, the varieties of fieldwork approaches, and the way interpersonal encounters could be leveraged as data production. All these would merge to make the Kaplan collection possible.

For the purposes of this book, I call this invention—really a set of interlocking inventions and borrowings—the "database of dreams," bearing in mind that its official and best-known name was the significantly less poetic *Microcard Publications of Primary Records in Culture and Personality*. Its primary home was the seemingly unromantic Primary Records Committee, whose members inhabited a network of departments, hotel meeting spots, field sites, and encampments all over the world. Also keep in mind that the topic here is not simply the *built* archive but the unbuilt one. My claim is that it was a system of interlocking printing technologies, reading devices, psychological techniques, fieldwork methods, "little tools" of knowledge, and human subjects and objects, all of which worked together to produce an untoward capability, a machine for making the invisible visible and the intangible tangible—at least for a short time in the middle of the last century. This book thus shows how technology can embed itself in subjectivity and how subjectivity shapes and is shaped by technology.

What would only become recognized as a full-fledged database in the 1980s has of course retrospectively shaped conceptions of what even a primitive "bank of data" looks like.[17] Here I want to expand the possibilities of the past and of construing the history of media and information. To be considered in the lineage of what makes a database, then, a data-storage device need not toe the line of the standard histories in terms of either espousing digital over analog or symbolizing success over failure. Thus I use the phrase "database of dreams" figuratively to evoke the larger project as well its individual components, including especially the Microcard archive that is the subject of intensive scrutiny in the pages that

follow. I do not mean to claim that it was an electronic dual-processing database of the sort that became available in "primitive form" in 1964, fully eight years after the Primary Records Committee began its work, nor that it was something like a relational database of the 1970s or an object-oriented, object-relational database of the 1990s.[18] This is a story of succession. The "database of dreams," in contrast, is a way of tracing a different genealogy to pursue the question of how data and data storage came to be central to social life and personal accounting. It asks about the place of dreams within data. How has this apparently dream-free substrate called "data" with its clouds and servers, its banks and bases, come to be the site of memory—decisions about what is kept and how—as well as worries over what is lost over the course of a life? As we will see, the banking of data in a haphazard and improvisational form preceded and sheds light on such apparently uniform and penetrating technologies.

Most of this sum total of now forgotten personal data was drawn from people in the Philippines, the South Seas of the Pacific, the Great Basin of the United States (as well as many additional American Indian reservations), and a range of other places once seen as "far away." The data came frequently from colonial possessions that were in the process of being handed off or reconstituted or gaining independence, places where anthropologists had worked in tandem with or in opposition to, or sometimes merely alongside, colonial administrators and settler areas. One could find out, for example, what changes Menominee Indians living in the Wisconsin woods in 1947 thought the next ten years would bring to their lives on and off the reservation, as in anthropologist Louise Spindler's data set, "61 Rorschachs and 15 Expressive Autobiographic Interviews of Menomini Indian Women." What did one woman daydream about during the long afternoon hours at home when her husband was logging? How did she score on an array of psychological tests? Another subject from this same data set, known as Case 1 in the records, reflected on a baby she had lost six months before: "Old men used to understand babies. Now, nobody understands their language. That baby used to talk all the time." As in this example, the data contained a record, at times, of people

experiencing a deep loss and profound change—of culture, or lifeways, or within their own families.[19] Fieldworkers in these places focused on groups seen as non-literate (though some members had been taught to write in colonial schools while others had never even seen a photograph or printed page before).

Despite the fact that the data collection was global in scope, a large portion—approximately one-half to two-thirds, depending on how it is counted—came from American Indian tribal groups, who appealed to researchers as both distant (because they symbolized age-old traditions) and nearby (because a researcher could visit them in a two- or three-day drive from Chicago or New York). Likely, too, their inner data were necessary in the second birth of an American national consciousness in the postwar years. American Indians' experiences of loss, fragmentation, persistence, endurance, strength, assertiveness, and suffering seemed to promise advanced insights into the conditions of modern life at a moment of acute cultural crisis due to lack of infrastructure, environmental depredation, shifts in political policies, and the crosswinds of great global battles such as World War II. Within anthropology, there was a long tradition of treating the American southwest as a laboratory. Here the decades-old laboratory became a site to focus on a new kind of intensively collected data, called subjective materials, and new cutting-edge ways of storing them.

One of the themes of the book is the imperfections and ambiguities that arise in the search to find and extract secret information, in ever more various kinds, from various kinds of people. My wish is to explore the intersecting effects of technology and subjectivity in history. Often, too, in the history of the human sciences, the role of technological experimentation and a tool-centered methodological spirit has received scant attention, and although this is changing in some recent work, I have tried to bring these two concerns together in a new way.[20] In locating and to some extent resurrecting data that have long been neglected and out of sight (though never hidden), I have been careful to keep the data donors' names anonymized or coded, to bypass overly intimate revelations—because after all the book is not about these but rather the technologies of access—and to respect both of the parties involved in this once celebrated and later forgotten research.

Here one can find the most fleeting thoughts and exorbitant night- and daytime visions. "Human documents," they were called. Their story is also the story of what "humanness" came to mean in an age of rapid change in technological and social conditions. Call it a database of consciousness, a repository of humankind's most elusive ways of being human, or an anthropological archive; through it a veritable sluice of social knowledge flowed from seemingly unlikely encounters. This book is about those encounters—between scientists and subjects, between knowledge and machines—as well as the data that flowed out of them and the ways these were preserved and not preserved.

CHAPTER ONE

Paperwork of the Inner Self

A LITTLE-KNOWN turning point in the prosecution of World War II war crimes occurred in 1945 at Nuremberg. Sitting on his prison cot was Hermann Göring, recently captured Reichsfeldmarschall, founder of the Sturmabteilung (SA), creator of the first concentration camps, and a man who, not many weeks before, had been poised next in command to Adolf Hitler. He was taking the Rorschach test. Examining the inkblot on Card III, he displayed emotions ranging from delight to anger to amusement in a few seconds. At first he was sure that he saw the black blots as two charming cartoon figures in high collars, "but the red spots . . . I can't figure that out." He got impatient and snapped his forefinger at the three red spots on the card, as though to brush them off, the test giver noted. Then Göring continued, "What these things are . . . damned if I know. . . . They are debating over something . . . maybe two doctors arguing over the inner organs of a man." He laughed. When another American psychiatrist retested him some weeks later, Göring exclaimed, "Oh those crazy cards again."[1]

The great crime of National Socialism had just played out, and the victors wanted to know in a deeper way what it was they had been fighting. Was there something one could call a "Nazi mind"? Paper records of the test protocols were equivalent to lab results. As Göring's first Rorschach test administrator, the American psychiatrist Douglas M. Kelley, remarked, "I had at Nuremberg the

purest known Nazi-virus cultures—twenty-two clay flasks as it were—to study, and with but a short time in which to work."[2] The Rorschach test and other such tests, experts generally agreed, were the most direct way for them to go to work quickly and efficiently at the most profound level. The fact that such tests could not be used in criminal prosecution (at least not yet) makes the point even more strongly. During this period they were for research and therapy only.

It is not clear what, if anything, Göring's response to Card III or the other cards revealed. Some argued the test was invalidated by the unorthodox conditions under which it was given. Some claimed a distinct pathology revealed itself, not so much in the content—the argumentative dissection Göring saw, for example—but in his own irritation at finding red blots among the black ones, a response to color that could indicate a dangerous irascibility and an uncontrolled emotional life. In the case of Göring, a certain emotional lability might have already been clear from his on-again off-again morphine addiction and his wont to wear outlandish fur-and-feathered costumes. Others held there was a lack of pathology at all in the evidence of the test—at least no pathology sufficient to explain the actions of a man capable of such heinous crimes.[3]

What is beyond dispute is that Göring's Rorschach records remained in a repository for future study, along with those of twenty-one other Nuremberg detainees, soon joined by the records of 209 largely Danish Nazi collaborators from the Copenhagen War Crimes Trial. Most of the Nuremberg accused also submitted to the Thematic Apperception Test (TAT) and the Weschler-Bellevue Intelligence Test before they, or at least a goodly proportion of them, underwent hanging. These "Nazi protocols" became memoria for future generations, and, the question of their scientific usefulness aside for the moment, they functioned a bit like relics (or the opposite), fetishes from a soon-to-be execution.

In keeping with this status of prospective reliquary, the paper copies of the Nazi test results ended up, within a year of their subjects' sentences, as rare objects themselves. Initially, through 1946 and 1947, they circulated freely among the United States' most skilled Rorschach interpreters, ten of whom received invitations to attempt an ultimate diagnostic judgment, but the project was soon

shelved, copies were misfiled and mislaid, and this collaborative evaluation never came to fruition. After an initial rush to publish by the two on-site psychologists, both of whom admitted to having reached only provisional conclusions and expressed the hope that future studies would be more objective, silence held sway.[4] For about three decades, the Nazi Rorschachs all but disappeared. One copy sat in the Chicago files of a prominent Rorschach expert (Samuel Beck, who received them direct from Kelley) while at least one other copy remained with Molly Harrower (originally in charge of the expert evaluation program). It was as if the paperwork were lost because the materials ceased for so long to circulate, and the tests became the stuff of legend and rumor. This temporary scarcity or difficulty of locating them in physical form was a kind of latency.[5] On the first page of the first publication to come out of Nuremberg, Kelley had spoken repeatedly of "securing the material," "securing the data," and (yet again) "material secured," and his words conveyed reassuring finality.[6] However, the paperwork's subsequent travails indicated that simply securing the tests was not a final act, as many had presumed, but that the protocols had an unfolding fate, moving in and out of availability.

After almost thirty years of latency, the protocols emerged once more, and several studies took up the beckoning hope that once and for all a final say could be had. Two camps emerged. One set of researchers found significant similarities among the Nazi results, enough to generalize that their psyches indeed indicated pathological development. Among other things, the unusually high number of botanical images (for example, dahlias, daffodils, roses) found in the Nazi records were said to link them to an undeveloped sense of human relatedness.[7] Another set found no regularities at all and concluded—as was their preexisting view, uncoincidentally—that it was the social, cultural, and political context that had forged and shaped the behavior of these otherwise quite typical men. No toxic environment, no Nazis.[8] Perhaps most confidently, in the 1980s a third wave of interpretation arose with the advent of two computer programs capable of automatically assessing protocols. Not only these programs, but also the accretion, in the intervening years, of a large protocol pool from schizophrenics, outpatients, and "normals," now allowed a more thoroughly comparative evaluation of the Nazi

records to be made. Running the eight most "serious" Nazi records (that is, serious Nazis, not serious responses) through the John Exner and Eric Zillmer computer assessment programs shed new light on old hypotheses. The eight emerged with a mean score of 3.37 on the Rorschach Schizophrenia Index (SCZI)—schizophrenia likelihood—but this had little meaning because the scores were so widely dispersed. Only one qualified as depressed: Hans Frank, who achieved a score of 3 on the Rorschach Depression Index (DEPI) and who was one of the few to express a sense of responsibility for his actions, stating at the trial that "a thousand years will pass and this guilt of Germany will not be erased." Although a few seemed possibly suicidal, this interestingly did not include Göring, who was shortly to commit suicide but whose suicide constellation (S-CON) was only 4 of a possible 11 factors. Taking into further account the Reichsfeldmarschall's high affectivity score (AFR) and ego strength (EGO), the computer program described him as a "person who is very attracted to being around emotional stimuli," in addition to engaging in a narcissistic overvaluation of the self, observations seemingly if retrospectively buttressed by his declaring before the trial started that he would have the courage to confine his defense to three simple words: "Kiss my ass."[9] The basic finding of these computer-assisted analyses was that there was no common finding: no common denominator emerged, but rather a lot of variety.

So it was that in addition to the eleven published volumes of documents that filled six freight cars when originally shipped to Nuremberg and the twenty volumes of trial proceedings, there issued this unstable repository of the war criminals' inner lives, rendered as paper protocols. By following these documents, discovering their fates, and describing the subsequent conditions under which these tests flourished even as others failed, one can also begin to discern from what their unique if elusive power derived. This retrospectively odd power must be emphasized in telling the story of what I am calling the "database of dreams," for that archive could not have come into existence without these tests—or rather, not so much the tests themselves but the claims that were made about the tests' penetrating powers and the need to preserve their resulting data against loss, misplacement, and unfashionability.

In the end, the fifty-two-year-old Göring ate cyanide tablets

less than an hour before his scheduled execution. He had developed rapport with psychiatrist Kelley, then in his mid thirties, and asked him to look after his family following his death. (Some have suspected Kelley passed Göring the pills, though the source has never been found, but Kelley by this time had returned to California.) In a sad afterlife of this relationship, Kelley, subject to mood swings and increasing instability after Nuremberg, committed suicide in front of his three children and wife on New Year's Day 1958 by swallowing cyanide powder, which he apparently carried around with him habitually in his pocket. A note from Göring's coprisoner, propagandist Alfred Rosenberg, was in his papers: "I regret your departure from Nuremberg, as do the comrades confined with me. I thank you for your human behavior and also for your attempt to understand our reasons." Ever since, heavy-handed journalists have invoked a heart-of-darkness thesis for what happened. Kelley had looked pure evil in the face, the thesis goes, and was forever changed. ("Had he carried back from those twenty-two cells something darker than psychiatric reports?" asked one reporter. "Was there a part of him that was hollowed out by living inside the minds of men who killed so easily?")[10] Yet twice-baked rhetoric aside, it is tempting to leave open for questioning the elements contributing to Kelley's death: How much does change in the process of trying to measure those things that exceed, elude, or defy measurement, things at the very edge of unmeasurability? How might one be changed?

The 1940s, '50s, and '60s were the heyday of the projective tests' powers in the United States, and it is no coincidence that their administration to the world's most notorious accused war criminals bookended the period. In 1962, an Israeli psychologist administered the Rorschach to Adolf Eichmann before his trial in Jerusalem, these efforts qualifying him as one among the parade of "soul experts" whom Hannah Arendt derided in a *New Yorker* account and later in *Eichmann in Jerusalem* for finding, supposedly, nothing amiss with Eichmann's "perfectly normal" psyche.[11] The point here is not to reevaluate these results, nor to comment on the evaluations of others, nor even to mention the latter-day carping at Arendt's "very ill-conceived" claims about what they said, but to mark simply the

fact of their existence as a resource on file.[12] That the highest enemies of state underwent such psychological tests indicates, if nothing else, the apex of influence to which the tests had risen, and their collected results were akin to a national resource on the nature of human nature. It is hard to imagine the equivalent today. If Osama Bin Laden had been captured, would a prime order of business have been to give him the Rorschach or TAT tests? It is easier to envision him submitting to an fMRI of his brain function. Between the testing of Hermann Göring in 1945 and Adolf Eichmann in 1962, however, psychoanalysis flourished, and the projective test was king of technologies for seeing into the inner self.

With the addition of Eichmann's protocol, the Nazi Rorschachs, although intended to be a secure data set, continued to slip in and out of circulation and high-security status, just as the diagnoses they occasioned ranged up and down scales of pathology and banality. Anything but stable, never easily located, and even today not definitively interpreted—despite dispiritingly regular claims of their having arrived at last at a "final undisputed diagnosis"[13]—the tests, as paper, raise questions relevant to the problem of data, and specifically the data collection that is my subject here—the "database of dreams"—lending insight into how its techniques grew and spread and why it was needed.

The Rorschach psychodiagnostic test (by Hermann Rorschach, originally 1921) and the TAT (by Henry A. Murray and Christiana Morgan, originally 1935) were the number one and two tests respectively, and their rise to these positions in the projective test movement illuminates the unlikely yet, in retrospect, nearly inevitable ways researchers recruited them to do what could not yet be done: look directly into the mind and heart of a human being. It was vital for future endeavor to plumb the depths of the human psyche to know exactly what a certain inkblot or picture held for a certain person (a bear? a clown? an eviscerated body on a dissection table?). How that person saw a card was a roadmap to how the person saw him- or herself and the world.

In an unusual twist that characterized few other diagnostic techniques, Hermann Rorschach's test, published as *Psychodiagnostik*, was rumored to have resulted in its author's death from heartbreak.

With an inaugural publication run of only a little over a thousand copies, it nonetheless sold so disappointingly that Rorschach, who had hoped for a breakthrough to revolutionize the practice of psychotherapy, fell into despondency. He had been preparing the test for years. At Münsterlingen in Switzerland during his early training as a resident he had been known for adopting strange but oddly productive methods. A monkey, deliberately set loose, climbed around the clinic, and he recorded his patients' revealing responses to its apery. At times he experimented with turning the clinic into a theater, projecting shadow-puppet shows and allowing his patients to dress up and perform, their antics also revealing for their files and subsequent diagnoses. He also had patients draw and posted their results on the walls. Eventually he settled on the inkblot as a desirably ambiguous stimulus that could reveal the preoccupations, and indeed the whole human truth, of the person at hand. The history of the inkblot form in Europe hardly began with Rorschach, however, as it extended many decades back to its employment as a parlor game, an artistic impetus (to Leonardo, Botticelli, and Victor Hugo), an accompaniment to poetry (in Justinus Kerner's 1857 dark volume *Kleksographien*), and even an intelligence test by Alfred Binet, all of which preceded and inspired Rorschach's adoption of the form.[14] Notably, these predecessors found that the qualities of an inkblot, whose forms combined the accidental with the hyperdefined, were stimulating. By the time Rorschach embraced the inkblot, he had passed through the Krjukovo clinic, a private sanitarium in Moscow, and another in Berne before he finally took up a practice near the Swiss border with Austria at Herisau, where he was more systematic than before. There he tested 405 subjects, patients, and colleagues on a set of different inkblots made from folding a page in half. Form, color, and movement were his three broad parameters for interpretation: it was not only what one found in the blots, but also *how* one found them—processes of perception—that these revealed.

These chosen parameters were why Göring's response years later to the red spots on Card III could be considered important: a dominant "color" response, labeled "C" or "CF," indicated a childlike lack of emotional control and tendency toward extraversion, whereas a dominant "form" response, labeled "F" or "FC," suggested

introversion and a more integrated emotional life. In answering Rorschach's question, "What might this be?," the patient proceeded through the inkblots from the purely black-and-white Card I; to the black, white, and red Cards II and III; to the riotously tropical palette of Cards VIII through X. Some evinced a hypersensitivity to color that Rorschach called "color shock." Such a response suggested possible psychotic tendencies. On the other hand, the descrying of movement, or "M," in an image—as in Göring's high-collared dancers—indicated high intelligence. A final parameter was whether one saw a whole image (W), parts of a whole (D, or common detail), or incredibly minute detail (Dd), each of which slid down a scale of increasing likelihood of schizophrenia. An answer's content (seeing a bat or a bird, say) also counted, though not quite as much as the other parameters, and a response might earn either an "A" for Animal or an "H" for Human or then again "Orig" for an unusual answer. At the heart of the test was deriving the subject's underlying "experiential type," or *Erlebnistyp*, by calculating the ratio of movement to color (M:C). Seeing more movement in the cards meant that one was in possession of a mature emotional life, whereas seeing color indicated, to put it mildly if over simply, that one was still stuck in childish ways.

Even after Rorschach streamlined his title to the one-word *Psychodiagnostik*, six publishers turned the work down, and the one who at last agreed to put it out was half-hearted, had trouble funding even the limited run, and insisted Rorschach cut five of the fifteen inkblots he had originally intended.[15] Despite the arbitrariness of this decision, based on impecuniousness rather than a grand design, the ten cards became totemic. Rorschach's final inkblots were, in fact, the outcome of years of experimentation with haphazard blots he made from folding a piece of paper in two over a small ink puddle; however, he ultimately decided the blots worked best, and he made them with carefully brushed-on ink and (most probably) watercolors to create a range of "chance forms." Despite the fact that Rorschach stipulated the cards should in future be printed on special paper made under highly specific humidity and temperature conditions so as to duplicate the inkblots of the 1921 first edition, those original blots themselves were deemed by one eminent scholar as a "total failure," marked by the printer's "slovenly work,"

which was full of errors. What error, and, more important, how can an inkblot meant to embody an accidental happenstance be wrong? In the following way: it seems that Rorschach's inkblots, as he originally painted them, contained little "shading" within the black blots, but when the first edition came out, quite a bit of "intriguing unanticipated variation in the shading" revealed itself (as another scholar has described it, putting a more positive spin on the incident). In his last article, Rorschach himself suggested this newly evident shading was significant—it would surely influence subjects' responses—but since no explanatory alterations appeared in the *Psychodiagnostik* itself, his remarks went unheeded at first, and the question of "shading," which was in coming decades to spark relentless and fierce controversy among Rorschach aficionados, remained as yet uncontroversial.[16]

Not long after his work's largely unheralded debut, Rorschach succumbed to sudden-onset peritonitis and died a disappointed man at thirty-seven. Although his technique gained some posthumous support in Europe (adopted by Jungians, crucially) and began to spread in Japan due to an "accidental" discovery a browsing psychologist named Yuzaburo Uchida made in 1925 when he stumbled across a copy of *Psychodiagnostik* sitting on the shelves of a Tokyo bookstore, it was only in the United States that it could be said, initially, to flourish.[17]

Most directly, the reason for its overseas flourishing was the arrival in July 1934 of impresario émigré Bruno Klopfer in Brooklyn, accompanied by his son Walter and carrying the Rorschach in his luggage. Until his decision to flee Nazi rule, Klopfer had been a well-placed Jewish-Bavarian psychologist with a successful practice in Berlin. There, in addition to his practice, he hosted a five-year run of a popular radio program that advised parents all over Germany on matters of child rearing, answering their letters and experimenting in new forms of dialogue. The show "was quite an impudence," Klopfer recalled toward the end of his life in an interview, "because people were still accustomed to . . . give *lectures* over the radio, and it wasn't at all customary to do it that way [sitting and talking]." Early success in broadcasting offered a hint to the effect Klopfer would later have on students and adherents: he was able to draw people in to his projects through a give-and-take approach, or,

as one of his students recalled, "He made you feel you were collaborating with him in the unraveling of a human puzzle."[18] As Berlin life became untenable for Klopfer and his wife and son, they fled Germany and were forced to separate, the son staying with his father. Stopping for a year in Switzerland on the invitation of Carl Jung (who issued it in response to Klopfer's visa problems), Klopfer gained experience in the use of the Rorschach for personnel selection at the famed Burghölzi clinic. Once relocated, with the family reunited in a small Brooklyn apartment and the Rorschach cards safely tucked away, he took a job as research assistant in Columbia University's department of anthropology under the legendary Franz Boas, a hiring decision that, though the job paid remarkably poorly, would have fateful consequences.

As it happened, by the mid-1930s American social scientists were eager to know more about the rumored capacities of the Rorschach test, for few had proper training in the use of this exotic psychometric device and its ritualized procedures. Predating Klopfer's rather dramatic U.S. landing was a small in situ circle of dedicated Rorschachers, all of whom learned from the psychologist David Levy, an American who had trained in Switzerland in the mid-1920s with Emil Oberholzer, Rorschach's executor and colleague. Thus, Klopfer was not exactly the first to carry the Rorschach across the Atlantic, but he did so with aplomb, under circumstances that drew attention, at least in the telling, to the physicality of the cards and the adventure of their crossing. He would become the most insistent institution builder and, not incidentally, would have by far the most influence with those who eventually built the data clearinghouse described here, as well as like-minded experimentalists, including far-voyaging anthropologists, sociologically inclined fieldworkers, and outside-of-the-box psychologists.[19]

Klopfer's arrival at Columbia was a godsend, and when graduate students discovered his intimate expertise with the test as well as his possession of an actual set of authentic cards, the news "went through the department like wildfire."[20] Intensive training sessions sprang up—not initially at Columbia itself, due to resistance from stodgy traditionalists, but rather in Klopfer's apartment, in empty churches, and in the kitchens of other adherents. During this fervid

time certain obvious flaws in Rorschach's research design were remedied, discussion (it is said) extended late into the night, and a cadre of stalwart devotees emerged. Klopfer, as founder (or what Marguerite Hertz calls "leading spirit") in 1936 of the mimeographed *Rorschach Research Exchange* and the fledgling Society for Projective Techniques and co-author of an influential how-to manual for the Rorschach published in the United States, befriended anthropologists and was instrumental in the spread of the technique to this discipline with its in-built access to "other kinds of minds." (Klopfer's co-author in the soon-to-be-classic Rorschach manual was Douglas M. Kelley, who would go on to conduct those fateful Nazi Rorschach sessions with Göring.)[21]

Meanwhile, internecine battles ensued in which rivals pitted themselves against Klopfer for control of the Rorschach so that eventually, by the 1940s, the test's American-based enthusiasts split into five mutually antagonistic communities, each of which systematized the Rorschach in its own way, and each of which had different ideas about the relationship of science to interpretation. Some saw themselves above all as atheoretical mathematizers (Zygmunt Piotrowski), some as statisticians (Beck), and some as sympathetic standardizers (Hertz), and each camp tended to cast aspersions at the others, exaggerating their respective inclinations, such that Klopfer was pegged as having "an emphasis on extreme subjectivity."[22] A telling detail about Klopfer's particular style is that he developed out of necessity—poor eyesight—a method of memorizing Rorschach responses rather than writing them down, and he could accurately recall entire tests from memory as if he had "internalized" them. When asked to consult another subject's written Rorschach protocol in order to interpret it, he would hold the record extremely close to his eyes. To the onlooker he appeared to be smelling the paper "and in some mysterious fashion combining visual and olfactory clues in his subsequent interpretation"—or so legend had it.[23]

Drawn to subtlety, Klopfer also championed sensitivity to "shading," that onetime printer's error that now came replicated in each edition of the cards. Shading, he felt, revealed how a subject organized his need for affection, and he pioneered a whole vocabulary to describe people's responses. "Shading evasion," for example,

indicated emotional avoidance. If a test taker responded to Card IV by saying, "About the only thing I could see would be something under water," this constituted avoidance of shading and likely indicated "reluctance to accept one's need for affection . . . stemming from early experiences of rejection and deprivation." Many shading-related behaviors could be found, Klopfer stipulated, including shading denial and shading insensitivity, and eventually "Klopfer introduced the largest number of shading response categories in the literature, i.e., 12," as one rival Rorschach researcher acknowledged.[24]

Klopfer's charismatic take on the Rorschach, one that relied on a personal line of transmission, a gift for organizing, a visceral connection to the cards, and an atmosphere of suasion, contrasted with the more rigorously quantitative and depersonalized approaches others embraced. So bitter did the resulting enmity among Rorschach rivals become, especially in the case of Klopfer versus the number-crunching but reputedly less personally winning Samuel Beck, that they refused to appear in the same room together or read each other's work.

Professional dust-ups aside, in the early postwar period, the tendency of the test was almost always in the direction of more traction, more authority, more credence. It spread especially within American juridical, clinical, and "pure research" circles. Even as experts administered the test to subjects exhibiting an extreme range of human behavioral possibilities—on the one hand, notorious negative achievers such as (eventually) psychosexual killer Jeffrey Dahmer; on the other, exemplars of excellence such as Franklin D. Roosevelt, Linus Pauling, and Albert Einstein—it achieved wide acceptance for use in day-to-day child custody cases and human resources departments. Did you get the job? Will you have rights to see your child two, three, four (or zero) days a week? It could depend on, as one disgruntled divorced father put it, whether you saw a butterfly or a bat. Each year, hundreds of thousands "or perhaps millions" of people continue even in the twenty-first century to take the test.[25] Throughout the test's years of growth, a technical claim of epistemological cogency and object-related transparency of vision prevailed and offered a self-justifying rationale for the test's further use; at the very least, researchers were assembling a

systematic database of millions of responses. As a nurse who worked early on with Rorschach at Herisau noted, the staff could "penetrate by way of the test into the world of the mentally ill to an amazing extent."[26] Worded differently but in essence the same, this claim would surface again and again as the projective test movement gained ground around the world, and its expression even at the outset, within the test's scene of origin, should be marked, for it spoke of the need, and the felt achievement of, *penetration*—not just of the mad, but also of all that was far off or difficult to talk to.

The Rorschach test truly came of age in the mid- to late-1930s, and the TAT, its only real rival in the realm of projective instruments, observed similar timing, born in the middle of that decade and gaining much ground by the end. The timing, as we will see, was not merely a coincidence.

This test, too, had its adherents. Whereas the Rorschach was the product of a single father, the TAT emerged from a non-fertile but romantic relationship between two people, one an artist, the other a psychologist. Henry A. Murray was a New England Puritan-stock, Harvard-educated biochemist who turned psychologist after reading *Moby Dick* and meeting Carl Jung during a European tour. On the ship's voyage over, Murray discovered his initials were the same as Melville's, H. A. M., a coincidence that he found mystically significant, and he went on, as a scholarly sidelight, to help found the revival of Melville studies in the United States. The then neglected Melville moved him because Murray felt personally connected to his blue-blood predecessor's unflagging efforts to understand and depict the human quest for meaning.

Murray and his lover, Christiana Morgan, another Boston Brahmin, met separately with Jung in the late 1920s—her visionary drawings from this time were immortalized in a special set of seminars in the Jungian oeuvre[27]—and decided to pursue their interest in the "dyad" as the root of all human relationships by inventing a psychological test based on an emotionally resonant series of pictures. By 1935, when they first published an article describing their test, titled "A Method for Investigating Fantasies," Murray had gained the directorship of the Harvard Psychological Clinic, and

Morgan was an assistant there. They solidified their invention in a 1938 volume from Harvard University Press called *The Thematic Apperception Test* and followed up with the reissuing in 1943 of the manual, again with Harvard, by which time the test was a star, a new light in the field of personality psychology.[28] The two also were the first to use the term "projective technique," a formulation that became the launching board for the projective movement. Just as inkblot tests aplenty preceded the Rorschach, so too did several see-a-picture, tell-a-story tests (such as Horace Brittain's in 1907, Walter Libby's in 1908, L. P. Clark's in 1926, and Louis Schwartz's in 1932) preexist the TAT, which, however, easily cast these forerunners into the shadows. Arguably, it was the step of joining the tests together under the rubric of "projection" that catapulted them to a level of success others had failed to reach.[29]

Morgan and Murray offered a way of exploring the least accessible unconscious contents of the personality in themselves. The Rorschach in their view elicited relatively simple responses. To begin with "Looks like . . .," as the Rorschach did, augured only "quasi-projections" or pseudo-projections based on the surface perceptions of the subject. In contrast, they felt, the TAT could access *apperception*—that is, the secret machineries by which the fantasy life and its imaginative fancies guided people's lives. The test was to be a way of making the invisible visible and retrieving the irretrievable in some manifest form: "My idea," Murray said in a later interview, "was to illuminate the unconscious processes—that were repressed—of which the subject was not aware. That was the whole point of it."[30]

Murray was in fact making a critique, by means of the operations of the test itself, of a significant portion of professional psychologists in his time. He was disgusted with what he saw others doing: colleagues racing to qualify as experimentalists by the endless running of rats through mazes "had trained in incapacity. They were trained to have tunnel vision." Obsessed with quantifying and being precise about carefully delimited areas of human functioning, his cohort shied from the unruly, the "darker, blinder areas of the psyche."[31] Yet it was not that Murray rejected exactitude and statistics. Paradoxically, his and Morgan's test, with its claims of new penetrating powers, itself was to become the object of a

full-scale rush to quantify and standardize during World War II and the Cold War.

In order to enter this unmapped terrain of fantasy, the two invented their test during intensive months (1933–1934) working together in the Harvard "Psycho Clinic," the institution of which Murray had suddenly assumed directorship due to the untimely death of its founder, the wealthy Harvard benefactor Dr. Morton Prince. This promotion from mere research assistant to head occurred despite Murray's lack of training in relevant areas, for aside from his personal connection with Carl Jung, Murray had spent his professional years as a physiological chemist doing embryological research on chicks at the Rockefeller Institute. Not only Murray's precipitous rise but also the very existence of the well-heeled Psycho Clinic rubbed some people at Harvard the wrong way—usually less well-connected people with fewer independent sources of income and a greater timidity around the unconventional. A high-level employee at the clinic, Morgan was at the start of engaging with Murray on a forty-year-long quasi-sadomasochistic, quasi-scientific investigation of male-female "dyadic" relations via their joint sexual and intellectual life. Capes were worn, a stone tower was built, and both felt the result of their efforts would be a conjoint masterpiece, a "love [that] was going to be a turning point in world history and culture."[32] Beyond their respective families, spouses, children; their books written and paintings painted; their colleagues mentored and friendships cultivated lay the one-on-one connection they developed first in the spirit of dizzy trysters and later with distinctly Ahab-like grit. Their original investigatory site, the clinic, was by all accounts a redoubt for exiles from a straitened Harvard psychological tradition dominated in those years by the chair of the department, a man perhaps infelicitously but accurately named Boring (Edwin Boring, to be precise).

Each picture in Morgan and Murray's series of thirty-one cards came from a current popular magazine photograph or an illustrated pulp novel. Morgan, a skilled draftsman, stripped away many indexical details indicating story or context so that each black-and-white drawing, adapted, became something new: the portent of an ominous but unknown future event. A mood of angst, hard to describe in words but easy to locate in the series, descended.

Although the pictures were said to be full of "ambiguous" stimuli, the dominant tone was decidedly ominous, bringing to mind Jung's analysis of Morgan's own dilemmas: "She is constantly fighting against something overpowering that comes from below," Jung remarked in the course of his four-year-long seminar analyzing Morgan's personal drawings. The TAT images shared this quality. The test's two creators described Picture 6, for example, this way: "The silhouette of a man's figure against a bright window. The rest of the picture is totally dark." Likewise Picture 12 portrayed a struggle with an unnamed dark force: "A young man helplessly clutched from behind by two hands, one on each of his shoulders. The figure of his antagonist is invisible." Elsewhere in the series a man clung to a rope in midair, a boy huddled next to a revolver, and a girl stood alone, her expression "obviously" one of terror and anxiety.[33]

The test was simple at first: show a picture to a patient or subject and ask him or her to tell one story per card. (The specific instructions were to describe "what's happening, what led up to it, the outcome, and the thoughts and feelings of the characters.") The analyst subsequently analyzed the accumulated stories, and this constituted the entirety of the test. "As a rule, the subject leaves the test happily unaware that he has presented the psychologist with what amounts to an X-Ray picture of his inner self," observed Murray. By getting the subject to focus on an indeterminate yet emotionally saturated phenomenon, the perceptive interpreter—"one with 'double hearing,'" as the researchers put it—will see that the subject "is exposing certain inner forces and arrangements, wishes, fears, and traces of past experiences."[34] There was no fail-proof method given for interpreting the test, much less tabulating its results. Success depended on the hermeneutic gifts of the test giver. The TAT, thus, was a powerful if not sure-fire way of looking inside someone's skull. Soon, followers would heighten and generalize further the claims for its prowess at doing so. And soon, adherents would claim for the data it produced the status of dreams.

Card 1 in what came to be called the standard Murray TAT series showed a boy looking at a violin that lay on a table. The original was a Samuel Lumière photograph of Yehudi Menuhin as

a boy, published as "A Violin Genius of 10" in an article in the January 1928 *Musical Observer*. In its second life as a Morgan-rendered drawing for the TAT, its contrasts amplified, its identifying features expunged, the image was, as with all projective stimuli, undetermined. What was the boy thinking or doing? was the question. A "typical" response was to say that the boy was looking at the violin hoping to avoid practicing it and wishing he was outside playing baseball. As it turned out, a typical Japanese response was quite different: the boy was wishing he could afford lessons and yearning to hold the violin in many cases. When the card was shown to a group of young Navajo Indian men during Bert Kaplan's visit to the reservation in 1947, an army veteran named Eddie, recently returned from the war, described the boy as a "country boy," around thirteen years old, who is drawn to music but later loses interest and "he just quits this music and later on he gets interested in the agriculture."[35] Quite a few young Navajo men saw this card as depicting a boy who was trying to "fix up" a broken violin or guitar. (Cross-cultural testing is the subject of the next chapter, and the tricky undertaking of giving tests to non-mainstream groups will be addressed there.)

But typical responses were less interesting than . . . interesting responses. One manual gave the following as an example of a productive answer: a "depressive psychotic" described the picture as showing a boy giving up forever on the violin because a string had broken. Another guide provided the example of a hard-drinking fifty-two-year-old Hollywood film editor who constructed a story thus:

> S[ubject]: Now from this I'm supposed to tell you what?
> E[xaminer]: [Repeats instructions.]
> S: He has just finished practicing and . . . and he is sitting there reflecting . . . over his violin . . . on a score which he's just tackled. Is that enough?
> E: Make up more of a story. . . . How does he feel? . . .
> S: I should say he feels a little . . . hmmm, disturbed, no, not disturbed; well we'll [mumbles something], we'll say a little disturbed by the fact that he hadn't brought off, what will we say, the Scarlatti exercise to his satisfaction. He is a

an impersonal but very accurate machine for extracting samples of the "self."[40]

In meeting the most extreme human behavior or the greatest mysteries of social and cultural existence during these years, the logical step to take, it seemed, was to administer a scientific test or a battery of tests. On the one hand, mid-twentieth-century Americans' love of hi-tech gadgetry in arenas as diverse as spy craft and the culinary arts had something to do with this. By 1966 even Frigidaires were sold on the basis of the "Space Age Advance" they embodied, even as U.S. espionage experts favored a spectacular futurism and fell into "technophilic hubris" with their procedural arsenal of invisible ink, drug-laced artifacts, and exploding cats. On the other, perhaps even more compelling hand, there was the scientific-imprimatur factor: specific "X-ray"-like capacities attributed to tests such as the Rorschach lent them, for a critical period of around twenty years, the sense that they could do two contradictory things that simple observation could not. First, like a powerful "invisible hand" of science, they could exert experimental or experiment-like control over a situation—and thus deliver good, reliable results. Such results could be compared across studies: anyone who ever took the Rorschach in a standardized manner could be compared to anyone else who took it. In its mix of usefulness and outlandishness, this set of values, particularly concentrated in the projective test movement, could be called the "practical spectacular."

Second, many Rorschachers and TAT enthusiasts sought techniques that were more than mere mechanical gauges providing simple measures or trait lists or aspiring to apply nineteenth-century-style mechanical objectivity to the depths of subjectivity. Promoters self-consciously wanted to go beyond the psychometrics of Alfred Binet, Lewis Terman, Edward Thorndike, and Louis Thurstone, which permitted standardized measurement of intelligence, social attitudes, aptitudes, and other dimensions of behavior but remained limited, derided by some critics as mere "pencil-and-paper" measures.[41] What was wanted was a way to gain access to what was not immediately visible to the naked eye nor easily ticked off on a checklist, such as the hidden impulses, complexes, drives, and emotional mazes postulated to make up the inner life.

Not just any test would do, of course. To possess these capacities, a test had to be "projective"—that is, it had to target the way individuals "project" their own preoccupations and ways of seeing the world into neutral or ambiguous scenarios (such as an inkblot or an odd cartoon). The less distinct the scenario, the more projection occurred. This sense of how projection works derived most directly from Freud, who used the term "projection" *(Projektion)* in 1895, 1896, 1911, and 1913, initially to describe a paranoid way of reacting ("internal perceptions replaced by external perceptions") and later to describe how all people, sane and insane, can be said to "make" the worlds they see and in which they live. Projection is how this happens. "We should feel tempted to regard this remarkable process [of projection] as . . . being absolutely pathognomic . . . if we were not opportunely reminded [that] . . . in fact it has a regular share assigned to it in our attitude to the external world." Projection, as Freud characterized it, entailed a distinct and often forceful movement out, an "ejection," a shifting, or even a shooting forth, of internal concerns onto external targets. It was, he argued, a "remarkable process"—and yet it was entirely, literally banal, for it constituted the warp and woof of daily existence in all its ongoing distortions and small or large self-deceptions. Indeed it was exactly the way we "[built] up the external world," said Freud, through projections that "should by rights remain part of the *internal* world."[42] (Freud saw parallels among dream work, creative writing, and the "projected creations" of primitive men.)

Borrowing from Freud but expanding on (and ultimately erasing) his influence, a movement arose to promote projective tests as the answer to an impasse in the human sciences: how to "get at" the very essence of human meaning, subjectivity itself.

In attempting to import the quality of objectivity to their own tools, behavioral scientists were, if anything, more thorough and more bold than natural scientists, with whose work objectivity was more easily linked.[43] It was not a simple mechanical objectivity they sought but a malleable, subtle one that incorporated not only judgment but also intuition and counted its object not only as a thing but also an ever-changing complex alignment and realignment of qualities. Working holistically, projective testers revealed key patterns that showed how, within the ongoing flow of everyday

experience for each person, access to a hidden yet not hidden truth lay available to the proper technique. Here again the practical-spectacular held sway. There is a longer history of such hybridizing through technologies, although it is sometimes ignored. Recently, John Tresch's *The Romantic Machine* revived a series of strange nineteenth-century technologies that put relationships above essences and rendered nature as part of the social fabric. From Auguste Comte's Cosmogram to Charles Fourier's Phalanstery to Pierre Leroux's Pianotype, romantic machines as Tresch describes them make them sound like eerie precursors to projective techniques. Just as these nineteenth-century machines (built by technophile mystics) incorporated emotion, aesthetics, and individual needs into their workings, so did twentieth-century projective tests (built by modernist mystics) decenter "the human" in order to include interactive forces of projection and subjective making. "Any attempt to depict the world, and especially to conceive of the cosmos as a whole . . . must include recognition of the human activity involved in shaping the world picture."[44] Along similar lines, projective test workers met the demand to scientifically capture human nature by swirling in the shifting mechanics of projection. (As we will see, projection was both a human activity and a technological effect.) In this way, they created a more "human" version of objectivity, one saturated in human activity. This also forms part of an against-the-grain story of technology.

Objectivity itself has been a topic of reevaluation recently in the history of science, yielding the main insight that "objectivity has a history," one that renders it a forever morphing set of values and practices rather than an unchanging ideal. Lorraine Daston asked in a 1999 talk at the University of Chicago, "Can Objectivity Have a History?" and she and Galison have answered in the affirmative in a series of articles and books, from a number of angles. Once, objectivity appeared as a kind of North Pole of science—that heroic point on the map toward which the enterprise was forever striving, forever attempting to arrive, and therefore a part of science that could safely escape historical attention. In recent decades, historians of science have come to see objectivity as changeable and surprisingly plastic. To put it simply, it meant something different to be "objective" in 1610 than it did in 1910, and this

difference also depended on whether one was a crystallographer, tulip aficionado, or budding dream collector. Yet there was a developmental pattern discernible in objectivity. As a way of looking at the world, objectivity over time developed "its own coherence and rhythm, as well as its own distinctive patterns of explanation."[45]

The realm of subjectivity, too, according to recent scholarship, is ripe for reevaluation. If objectivity has a history, so too does subjectivity. Steven Shapin argued recently in an essay titled "The Sciences of Subjectivity" that it is about time for scholars who study science to see subjectivity not just as a wayward element that acts to disrupt objective processes—a view according to which subjectivity is the part of scientific inquiry that is "inchoate, arbitrary, unstable, and endlessly varying," the part that is constantly "contaminating" the workings of objectivity, and in the end "what we're sadly stuck with if we don't watch out." Instead, one can focus on subjectivity as a domain of active knowledge making and an "explicitly framed topic of inquiry."[46] Insight from these inquiries is doubly applicable within the projective test movement, for the nexus of objectivity and subjectivity is precisely where such tests emerged. When considered within the history of the human and behavioral sciences, they cast particularly good light.

Projective test workers (as they called themselves) frequently spoke of objectivity as their goal and even at times of "objectifying the subjective."[47] Through their tests they strived for a "view from nowhere"—also known as aperspectival objectivity—while at the same time actively embracing the dynamics of projection. This approach might seem like a contradiction (a total escape from perspective versus a total embrace of perspective), but it was one they welcomed. Projection was a counterweight to the problems inherent in what has been called "perspectivity." At its heart is a quest to escape perspective by finding a position of having no position, achieving a stance of hovering above phenomena, or—as in the 2003 film *Kitchen Stories*, depicting social scientific objectivity practiced by Swedish social researchers stationed among elderly Norwegian farmers—sitting in a tall chair in the kitchen as if you weren't there at all. In apparent contrast to perspectivity, projection is the mechanism by which the "self" operates in a patterned way on reality and experience. The process of projection posits a

mobile, mutable, ever-moving self that is more a series of trajectories and encounters than it is a solid, unchanging "thing." In a projective test, a stimulus card such as an inkblot becomes a spot where the self moves and becomes visible as a pattern of interactions. It is glimpsed—there!—at the place where the card or paper tool meets the user or test taker. Projection is thus perhaps a response to a crisis within the pursuit of social scientific objectivity. It entails a shifting relationship between subjectivity (as both domain and point-of-view) and objectivity (as both domain and goal). The "projective" part of projective tests allowed them to alter their relationship to objectivity. It tended to allow more complex possibilities for how objectivity manifested itself in the middle of the twentieth century.[48]

And here is where the story picks up momentum. For it seems that although Rorschach never himself used the term "projection" or "projective test" to describe his technique, which (as mentioned) he saw more in terms of an experiment revealing a subject's perceptive processes, still some of the qualities inherent in his test rendered it particularly useful in the American behavioral science context. If, as Daston points out, the task of the historian is to recover the "slow process of accretion and absorption that accounts for the layered structure of the notion of objectivity," then projective techniques may mark a key moment in that slow process, which after all has been described less fully in the human sciences: an accretive shift and reconfiguration.[49]

After making a cameo appearance in Morgan and Murray's 1938 text, the term "projective methods" next appeared in a manifesto that psychologist Lawrence K. Frank, a man once described as the "procreative Johnny Appleseed of American social science," penned in 1939.[50] Looking around him at the proliferating array of tests with similar dynamics, the entrepreneurial Frank was the first to think of lumping them together and thus creating a veritable movement that would come to be called the projective test movement.[51] The "projective methods for personality study," Frank claimed, worked much like high-powered microscopes. They allowed researchers to see otherwise hard-to-glimpse phenomena such as how people organize their experience and "structuraliz[e] their life space." To look at a person's test results was to see revealed

originals."[55] At the cards' heart, then, is an exactingly perpetuated mistake—albeit one that has proven generative.

Further contradictions, paradoxes, and lapses abound. Most prominent U.S. Rorschach workers did not realize that "Rorschach's inkblots are not actually inkblots" until 2000, when John Exner revealed this not-exactly-hidden though also never-much-discussed truth. Yet as diehard enthusiasts insist, the blots are not "mere[ly] accidental" but rather "special."[56] They have special qualities and elicit special reactions. This feature has always been at the core of the test's mystique, a mystique that has mixed liberally in the history of projectives with a quest for scientific authority. Finally, it was the Rorschach test's very indeterminateness (with regard to method) and intimacy (with regard to subjective processes) that allowed it to be recruited to establish a new sort of objectivity—about subjectivity—in postwar behavioral sciences.

So it was that in the United States the Rorschach initially found a home, presently circulated in a network, and eventually founded an empire when it joined the projective test movement. The fact that it flourished in the United States, I am arguing, had less to do with its promised special powers than with its hazy, inkblotty, indeterminate, error-ridden, ahistorical, and abandoned-at-sea qualities. In this light, it is interesting that the Rorschach test, though producing so much research and criticism—a recent bibliography of Rorschach-related literature runs to 492 pages and lists over five thousand publications, a number some suggest makes the test the most intensively studied creation in the field of psychology[57]—has rarely been the focus of historical analysis.[58]

Yet its history, along with the history of the projective test movement, highlights something about the nature of data, evidence, knowledge, and objectivity within the human sciences. The tests formed part of an effort in human documentation—an attempt to document the most human of human capacities (hence the seeking out of Nazi data, also known as "samples" of human nature). As the fate of the protocols shows, however confidently scientists may set forth, their efforts to "secure" reliable facts and finalize conclusions are subject to political and intellectual instability, undertows or riptides that at times destabilize the data, hold them in abeyance, and raise or lower the fortunes and reputations

of the purveyors. The history of the tests reveals these fluctuations to a dramatic degree, and it is thus not surprising to find that Bert Kaplan, who for a time made it his mission to rescue forgotten or at-risk paper protocols, took an interest in the history of such tests. An undated handwritten note in Kaplan's files from Christiana Morgan informs Dr. Kaplan that Dr. Murray (who was one of his teachers from graduate school) "thinks it would be fun to talk to your group about the early beginnings of the TAT."[59] The group in question was likely a Harvard psychology course Kaplan taught at Harvard around 1949 or 1950, around the time he was beginning to formulate his idea for the data archive.

More recently, scholars have seen the history of psychological tests as a tale of increasing standardization, reduction, discipline, and a general tendency to become "less than" what they once were. For many Rorschach aficionados the attempt to transform a complex, multiperspectival experimental gauge into a simple standard instrument was a fundamental betrayal of the test. Historian Naamah Akavia, for example, writes of how looking at the Rorschach historically and studying its origins "readily reveals it to have been a much richer conceptual tool originally than the standardized projective test it has since become."[60] However, my goal in historicizing the test is quite different: it is to show that the process of standardizing was not simply one of boiling down, oversimplification, and loss of richness. The standardizing process was itself complex, at times bizarre, and though it did develop other areas than inventors such as Rorschach may himself have, in some ways it adhered rather closely to Rorschach's own "experimental" vision.[61]

This chapter has also been concerned with the paper trail these tests left. The paperwork of the test results (like the cards themselves) retained a kind of aura from its contact with Nazi war criminals, schoolchildren, Japanese book browsers, Navajo GIs, and many others who undertook the test. And as we have seen, the touch and feel of the paper records contributed to Klopfer's direct-from-the-source charisma and what one critic has controversially called his "guruhood."[62] Surprisingly—considering how sought after these troves of information were in their heyday—the records also became subject to a curious fragility and elusiveness. Eventually

Kaplan and his allegiance of data activists would retrieve some of them from off-site storage "graveyards" and careless accidents resulting in lost or precarious lodging. Other caches, in particular the Nüremberg Rorschach records, would remain in abeyance, a kind of remission, for decades, their absence serving as a reminder of the very phenomenon the "database of dreams" was intended to redress.

Without these qualities of projective test data constantly on view—as desirable and dahlia-like as they were fungible—it is doubtful Kaplan would have thought to attempt his own experiment in preserving data. First, however, the tests went around the world.

CHAPTER TWO

The Varieties of Not Belonging

At some imprecise but remarkable moment around the twentieth century's midpoint, it became an obvious thing to do, when a social scientist met someone from far away or who was very different from himself, to sit down under the trees or over in the sand and delve into the ink-blot, House-Tree-Man, Stewart Emotional Response, or Draw-a-Person test. In certain cases, small rooms in missions or grass huts served as isolating structures to allow one-on-one testing, but generally the tests took place in "unconventional" settings under less than ideal circumstances—which might include having an entire extended family crowded around offering possible answers. Or the subject was engaged in washing some of his wife's silver in soapy water while taking the test, a circumstance not envisioned by Hermann Rorschach.[1] Still, social scientists systematically tabulated their results, and by the 1950s, the giving and storing of such tests was nearly standard procedure. As British anthropologist S. F. Nadel commented on the American-born trend, "A new kind of routine seems to be emerging whereby anthropologists, before setting out for the field, pack into their kitbag a set of Rorschach cards and T.A.T. much as they do cameras, a compass, or a copy of *Notes and Queries*."[2]

Before, during, and after World War II, such instruments spread from the field of professional psychology (where their inventors calibrated them to "X-ray" the inner struggles of a single

human being) to anthropology and the behavioral sciences more generally, where they helped to capture the inner life and cultural data of a whole group or population—or so it was hoped. Instruments that first issued from Viennese drawing rooms, came of age in Swiss clinics, and later circulated in Greenwich Village salons—techniques designed, in brief, to plumb the psychological depths of the kinds of people who were very, very interested in their own psychological depths—traveled from clinic and doctor's office to field, island, tiny atoll, and Mato Grosso. They moved to a new set of scientific environments and very different sorts of people—in particular, the sorts of people who would neither have thought of asking to be tested nor would even have known what a psychological "self" was, much less a test to plumb it. Suddenly, what one expert termed "exotic cultures"—that is, "cultures clearly outside the main stream of Euro-American culture"—were the target of testing en masse.[3]

During the immediate postwar years, such psychometrics drew in wider and wider circles of culture-and-personality fieldworkers.[4] If placed in an imaginary collective archive (just such an archive would one day form the backbone of Bert Kaplan's Microcard experiment!), the combined results of their cross-cultural expeditions would add up to tens of thousands of pages of Rorschach, TAT, Bavelas Moral Ideology, Stewart Emotional Response, Draw-a-Person, and Sentence-Completion test results drawn from around the world. Most plentiful, however, were the Rorschach results, befitting the test's number one status among projective vehicles. These often appeared in the standardized forms that "Rorschach workers" (as they were called) adopted in the interest of regularizing procedures: Bruno Klopfer's six-page Record Blank, issued in 1942, which included a page of ten miniaturized inkblots on which the worker could add patterns, symbols, words, and lines to indicate where and what the subject had seen. The forms, when filled out properly, allowed any subsequent interpreter to "obtain a concise and simultaneous picture of what has been going on in the mind of the subject"—that is, almost to reconstruct the giving and taking of the test.[5]

A list of the Rorschach records later drawn together from data donors reads like a whirlwind world tour. From the Pacific islands

this essential question has been little examined in the case of the Rorschach test is an understatement; in the history of the projective test, the history of the traveling test is a near perfect absence. In part, this omission is due to the fact that from the point of view of the growing Rorschach empire, the use of the test in anthropological field studies of people sometimes mistakenly called "primitives" represented only one among many worthy applications, including (as Klopfer once listed them) the study of juvenile delinquents and adult criminals, stutterers, epileptics and alcoholics, cancer patients, and twins. Klopfer and Kelley's 1942 Rorschach manual devoted far more space to the possibilities of Rorschach testing of armed forces personnel in order to discern the unstable and those who were officer material. The historiography of such tests, not itself robust, has ignored their adventures abroad.[12]

Here I attempt to bring the sidebar to center stage and tell what happened when the tests' mobility and malleability became of the essence, when the push to standardize them and the push to spread their use were sometimes at odds, and when (despite these challenges) for an energetic group of pioneers the project was full of promise. Eventually, due to changes in social science and social life in the second half of the twentieth century, the tests' erstwhile promise turned to obsolescence, decline, and the "orphaning" of the data they produced.[13] To explore this tale is to look into the role adaptable technology played in the database-of-dreams experiment.

On one level, the question of how tests exactly began to be taken around the world to be used with "primitives" is a straightforward problem of dissemination. Who borrowed what test from whom; at what dinner party, seminar, or colloquium (never underestimate the power of a dinner party); and then how did the intellectual spark catch fire? The answer to who first thought of "going into the field" with Rorschach cards packed alongside mosquito netting appears surprisingly simple: at a New York seminar in the mid-1930s on "The Effects of Personality on Culture" sponsored by the National Research Council, the renowned senior anthropologist Ruth Benedict began talking about the Rorschach to a man who had never heard the name before. Her interlocutor was A. Irving Hallowell, who went by "Pete," a recent convert to anthropology

with a background in social work and a growing interest in psychoanalysis. He was struck by this new name, *Rorschach*, and by the possibilities the eponymous test seemed to offer. "Well . . . so I didn't talk to Ruth about this at the time but . . . I decided to look into this. And I did [for a few years]," he recalled decades later in an interview.[14] Little published research about the Rorschach test then existed, no translations of *Psychodiagnostik* were available, and Hallowell had not yet heard of Bruno Klopfer, but he struck up a correspondence with the "tireless" Chicagoan Samuel Beck, who had published a few articles. By the time he was prepared to set off for Manitoba in the summer of 1938, Beck's *Introduction to the Rorschach Method* had come out, so Hallowell, with no formal Rorschach training, went forth "with his book under my arm into the field."[15] In this way, another image of physical transportation etched into the story of the Rorschach diaspora.

This was by no means Hallowell's first trip to the area, however. Almost a decade before, on July 1, 1930, Hallowell had disembarked from the steamship SS *Keenora* on the shore of Lake Winnipeg at Berens River, where William Berens, a chief of the Ojibwe people, was one of the first he encountered. Berens, whose grandfather, Bear, had taken the European-style surname from that of a Hudson Bay Company governor, and whose father, Jacob, was the first Berens River Ojibwe to convert to Christianity, liked to meet the *Keenora* during its weekly summer visits, and their first conversation ranged far, as far as cross-cousin marriages and territorial issues, setting a pattern for a long friendship and "virtual collabora[tion]" (as Hallowell later put it).[16] In addition, since Berens had a mother of mixed Scottish, Cree, and French Canadian heritage, he spoke English comfortably ("very intelligent—excellent English," Hallowell noted in his diary that day).[17] Although Hallowell had originally intended to study the Cree, further afield in Manitoba, the conversation with Berens crystallized his interest in the Ojibwe and particularly "the fact that there were still unchristianized Indians 250 miles up the river in the Pikangikum Band," to which Chief Berens agreed to accompany him.[18] Two years after their first meeting, Hallowell and Chief Berens traveled a hundred miles by canoe (including fifty portages) to encounter, as they believed, those "less contacted" Ojibwe bands, and Hallowell

concluded that they were, if not completely untouched by white influence, outside of normal temporal bounds. Time had stood still, at least in that redoubt. The two made several trips in the following years, culminating in the Rorschach voyages.

The site at the mouth of the Berens River where Hallowell had disembarked was a crossroads not only for Ojibwe people, but also for the wider regional socioeconomic order, which had been rapidly evolving and changing during the last quarter of the nineteenth century and first years of the twentieth. Lake Winnipeg, on whose eastern shore lay the Berens River port, had been the site of the area's first commercial fisheries in the mid-1870s, run by Icelandic fishermen. Fish shipments went to Winnipeg on steam schooner and from there were transported by rail to larger depots. Icehouses began to be used to keep fish frozen to access American markets, and many Ojibwe in the mouth-of-the-river communities had summer jobs at the fisheries, even as native fish stocks were almost completely wiped out by commercial overfishing. Eventually, around 1930, Chief Berens negotiated to permit Indian fisherman to have commercial licenses. Nonetheless, as Hallowell recalled with chagrin many years later, local whites invariably called him "Willie," rather than Chief Berens or Mr. Berens, mimicking oppressive patterns of address found, for example, in the American South.[19] The Ojbiwe themselves were the fruit of much mobility in lineage for the past three hundred years and had mixed with distant American Indian communities, as well as with Crees, and with fur traders of British, French, Scottish, Syrian, and Algonkian ancestry.

A few years later, in 1938, with the Rorschach tucked under his arm, Hallowell arrived once more at Berens River, eager to use this new tool to explore the differences he had seen among Ojibwe in his previous studies. That summer he administered (or in his word "secured") a total of one hundred tests. Upriver among Little Rapids, Pauingassi, Poplar Hill, Pikangikum, and other bands he found a rate of 50 percent "well-adjusted," versus far fewer downriver in the Berens River bands (including groups from Poplar River, Ft. Alexander, and Manigotagen River), where several subjects, in particular, he judged to be severely maladjusted. After completing the summer's work, he met with Bruno Klopfer, and the two presented a forum at that winter's "Triple A" meeting (the annual

American Anthropological Association [AAA] convention), which drew a large and curious audience, though overall, as Hallowell recalled, the feeling was, "Who could take seriously playing with inkblots?"[20]

Undeterred, Hallowell went back to Manitoba in the summer of 1940 to supplement his initial cache, creating a run of 151 protocols covering men, women, boys, and girls in two Ojibwe areas (upriver and downriver). All together, the data held out the promise of discerning personality changes that might accompany the degree of contact with the dominant society. He subsequently donated the whole data set to Kaplan's data-warehousing project, of which Hallowell became the guiding light and official chairman.[21] Despite the differences he found, Hallowell felt the tests showed that there was a unified "Ojibwa type" of personality, and that this Ojibwa-ness was in fact under attack from white culture ("acculturative forces"). Still, it was, at least for the moment, persisting in many ways.[22]

After Hallowell's last Rorschach voyage upriver in 1940, he never again visited the area. The Rorschach formed a final punctuation mark to his decade's worth of visits, though he continued to publish works about the Ojibwe for the rest of his life. Many Ojibwe remembered him fondly and perennially expected him to come back. In the summer of 1952, a visiting anthropologist met Chief Berens's widow, who handed over a small tent and old cookstove that had been Hallowell's, stored awaiting his return; in 1966, another visiting anthropologist was mistaken for Hallowell and then wrote him saying, "You are well remembered . . . and apparently are still expected to return, for I was flattered by one . . . woman's insistence that *I* was the '*Mide-oogemah*' [Hallowell's honorary title] from the States!"[23] Chief Berens himself wrote Hallowell periodically, thanking him for books or Christmas cards sent and emphasizing his regard, as in one letter: "You must not think I'm forgetting about you. But I never forget about you, but I had now body [*sic*] to write a letter for me."[24] Yet other priorities prevented or deterred Hallowell from coming back. In the summer of 1946, instead of visiting Berens River, he led a team of five graduate students to administer Rorschachs en masse at a more southerly locale among the Wisconsin Ojibwe of Lac du Flambeau

(known as the Chippewa), a group he deemed far more acculturated than the Manitobans. These data would fill out his Rorschach sample with an additional contrasting case and complete his contribution to the collective Microcard archive, allowing future scholars to test comparative hypotheses. By 1947, William Berens was dying and wrote Hallowell asking him once more to visit: "I am the oldest here now. But will be very glad to meet you again." It seems that Hallowell did intend to (and Berens died not long afterward), but Hallowell was then immersed in the headline-garnering murder trial of his adoptive son, Richard Kern Hallowell, who was soon to be found guilty of killing two Philadelphia policemen. Twenty years later, Richard, released from prison, would kill his mother, Hallowell's first wife. (Historian George Stocking, a student of Hallowell's, has speculated about the unspoken influence this ongoing personal drama may have had on his teacher's theorizing, in the form of an increasing concern for the interplay of psychological, cultural, and biological patterns in human evolution, but there is no room here to explore these questions further.) Half a century after Hallowell's last visit, in November 1992, one of Hallowell's interpreters and camp helpers, by then elderly, recalled the anthropologist's visits and, aside from the question of his skill as a dancer (affirmed), deemed his work important: "It wasn't anything that was useless. What he did was for a good purpose"—especially his documenting of "the way the Indians lived before."[25] For him and other Ojibwe, it was not the high-tech Rorschach but Hallowell's pursuit of more "traditional" fieldwork—recording dreams, rituals, and ways of life then losing purchase among the young—that was of most value.

The picture of Hallowell as the first in the American lineage to test non-Western, non-mainstream, non-literate people is slightly complicated by Hallowell's own statement that perhaps he was not the first. Such modesty and lack of a self-promotional instinct made many esteem him as the "anthropologist's anthropologist" during key postwar years of American anthropology. Hallowell thought perhaps Jules Henry, who had also met Ruth Benedict during the 1930s—in Henry's case at a Manhattan dinner party, though with similar galvanizing effect—preceded him in the field

way, as another eventual Microcard contributor, George Spindler, did, "Rorschaching [became] a fad."[30] On the heels of the pioneers came troops of Rorschach workers who often combined the inkblot with other projective tests and who by some estimates had churned out around 150 studies hailing from over seventy-five societies by the time Kaplan crystallized his project to collect masses of preexisting data sets across the social sciences.

Projective proponents who moved around the world administering their tests were, in a sense, countering the advice of the prominent stay-at-home expert, Beck, who in 1949, at the high point of cross-cultural testing's vogue, invoked an inward-turning version of Frederick Jackson Turner's famous "Frontier Thesis." As Beck put it, "We are now living in the one, closed world in which there are no more wide open spaces," and in such an utterly closed world the adventurous scientist's only remaining gambit was to explore the "Frontier Within" via tests like the Rorschach. However, for Hallowell and galvanizing groups of other workers, the frontier within also still lay without. The world may have been losing its wildest places, but the tests would help understand precisely how this happened and what were the psychic results of people experiencing such changes. Cross-cultural testers wanted to observe the effects of the changing outside world on the interior personality.

Indeed, the use of tests became a synecdoche for the growing field of culture and personality itself in the postwar years. As Kaplan commented, "The whole culture and personality area has somehow become prominently identified with these tests."[31] This was a big change undergirding the work of many of the "second generation" and galling to the first, including Margaret Mead, who complained of the tacitly accepted view among upstarts that "some work was done back in the 1920's and 1930's by the pioneers but that the *real work* in the field began when a few anthropologists borrowed projective tests for their own use."[32] Note that Mead's chronology here was slightly askew, as the first cross-cultural Rorschach users did set off in the 1930s, but she meant to highlight her own generation of pioneers as distinct from those she viewed as overly technocentric successors. Yet for these borrowers, the tests gained a status akin to totems, emblems of their own identity and their own sense of personal and professional possibilities.

By the late 1950s and early 1960s, criticism of projective tests, never absent, mounted in what Kaplan with a distinctly Kaplanian turn of phrase called a "somewhat violent" manner.[33] The purported objectivity of the tests, their vaunted ability to deliver workable "samples" of the inner life, and the claim that they operated in a value-free manner across cultures all came under attack. For some, this was an opportunity to double down. The field of culture and personality, itself often maligned as overly speculative, had staked a great deal on its ability to develop proper instruments, and the Rorschach and TAT were the most prominent candidates. Again, Hallowell addressed this point directly: "There was professional resistance on almost every front to investigations along these lines [of how culture affects personality and vice versa]. This was partly my reason for using the Rorschach Test; it would be an aid in accumulating relevant empirical data."[34] Tests, whatever their drawbacks, produced good-quality, relevant, reliable data stacks. Or let me qualify: the data were not perfect, and perhaps not even always good, but they were the best available under the reigning conditions (or so the tests' supporters felt).

In the face of vigorous anthropological criticism, projective tests flourished widely in the behavioral sciences, and Bruno Klopfer reported that some Europeans in the postwar period were even picking them back up. Swiss psychologist Gertrude Meili-Dworetzki, a student of Max Horkheimer and Theodor Adorno, was using the Rorschach to show how perception processes altered with age. Polish sociologist Tadeusz Grygier, a former Gulag prisoner who was based in London postwar, attempted to use the Rorschach and TAT to study displaced persons (DPs) in camps across Europe in an attempt to gauge the impact of oppression on human culture. He tested those who would agree to speak with him, though it must be said that not many Jewish DPs, just released from concentration camps, would work with a non-Jewish Polish researcher. Meanwhile, David Boder, the Jewish, Russian-born, émigré U.S. psychologist, also administered the TAT in these camps just after the war—nearly crossing paths with Grygier several times but experiencing slightly more success.[35]

By the mid-1950s, Klopfer reported experiencing "new stimulation" from the Rorschach's recursive return to its origins. A visit

to Switzerland in the summer of 1954 excited him about the "exploratory-experimental approach many of our European colleagues seem to favor."[36] The suspicion among some that projective tests were merely a fluke or a "kind of 'war boom'" dropped away in the face of ample evidence of bibliographic heartiness, Klopfer exulted. For the first twenty-five years of the Rorschach's existence there had been 786 publications devoted to it (not bad), but in the ten years between 1945 and 1954, there were 1,899 (much better).[37] The *Rorschach Research Exchange*, a mimeographed newsletter that began feebly in 1936 under Klopfer with approximately nine subscribers, skyrocketed in popularity, broaching seemingly picayune debates over certain properties of the instrument or its methodological quirks or making bold attacks against rival camps. (After a succession of new names culminating in the *Journal of Personality Assessment*, it continues to flourish today.)

An abundant postwar literature devoted its energies in large part to standardizing efforts and dispersion effects in what was now sometimes referred to as the "test-and-measurement field."[38] In *Drawing Things Apart*, historian of science David Kaiser shows how the legendary physicist Richard Feynman's diagrams, from the late 1940s through the late 1960s, became a "new diagrammatic tool" that spread through the ranks of physicists, not only Nobel laureates, but also the rank and file of mid-century practitioners making everyday calculations, so that "physicists fashioned—and constantly refashioned—the diagrams into a calculational *tool*, a theoretical *practice*."[39] Crafting, deploying, and stabilizing their tools: this was also the work of the Rorschach cadres, and in particular those who wanted to take it far afield into "the field." Kaiser follows "unfolding variations within [physicists'] work," contrasting this approach to Bruno Latour's emphasis on "immutable mobiles" (1986) and the way consistency was achieved through reducing the variability of tools. In the case of the Rorschach diaspora both these forces—loosely, fealty and flexibility—were at work. The Rorschach and other tests were themselves "paper tools," in Ursula Klein's term. Chemical formulas on paper in mid-nineteenth-century chemistry (Berzelian expressions such as H_2O) allowed scientists, "at least for a while," to "t[ake] for granted" that they were true representations of the substance under investigation so that chemists could build

models otherwise too difficult to express. Likewise, tests such as the Rorschach worked to stabilize an emerging field so that new questions could be asked and new resources utilized.[40]

Here, again, Hallowell proved a pioneer. The distinctive thing about Hallowell's Rorschach voyages was the almost obsessive methodological care with which he approached the giving of the tests themselves. He had an exacting vision of what was to be done. For him, the Rorschach movement was not a matter of simple application of the standard method but of working in different field sites with a "sense of the desirable mutability of scientific procedure," to borrow a phrase from the work of technology historian Amy Slaton.[41] Flexibility was an active and explicit goal. While "in principle," Hallowell admitted, standardization was a boon and was "basically important," still any final standardization should not be rushed and "must await considerable experimentation with the method itself."[42] Even if some decried the looseness of approaches as shocking—the redoubtable Marguerite Hertz, for one, spoke of the "deplorable lack of uniformity in the administration of the test" in different contexts[43]—Hallowell insisted that rigidity would result and that "rigid schematization in the administration or any other phase of the technique is of doubtful value."[44]

For Hallowell this was the key. Experimentation trumped rote replication, though it did not by any means replace the need for precision, as his much-commented-on exactitude and even-handed footnoting attest. Fifteen years after his test-giving voyages, when Hallowell donated his data sets to be archived within Kaplan's data bank, he stripped them down to include *only the protocols themselves.* Leaving aside his own interpretative schemes, he attached to the data an in-depth essay meditating on method, amounting to a "How To Give the Rorschach" manual, with an emphasis on what could be called a tinkering sensibility. For as Hallowell suggested, "The very flexibility of the Rorschach method as compared with other psychological techniques" was one of the intrinsic features recommending it for use among "primitive peoples."[45]

Among Rorschach stalwarts in U.S. expatriate and native-born psychological circles there seemed to be no minutiae too minute to be examined or discussed, and this detail orientation Hallowell extended to the challenges of the Algonkian wetlands. Throughout

the essay introducing his Rorschach data, Hallowell paid thoroughgoing attention to the "how-to's" of what could be a frankly awkward situation, showing how the tests could be watered down, innovated with, experimented on, altered, or augmented without losing their adequacy. Difficulties uncharacteristic of giving the test in, say, Brooklyn, abounded. Some Ojibwe subjects did not want to take the test, some left in the middle, some said they would come but never showed up, and some appeared actively bored. Upriver, where people did not use timepieces or possess clocks or watches, one could not schedule hourly appointments. Downriver, rumors that the test was "hard" dissuaded some, especially women, from coming, for in Ojibwe society, where women were seen as less capable than men (according to Hallowell), they were sometimes laughed at for even contemplating trying a test that men had already declared to be challenging. In addition, most Ojibwe were not comfortable being alone with an outsider ("Any kind of isolation is foreign to them and even suspect"), yet this was the very first demand of the test situation. For this reason, Hallowell's use of interpreters may have had a secondary advantage, though he did not mention it: company. Likewise, among the Ojibwe who tended to follow "old native patterns," the only moment of complete isolation between men and women was "the sexual embrace," Hallowell observed, and thus finding oneself alone with the anthropologist in his hut might, for an Ojibwe woman, create psychological effects that "colored the background of the Rorschach situation when women were subjects." Daunting as such diversity of experience and subjects might have been, Hallowell took it as a challenge and demonstrated constant willingness to adapt his protocols.

Among Hallowell's most important modifications was the use of an interpreter—actually a series of interpreters, beginning with Chief Berens, extending to his son-in-law, and once attempting to use the children of a Syrian fur trader (ages seven, nine, and twelve respectively), an experiment that proved unsuccessful in getting the other children to be more forthcoming. The interpreter was a role not imagined by Rorschach and not condoned by many of his followers. Hallowell admitted that it was a radical innovation to make in the administrative procedure but a necessary one as his Ojibwe was not up to the job of examining in that tongue. (Most

schools, as well as others of his subjects who had been taught to read, because they only learned "after a fashion" and most had no books in their homes except hymnals or prayer books in the Cree syllabary—no daily newspapers or magazines. Most pictures seen by Indians at the mouth of the river, Hallowell reported, were advertisements of Eaton's mail-order catalogues (the Sears-Roebuck equivalent in Canada) or stray magazines. Experience in the field made it clear that even if perhaps an inkblot could be seen as culture free (more than, say, an expressionist picture of a factory), surely the situation was not. Along these lines, Jules Henry noted that a standard "impersonal test situation," in which a Pilagá test taker, even a child, was expected to sit alone in a room with an administrator he or she did not know for reasons he or she did not understand and obediently take a test that was unclear at best, might be entirely normal in Western cultures, yet "the native has no experience of this kind."[59]

Feedback and pushback from participants caused Hallowell (and other Rorschach researchers, to greater or lesser degrees) to make further modifications. There was a distinct quotient of resistance observed in some subjects. Often the tests were unpopular, a fact that their bearers sometimes reported and sometimes did not. In retrospect, reflected Hallowell's student Anthony Wallace in 2013 of his Rorschach studies in the 1940s, "Many Tuscaroras did not appreciate being studied in this way." Ulithian islanders in the Western Pacific displayed a "dyspeptic reaction to the cards" when anthropologist William Lessa administered them in the mid-1950s.[60] Other subjects poked fun, as when some Menominee nicknamed the Rorschach-centric George Spindler "Doc Psyche" and joked of a notorious local drinker that he "should have seen a bottle in them cards" if the test were any good.[61] When two anthropologists scrutinized the Rorschachs of Tepoztecan subjects in the late 1940s and found a distinct "lack of friendliness and co-operativeness of the people," the possibility arises that this unfriendliness may have been a response to the test itself.[62] Yet the test was not always deemed unpleasant, and some found it enlightening (as did an Alorese seeress, a Menominee peyote worshipper, and an elderly Manitoban medicine woman), while others found it beautiful, as did Wannatcos, an upriver Ojibwe man who exclaimed,

"Must have been a wonderful man who made these cards—so many animals but not just like those we see running around."[63]

Often Algonkian people saw dreams or dream-like images in the inkblots, though sometimes they were loathe to reveal details because it would dilute the dream's potency. In Ojibwe social life, dreams were of central importance, so important that when a person had a "big dream," he was under pains not to reveal it if he wanted it to work. A sixty-five-year-old hunter-trapper at Little Grand Rapids Indian Reserve saw Card V and said it reminded her of horns, legs, arms: "An Indian dreams this one." She deemed it a "pretty good" card and said, "[I] can't name it"—that is, she had never herself encountered the creature in a dream—"but I know it."[64] Card I caused a forty-plus-year-old man named Naman to narrate a dream from his boyhood in which he saw the same shape but with four legs rather than six. In the dream, he found himself on an island in the middle of a lake, where he saw the thing that lived there, entered its house (it talked like a human being), and answered its demand for eight kinds of sacrifice. In return, his children were protected—none had died in the succeeding years—and he himself was "never sick yet in my life."[65] Others saw visions they had once had fasting or revisited prophetic states when handling the cards. A Menominee peyote worshipper, Case 26, commented, "You know, this Rorschach . . . is something like peyote in a way. It looks into your mind. Sees the things that aren't out in the open. It is like that with peyote. At a meeting you get to know a man in a few hours better than you would get to know him in a lifetime otherwise. Everything about him is right there for you to see."[66] To him, it was recognizably a revelatory instrument.

The giving of the test intersected in a local economy of dream exchange. Ojibwe placed great emphasis on remembering and valuing all kinds of dreams from the garden variety to the vision dreams, in which the dreamer met his *bawaaganak* (dream visitor from which blessings come). Although most Ojibwe dreams were supposed to be shared with others and reflected on, certain visionary dreams—acting as "charters"—were not to be explicitly told but could be the subject of guesses and conjectures among kin and neighbors. For a people so dream-centric, the act of dealing in dreams was fraught with significance. Telling formative dreams to a

visitor was a choice some made, as Jennifer Brown has described the Ojibwe dynamic of dream divulging. Fair Wind, a prominent Ojibwe priest during the years Hallowell visited, refrained for two decades from reciting his vision-fast dream; then at a Drum Dance in the 1930s, when he was blind and in his eighties, with Hallowell in attendance, he publicly declared it. And perhaps it was akin to a gift, for telling a strong dream rendered it powerless to protect the dreamer further if the dreamer still believed in its potency. (Likewise, a dream might be told if it had gone badly wrong. A man named Birch Tree told of a dying young man of his acquaintance who had dreamed too ambitiously: one night, he was able to see "every leaf in the whole world" and perished soon after, like the leaves that fall from the trees each year. This was to serve as a lesson that "it is better to dream of many things than too much of one thing.") Chief Berens, as a Methodist, declined the offerings of his dreams—which were full of creatures such as small magical beings who lived in rock cliffs and who vied to grant him special powers such as strength or the ability to dodge bullets—but was happy to pass them on to Hallowell. Another subject, when asked by Hallowell whether he had held back anything while taking the Rorschach test, said to him, as Hallowell noted parenthetically, "Yes—will tell me later. Refers to dream i.e., supernaturals. Asked him later about this but he would say nothing."[67]

Where people's responses to the test fell in the scale between delight and resentment often had to do with the preexisting relationship (or lack thereof) between the test giver and test taker. At other times, the test played into long-standing geopolitical rivalries: on the atoll of Ifaluk in the Marshall Islands, anthropologist Spiro offhandedly mentioned that similar tests (the Rorschach, TAT, and a few others) were being carried out in the Caroline Islands; the remark caused his interpreter, Tom, to conclude that if Ifalukans did well on the tests and outperformed the Carolinians, they "would be more high"; if not, they "would be more down." The next day, conveniently for Spiro, the chiefs called a meeting to encourage full-bore cooperation, and as a result he gained an almost complete data set. Noticing how technologies change via their travel and use, we see that the Rorschach was not simply imposed from on high (or not entirely so) but that there was a certain


image
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Smallness itself represents interiority and secrets, as John Mack points out in *The Art of Small Things:* "Engagement with miniature worlds is a secret and often intensely personal activity."[13] Yet the point with regard to the technique Dancer inaugurated is that it was not only about the very small. Rather, it was about the constant possibility of collapsing and expanding on a scale. For Hooke, the flea's bodkins figured both as minuscule armor bedecking an ephemeron and also, via the microscope's view, something that created a large and imposing effect: a paradox. Dancer, who incorporated microscopes at both ends of his operation, took this concept further. In the realm of knowledge-seeking, the microphotograph represented a secret, private sphere but also the constant structural possibility of re-expansion into the shared and public realm of knowledge and delight.

Novelties and keepsakes fueled the growth of microphotography in the 1850s and 1860s, as the hunger for enchanting miniatures raged within the love of tourist goods and memorabilia. Why buy a full-size clock or crystal figurine when an adorably shrunken one will do? is a question still asked today and answered in dollars, krone, or yen in major tourist centers.[14] Dancer, by this time thriving financially, exhibited his tiny photos, each one "contained in the space of the eye of a needle," in 1857 in Paris and later in Florence and Rome, where they caused a sensation.[15] One spectator, a forty-year-old chemist and photographer who owned his own portrait studio, René Dagron, was moved to create a variation. He modified a small "Stanhope" lens from biconvex to plano-convex, making it flat on one side so that he could cement a microphotograph to the end. Now, instead of buying a souvenir slide, one could buy the slide with a built-in viewer. This was the first of many such viewing devices for microfilm. (Micro-readers would prove a problem well into the twentieth century, when "the limitations of reading machinery precluded an unmitigated success" for the data-storage technologies then debuting.)[16] Dagron equipped rings, watch fobs, watch-winding keys, penholders, small-scale ivory globes, and wooden toys with such lenses and micro-slides. Soon one could look into a peephole in a violin bow to see a miniature of Paganini perched inside (this innovation by an imitator of Dagron). His lab was employing a

workforce of 150 and selling twelve thousand magnifiers a week. Ingenious tchotchkes along these lines, called Stanhopes or *bijoux photomicrographiques*—photomicrographic jewels—continue to be avidly collected as Victoriana. A 1864 booklet by Dagron, *Traité de photographie microscopique*, explained the process step by step to hobbyists, and in the same year Dagron devised his most powerful lens yet, through which a viewer could see, on a photograph the size of the head of a pin, the portraits of 450 men, "*députés de l'empire*." Dagron prospered.[17]

Just as the microscopic photograph appeared destined for a permanent career of pleasure-mongering and frivolity, with the 1858 *Dictionary of Photography* labeling the process "somewhat trifling and childish" and other onlookers decrying the dead end of toys, it found more urgent use during the Franco-Prussian War.[18] In the autumn of 1870 Paris fell quickly, the Maginot Line proving unsupportable (as it would in a future war), and by September 18 the city found itself blocked behind Wilhelm I's "ring of steel" from receiving or sending normal mail or telegraphs, as well as food. Even as residents sacrificed Castor and Pollux, the celebrated elephants of Paris's zoo, and accustomed themselves to eating cats, dogs, and rats, citizens of the city made bold and experimental attempts to send out illicit texts. Postmen concealed coded letters in hollowed out coins and even in their skin, in tiny cuts, but only eight got through, and some of those caught were executed. After a series of further failures sending volunteers out through the sewers and subterranean catacombs and sending a boat to crawl along the bottom of the Seine, engineers hit upon the idea of balloons, which proved more successful and, incidentally, led to the founding of the first airmail service in the world. While 23,670 pounds of mail sailed out of Paris, the balloons could not carry any back in.

The air having proved the most amenable element thus far for reestablishing communication links, several elite pigeon clubs in Paris proposed sending their birds as emissaries to make the journey *into* Paris. The birds would travel out in balloons, rest and preen, then return to the city bearing mail, messages, and news. Since each bird could carry only around a one-gram parcel, a method needed to be found to increase the load of information

without increasing the weight. "A number of persons, apparently simultaneously, thought of reducing the original, uncoded messages by photographic means."[19] Two professors, Joseph-Charles d'Almeida and Albert Fernique, set up a laboratory to work with the state-of-the-art equipment furnished by Dagron, who remained the outstanding microphotographer of Paris. Enthusiastic about the challenge, Dagron came up with the ideal printing surface—not paper but a dry stripping film of collodion, which was light, tough, flexible, and transparent. Here entered microfilm in a new role: pigeons could carry high-density microphotographic messages rolled up in hollowed-out goose quills. A pigeon handler sewed each quill with silk thread into the carriers' tails. Their wings, stamped with waterproof ink, specified their destination and other delivery information.

First, however, the microphotographic equipment had to be smuggled out of Paris. The likely dispatch spot was Tours (later another center), which had become a wartime communications hub, as it was the provincial city in Free France that lay closest to enemy lines. There, a central facility collected all of Free France's messages, and expert penmen began by reducing them to tiny code, which unfortunately was often illegible due to the imperative for tininess. On November 12, almost two months after the official start of the siege, Fernique, Dagron, and their assistants started out from Paris by balloon to land in occupied territory near Vitry-le-François. A deadly game of avoiding the Prussians ensued, but in a week the group at last made it to friendly territory with 1,300 pounds of heavy equipment in tow and "under the very noses of the enemy."

The new arrivals established a sort of mass-production center—or perhaps mass-reduction is more accurate, for it was there in the provinces that Dagron improved his method to allow assembly-line photographing of large plates of printed materials (the penmen were eventually dismissed) and, exposing them in a chemical bath, render them as "sheets."

Meanwhile, pigeon clubs pooled birds for heroic flights. Around four-fifths of a total 350–400 avian messengers died in the line of duty, either disoriented by the longer-than-usual flights, disabled by the cold weather, or brought down by specially trained falcons from Saxony—"Nineteenth Century Messerschmidts flashing

down on liaison Piper Cubs," as one scholar envisioned it[20]—but the rest survived and returned to Paris replete with messages. One, Cher Ami, was immortalized in a civic statue designed by Frédéric Auguste Bartholdi (sculptor of the Statue of Liberty), only to be de-memorialized when the Germans took Paris in World War II and melted down the avian accolade.

How to get the information off the sheets? At first telegraphists with magnifying glasses set to decoding the contents, but later the Parisian recipients rigged a projective machine akin to a slide projector so that a corps of clerks could more easily read messages and transcribe them. When the hand-copied or printed duplicates arrived within the occupied area, workers stamped the regular telegraph forms "*Reçu par pigeon*."[21] Dagron "in 1870 used a small oil-burning projector to read his microcopies," recalled a prominent librarian in 1936 of the historic accomplishment of the modern librarians' forerunner, invoking it as an inspiration to the Microcard movement that was then getting going.[22]

Some years later, the nanotech movement's founding document was to make a surprising link that on second thought may not seem surprising. On December 29, 1959, at Caltech, physicist Richard Feynman gave a talk titled "There's Plenty of Room at the Bottom," in which he launched the debut discussion of all that physicists and information scientists could eventually do in the "nano" fields. Although this visionary talk, later a tract, took a forward-looking gallop at the field, it began by looking back, posing a hypothetical problem with a real history. Feynman had been told, he recalled, that someone had years before already printed the Lord's Prayer on the head of a pin. (That someone was Dancer, of course.) This feat made Feynman think: could you print the entire *Encyclopedia Britannica* on the head of a pin—presumably a different pin? Yes, he answered, if you shrunk it down twenty-five thousand times. You could use an electronic microscope to read it then. In fact, you could surprise the Caltech librarian by telling her that "ten years from now, all of the information that she is struggling to keep track of—120,000 volumes, stacked from the floor to the ceiling, drawers full of cards, storage rooms full of the older books—[could] be kept on just one library card!"[23] As we have seen, this was not a new problem in 1959. The rhetorical use of shocking scalar reductions

Tate, for example, initiated the new run of the institute's journal not with a World Brain or Mundaneum but with a phlegmatic repetition of the standard international definition of documentation.) Major figures Tate, Eugene Power (see below), and Watson Davis were gadget-centered visionaries. University of Chicago librarian M. Llewellyn Davies compared the arrival of microtechnologies to that of the printing press. During this heyday for micropublishing, the *Journal of Documentary Reproduction* was born and from 1938 to 1942 regularly kept its readers abreast of developments. Microform became the leading-edge information-storage and -retrieval technology of its day: "The literature on documentation in the 1930s was as preoccupied with microfilm technology as it is now with computer technology and for the same reason, each being the most promising information retrieval technology of the time," observes historian of libraries Michael Buckland. Vannevar Bush, inventor of the imaginary Memex machine (he thought it up in the 1930s, though he did not publish his account until 1945—see chapter 9 below), actually built microfilm-based reading machines before the war and experimented with adding punchcards to microfilm to allow targeted retrieval.[34]

Machines for reading, projecting, collapsing, and expanding texts arrived in the 1930s from research and development labs to the marketplace. Devices such as the Fiskoscope were basically super-lorgnettes made to read special dedicated Fiske Reading Strips, long pieces of paper approximately the size of a current grocery receipt from a week's worth of groceries, covered with tiny print. Other clever devices innovated with different phases of what might have been, but was not yet called, the human-text interface. These mutable machines, many of them short-lived exotics, form part of what might be called, following Jon Agar, the "history of peripheral technology."[35]

Worried librarians embraced microphotography apace. Styles of microphotography formats multiplied in the United States, Great Britain, and other parts of Europe. Reading machines proliferated. Engineers experimented to make various microforms searchable. Bush's Comparator and Rapid Selector machines were only the most prominent of a number of failed attempts at searchability.[36]

organization called the Interdepartmental Committee for the Acquisition of Foreign Materials (IDC), a rescue mission under Wild Bill Donovan's Office of Strategic Services (OSS) started up. A corps of 150 agents and librarians set up a massive microfilming operation in neutral cities from Lisbon to Stockholm to New Delhi. Rigging together microfilm operations on the fly, interviewing refugees, interrogating prisoners of war, they sought out imperiled books and other forms of publications (such as rare single-run presses and underground newspapers). They funneled relevant information from on-the-ground texts—often literally on or in the ground, as they found stacks of books hidden by the enemy in caves and limestone pits, piled up haphazardly, or abandoned by fleeing Jewish families—and preserved them in tiny, tough format.[42]

In May 1941, the British Museum library calamitously lost a quarter of a million volumes in one night of air bombing. This loss dramatized the fact that collections could vanish while people slept or were herded into basements for air raids. Microfilm's role was to make textual rescue efficient and the materials lightweight. Eugene Power's firm, working with the OSS team on the project, and with the aid of a Rockefeller grant, photographed and microfilmed some 6 million pages of manuscripts in British depositories—making the irreplaceable in effect replaceable. (In 1978 the British ambassador to the United States knighted Power in Michigan on behalf of the queen in appreciative if somewhat inappropriate terms: "We in Britain," he said, "will long remember, with a deep sense of gratitude, his gift of Lebensraum for so many of our precious archives and libraries.")[43] Meanwhile, "the war put this technology to the test."[44] It started with a trickle in 1941, when Wild Bill Donovan thrilled to the sight of the first feet of microfilm arriving, and continued through the middle years of the war, when reels flooded official Washington. During the eight months from November 1942 to June 1943, the IDC microfilmed nearly eighty-two thousand published items, collected over twenty-three thousand original publications, and distributed nearly three-quarters of a million items to a variety of war agencies. This "massive microfilming effort" preserved many publications that would otherwise have disappeared from the human record, including obscure journals with small print runs, underground newspapers, and resistance pamphlets. Yet much


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available