Expanding Mindscapes

A Global History of Psychedelics

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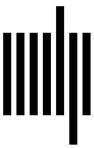

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6 EARLY EXPERIMENTAL LSD CULTURES IN THE CLINIC

Magaly Tornay

From its very beginning, when a drop of LSD-25 permeated the skin of Albert Hofmann's fingertips in Sandoz laboratories in 1943, the substance has been a negotiator of boundaries. Symbolized by Hofmann's bicycle ride, the first intentional trip with the mysterious drug, it has since stood for journeys into unknown realms, expanding limits, and subverting authority. In its early history, however, it initially reinforced a demarcation that is central to modern societies: the one between normal and pathological.[1] It was not until the 1960s that LSD became a political substance filled with subversive potential. In the two decades prior, it had been used to study differences between healthy and ill, body and mind, and subjective and objective.[2]

This chapter analyzes early practices of meaning-making around LSD in the clinic, a crucial site for negotiating the normal and the pathological. During the second half of the twentieth century, these categories became increasingly flexible and disputed in psychiatry, culminating in the anti-psychiatry movement of the late 1960s. Psychiatric clinics are closely intertwined with the history of hallucinogens, and not just in terms of clinical trials on patients. In Switzerland, some institutions were also involved in several stages of the production process, such as harvesting rye and sorting ergot for Sandoz.[3]

It was also in these psychiatric settings that most early experiments with LSD and psilocybin were conducted on healthy subjects, such as chemists, laboratory personnel, students, artists, musicians, and writers, temporarily expanding their subjects beyond the usual nurses, patients, and physicians.

Figure 6.1
Patients sorting ergot from rye. Retirement and nursing home, Bärau, Switzerland (1971/1972).
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Unlike private self-experimentation, the psychiatric setting provided credibility, appropriate methods, and access to tools such as Rorschach tests and audiovisual recordings.

It seems necessary, then, to rethink the concept of the clinic as a closed or remote entity for it to emerge as a site of everyday life, in line with a practical turn in the historiography of psychotropic drugs and the clinic.[4] The site of analysis is hence the clinic in a broader sense, reimagined as a crucial node of an intense but unequal exchange of material, knowledge, and meanings. The case of Switzerland is particular since it was here that LSD first found its way into psychiatry through personal connections. The links between the Swiss pharmaceutical companies and many of the larger clinics, notably in Basel and Zurich, were exceptionally close. When Sandoz began testing new ergot drugs for possible therapeutic use in the 1930s, a system was set up whereby the company temporarily paid the salary of an assistant doctor. Thus, psychiatric clinics became laboratories of sorts, springing into action shortly after a new compound left the firm. From these close interactions

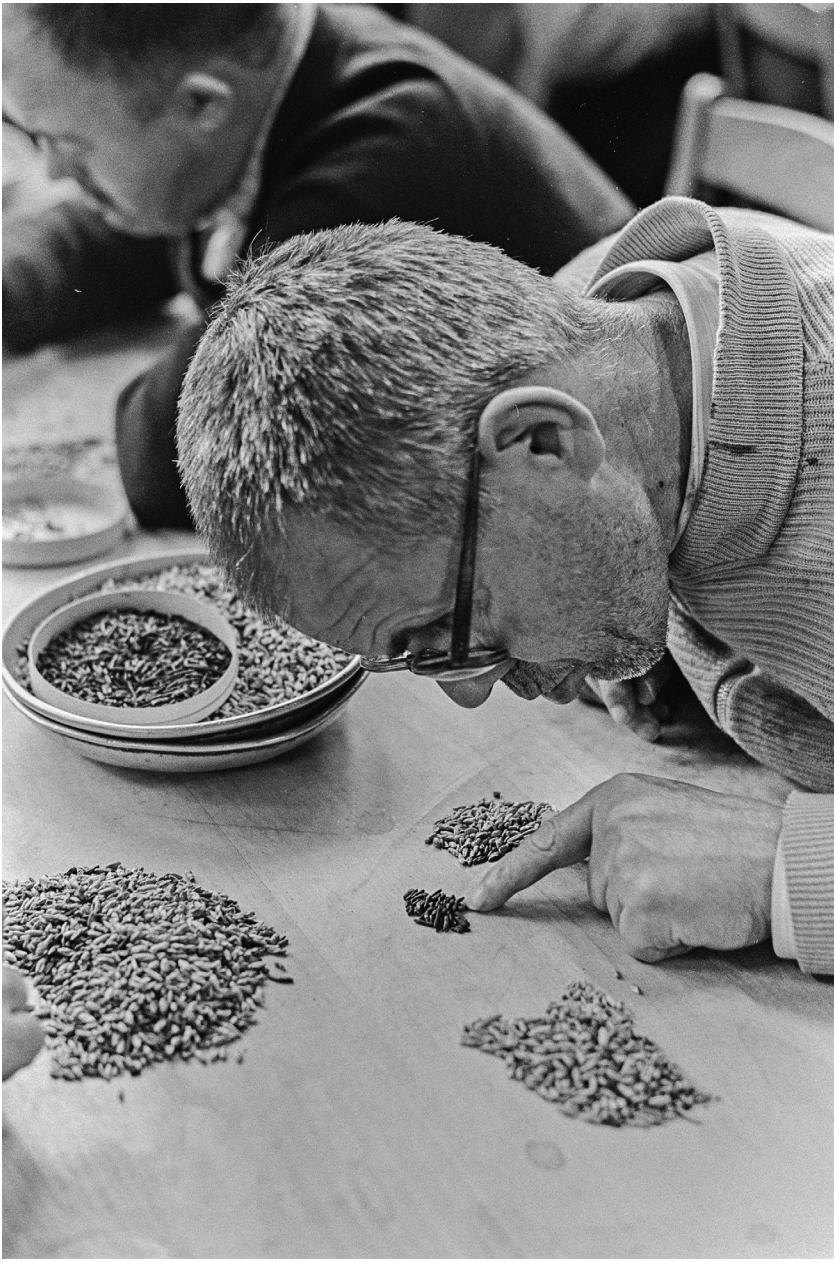

Figure 6.2
Patients sorting ergot from rye. Retirement and nursing home, Bärau, Switzerland (1971/1972).
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between the clinic and the industry, an experimental culture emerged that eventually transcended its boundaries.

The early history of hallucinogens in Swiss clinics shaped narratives that proved influential: the analogy of LSD intoxication with psychosis, the biochemical basis of the psyche, and the first conceptualization of LSD as a subjective substance. But to enter the clinic, LSD had to transcend it. It was framed not only as a possible drug for patients by Sandoz, but also as a substance with the potential to turn the clinical order on its head—a drug for the doctors themselves.

ENTERING THE CLINIC

Before LSD became an imagination-sparking "*Phantastikum*,"[5] it had to be introduced into the clinic and reinterpreted accordingly. Albert Hofmann had first compared its effects with Pervitin, a methamphetamine, which as a stimulant provided him with a contemporary interpretative foil (see chapter 9). The transcendental aspects (namely, the demons that took hold of him) actually emerged only in his later retellings of his first intentional self-experiment on bicycle day.[6] The clinic added new registers to these interpretations.

LSD entered the clinical scene through a personal connection at Zurich's prestigious Psychiatric University Clinic, Burghölzli. The first LSD experiments were conducted by Werner A. Stoll (1915–1995), a young psychiatrist in training, and the son of Hofmann's boss, Sandoz director Arthur Stoll (1887–1971).[7] The company had been trying to find a way to test the new substance on "the only suitable organism, the human" for a while.[8] They had already been testing another ergot substance used to ameliorate against migraine headaches at the clinic, and in December 1945, they started paying Werner a monthly salary of 625 Swiss francs to test LSD.[9]

In February 1947, he sent a letter from his vacation in the Swiss mountains to the director of the Burghölzli, Manfred Bleuler (1903–1994), announcing he was ready to "finally send [his] LSD-work."[10] In his resulting article, he reclassified the substance as belonging to the "*Magika*" or "*Phantastika*," stressing its imagination-sparking, even transcendental properties: "It transports the subject into a magical world" and "gifts him

supernatural powers and overwhelming experiences inaccessible to his mundane surroundings."[11] What later became one of the main strands of LSD interpretation—its revelatory, spiritual, and transcendental aspects—appeared in these notes for the first time.

More important, however, were observations by the younger Stoll that effectively anchored the new substance in psychiatry. He interpreted the experiences through his own professional lens and described them in psychopathological language: the subjects who took LSD fundamentally experienced a psychosis triggered by a substance he classified as "toxic" and called a "trace substance."[12] The observation that LSD led to temporary schizophrenic states in effect renewed interest in investigating the core of mental illnesses using hallucinogens—model psychosis research. Although this had already been pursued with mescaline, it gained new momentum precisely because LSD was a trace substance and very potent in small doses, which made it a "precision tool," unlike earlier substances that were thought to flood the system.[13]

Stoll also found that LSD had only very weak effects in psychotic patients, while "profoundly transforming the normal psyche with a few hundred thousandth of a gram."[14] This finding introduced an essential distinction between healthy and ill, and LSD promised to be a tool to make that demarcation firmly. An initial series of pretrials had been conducted by Sandoz staff and unspecified doctors, presumably at Sandoz and Burghölzli. Stoll then began his actual trial with sixteen supposedly "normal" subjects and six schizophrenic patients. Psychological tests, such as the Rorschach, were performed only on the healthy subjects. The so-called normal cohort consisted of chemists, doctors, laboratory workers, technical staff, and clerks, "all well versed with scientific observation," numbering eleven males and five females. Since Stoll thanked the members of the pharmaceutical division at Sandoz for their "daringness towards this little-known substance," it likely consisted of Sandoz employees and Burghölzli doctors again.[15]

Besides general difficulties to find words for what they experienced, three lines of interpretations were salient: a suspicion of technology, a scientific outlook, and an aesthetic sensibility. Hofmann, for one, experienced an estrangement from the laboratory and saw the "ugliness of the technical

world" and the "useless activities" of his colleagues "in white coats."[16] The setting itself became overly characterized as ugly or distracting; some subjects also experienced the psychological tests as meaningless. A senior chemist reported seeing apparatuses and "Benzene rings everywhere!" without any estrangement. A third subject introduced literary and artistic references and felt "at one with all romantics and fantasists; I thought of E. T. A. Hoffmann, saw Poe's maelstrom . . . reveled in the colors of the Isenheim Altarpiece, felt the exhilaration and sublimity of an art show. . . . I seemed to grasp [abstract painting] for the first time."[17]

The trials with patients were "sparser and less colorful," in Stoll's view. They were evenly split in terms of gender and consisted of a pupil, a housewife, an au pair, a farmer, a student, and a debt collector; in all cases, previous therapies had shown no success. Since these subjects were not "scientifically literate," Stoll explained the disappointing results by their suspected lack of interest and the symptoms of psychosis, which may have prevented a clear recounting of the drug effects.[18]

However, the debt collector clearly distinguished anything he saw with LSD—"beautiful colorful rainbow pictures"—from his tormenting nocturnal visions, undermining the soon-to-be-prevalent analogy of psychosis and LSD intoxication.[19] Although Stoll acknowledged this, it did not challenge his hypothesis linking LSD and psychosis. The setting of this first trial—with one cohort described as scientifically literate and "normal," the other as illiterate and pathological—left the door wide open for confirmation bias. The differences in methods, including psychological testing and self-reports for the healthy cohort, as well as physical measurements and observation for the patients, reinforced these other differences.

Stoll nevertheless argued that his findings directly "led to central problems in psychiatry," notably the difference between the normal and the pathological psyche, highlighted by LSD.[20] Thus, he not only opened the way for LSD to become a Phantastikum (i.e., a transcendental, supernatural magic drug), he also brought into play a contrary line of thinking that cemented distinctions between normal and pathological and introduced a psychopathological language to describe the LSD experience, laying the groundwork for further research at Burghölzli.

Manfred Bleuler, whose father Eugen (1857–1939) had been director of the Burghölzli, where he famously coined the term "schizophrenia," reacted with enthusiasm to Werner Stoll's report.[21] He immediately asked Sandoz to continue these "interesting experiments," particularly to find out "whether the metabolism of psychotic and non-psychotic people is different after ingesting LSD."[22] Picking up on Stoll's description of LSD as a trace substance, Bleuler brought the body into play. Since the reactions of patients and "normal" subjects were so different, he reasoned, it might well be that mental disorders have a physical cause.[23] A possible key seemed to lie in LSD, which was surprisingly associated with the body more than the mental sphere at that time.

He wanted to pursue two aspects in his clinic: use LSD to explore the differences between psychotic and healthy people, and examine its use as a "shock treatment" for patients, inducing "hallucinosis" and "euphoria," with the shock potentially changing the course of the illness.[24] Bleuler's own euphoria about the substance's potential for research persisted even after Stoll was no longer available for further trials, and he became personally involved in LSD experiments more intensely than previously suspected. In the spring of 1947, Bleuler tested LSD on three cases of severe hallucinosis, suspecting a sedative effect if given in smaller doses. "The experiment was entirely negative," he reported to Sandoz, abandoning this low-dose approach for further embracing trials with higher doses "in the sense of a shock therapy."[25]

Stoll was replaced by Gion Condrau (1919–2006), an assistant doctor, despite concerns about his tendency to be "done with his scientific tasks a bit too quickly."[26] His project was to determine any differences between healthy and psychotic subjects and to test LSD as a "psychic retuning" similar to insulin shock treatments.[27] However, he experienced difficulties gaining consent for this "unconventional therapy"; the negotiations with patients or their relatives proved to be "very time-consuming, tedious and lengthy."[28] Sandoz reassured him that "nothing unpleasant was to be feared" from this substance, possibly marking a departure from Stoll's first trials, which, as

Bächi notes, were likely conducted without proper consent, "disguised" as an unspecific new form of shock treatment.[29]

Sandoz continued to pay 550 Swiss francs monthly for the trials until mid-November 1947, when Condrau's work was done, seamlessly transitioning to paying Werner Stoll for an article that he was planning on the Rorschach tests.[30] Ernst Rothlin (1888–1972), the head of Sandoz's pharmaceutical division objected to Condrau's description of the substance as "unspecific"; to him as a pharmacologist, it was really anything but. He also expressed bewilderment at the use of the term *vergiftung* ("intoxication"), pointing to differences in the approaches of psychiatrists and pharmacologists around the category of the toxic.[31]

Especially striking were Condrau's findings with respect to subjects who received LSD without "appropriate preparation" (i.e., without their knowledge).[32] Some of the "normal" subjects (of a total of seven, including one self-experiment), mainly consisting of assistant doctors, were given the substance "blind," in their morning coffee or tea. All healthy subjects followed their normal routine and reported increasing difficulty fulfilling their normal tasks—"unable to find two telephone numbers in the directory," they lost interest in office work and any motivation at all, "walking around the office without doing anything" without even being bothered by it. A doctor reported, after unwittingly having drunk LSD-spiked coffee, feeling as if under a "glass bell jar" (an apparatus used in laboratory experiments) and thinking "quite indifferently that I might have gone mad."[33]

The results with the patients were again rather disappointing. Even though Condrau used relatively high dosages (up to 280 μg), he could not observe any new mental states. Their hallucinations, he said, were embedded in their usual hallucinations and could not be distinguished as a specific LSD effect. This finding led him to theorize that patients—in his case, no specific diagnosis was selected—had some kind of resistance to LSD because they already had a similar substance present in their body, again paving the way for a potential metabolic basis of psychosis.[34]

However, the difference between normal and pathological was inscribed in this setting from the very beginning. While the healthy subjects wrote their own protocols, patients were denied the opportunity to provide a

first-person report, not least because they were presumed to have reduced language capacities. The self-reports of medical personnel were evaluated in detail, but with the patients, Condrau recorded mainly vegetative reactions and neurological symptoms using clinical observation and measurements. Reliable witnesses for these LSD sessions were only the dosed medical staff themselves, wandering around their work environments and observing themselves, and Condrau himself, trying to detect the effects of the drug on the patients' bodies, but not how the patients were experiencing the effects themselves.

The scene at Burghölzli in the late 1940s had in a sense become quite paradoxical: doctors walking around tripping, unable to perform their duties, perceiving their colleagues' heads as small as a pea or huge as a melon, indifferently thinking that they might have gone mad—from the outside, they may well have. The patients, on the other hand, behaved as they usually did and were the only ones able to clearly distinguish between what they experienced on LSD and their normal hallucinations. In retrospect, they somehow seem abler—and more literate—when making sense of this new substance.

VARIATION AND PERSONALITY

This closely interwoven group of actors from Sandoz and Burghölzli successfully introduced LSD to the human, leading to its reinterpretation as a phantastikum and a tool for delineating the boundaries between the normal and the pathological—even if, in the process, the psychiatrists themselves felt temporarily mad. Sandoz then introduced another aspect by asking the Burghölzli to investigate LSD by using it as a "personality test," since those who have experienced it themselves "are likely to attach particular importance to this aspect."[35] Personality tests of various types had long been used in psychiatric settings, and LSD appeared to bring to light even more aspects of a person than the psychotic or nonpsychotic state.

This line of research revealed new methodological challenges. The main method used to investigate LSD as a personality test was the Rorschach test—itself a personality test. This projective test had already gained traction for its perceived ability to render an objective image of the self through

associations on a series of inkblots.[36] Projective techniques such as the Rorschach test have been described as "X-ray-like tools" of postwar technicism, designed to capture, measure, and ultimately make machine-readable the elusive parts of the human condition: dreams, hallucinations, fears, or altered internal states.[37] These instruments of a science of subjectivity generate evaluable information about inner states, with the advantage of focusing neither on behavior alone nor self-reports.[38]

With hallucinogens, the experimental setting became strangely doubled, with LSD and the inkblots both potentially providing a window into a subject's personality. But what was actually shown in the results? Was it the effect of the drug under investigation or the personality of the test subject? Or even traces of a disorder that had not yet broken out? And was LSD able to reveal the true nature of a personality under exceptional circumstances, hidden in everyday life?

Bleuler, who along with a colleague had already used mescaline in this way, noted similar difficulties in determining what was actually shown: Was the true self the one with or without drugs? "Which of the two formulations of the personality corresponds to reality?"—the one shown in the Rorschach before or during a trip? To the researchers' surprise, a Rorschach test taken without drugs gave a less truthful picture of the personality than the mescaline one: sober, only the subject's "distrust of his own originality," "exaggerated self-critique," and "extremely severe self-control" were displayed; inhibition fell with mescaline to give a "truer," less veiled image of the self. Personality, they concluded, must thus be a more flexible, multilayered category than previously thought.[39]

Condrau, describing LSD as a similarly revelatory tool, theorized that the substance provided a "caricature" of personality by exaggerating existing traits. In psychotic patients, for example, it seemed to intensify their specific form of schizophrenia.[40] The characterization of LSD as an amplifier of what is lingering or hidden brought a diagnostic use into view. It could potentially confirm diagnoses, predict future illnesses, or merely paint a portrait of someone with strokes that are slightly too thick.

Werner Stoll, in contrast, was opposed to drawing conclusions "from exceptional circumstances." He gave an example of a craftsman who, in

alcoholic stupor, demolished his apartment and consequently behaved in a manner contrary to his authentic nature. This made LSD unsuitable as a personality test because it turned normal behavior into its opposite. In his view, intoxications were, after all, exceptional, even pathological states contrary to the true nature of most people.[41] In his 1952 article on Rorschach tests, Stoll emphasized individual differences and fluctuations; in his view, clearly defined personality traits ("abstractions") were not obtainable by observing someone on LSD. It was precisely each individual's subjective differences that became salient with this substance—the "variability" in humans. He conceded that the substance might serve to unveil a hidden potential in a person by loosening repression. But to Stoll, it still seemed wrong to believe that LSD would reveal one's true personality—in his eyes, normal was only ever a sober state.[42]

The underlying idea of normalcy was still strongly tied to a concept of everyday life, with pathologies as preformed, normative, and stable entities that could be clearly distinguished from normal. This categorization began to change in the 1960s when psychiatry was challenged politically and normal and pathological became increasingly seen as continuous and flexible categories.[43]

Not long after, a new psychodynamic interpretation came to the fore in Zurich: Gaetano Benedetti (1920–2013), then a doctoral student under Bleuler and later a psychoanalyst at Burghölzli, made a singular LSD case study with a patient diagnosed with alcohol hallucinosis (i.e., hallucinations caused by alcohol) in the early 1950s. The Rorschach protocols before, during, and after administering LSD showed, according to Benedetti, an astonishing change: "A 'new' man meets us here." The patient had a profound experience under LSD and reached a turning point in his life: "The die is cast and a new life has begun." Here, LSD was interpreted as a cathartic agent: during his intoxication, the patient had gone through his entire biography again and in "triple repetition."[44] Benedetti drew an analogy between the LSD trip and his patient's life story, which had a healing effect by intensifying the same themes. He reimagined LSD as a door opener to the unconscious not only of patients, but of everyone—after all, in contrast to psychiatry, psychoanalysis considered all people in need of therapy.

SCHIZO-URINE BETWEEN THE CLINIC AND THE LABORATORY

While the Burghölzli psychiatrists began to acknowledge the immense variability of the LSD experience, questions concerning the normal and the pathological remained unsolved. Another path toward it had already been laid out: the idea that the psyche might be biochemically steered. This idea opened up another field for LSD to perform its boundary work and brought into play another pair of opposites: the age-old mind-body problem, contrasting the two fundamental constituents of mind and matter.

Albert Hofmann framed the problem as material versus spiritual when he referred to his later problem child as almost-non-matter. He described LSD as a go-between from the material to the spiritual world and vice versa. As he wrote to the German philosopher Ernst Jünger, "the effect of magic drugs happens at the borderline where mind and matter merge . . . these substances are themselves cracks in the infinite realm of matter, in which the depth of matter, its relationship with the mind, becomes particularly obvious."[45] It was precisely its extraordinary potency in extremely small doses that led Hofmann to conceive of it as almost immaterial substance: LSD's effects on "purely spiritual or psychological regions," he wrote, may also explain why "almost no matter is needed, that is, why LSD is effective in such incredibly small doses."[46]

Hofmann had opened a space of ambivalence between the material and the immaterial. His research partners in Zurich and Basel, on the other hand, set out to investigate it in a more robust and materialistic way. In the process, they set in motion a wholly different flow of matter, which further expanded the clinical world toward the animal kingdom.

In 1953, as Hofmann was working on the full synthesis of LSD, researchers from the Psychiatric University Clinic of Basel (then called Friedmatt) shipped over 50 liters of patients' urine to the Sandoz laboratory. More would arrive, not only from Basel, but also from Burghölzli and several smaller asylums.[47] LSD was not entirely new to the Basel clinic since its director, John Staehelin (1891–1969), a member of the editorial board of the *Swiss Archives of Neurology, Psychiatry and Psychotherapy*, first read a draft

of Werner Stoll's 1947 article and wanted to test it as well.[48] In close collaboration with the Zurich clinic, the Basel group had started investigating the biochemical basis of schizophrenia mediated by LSD in 1948. They were looking for an LSD-like substance, organically occurring in the body, which might be triggering psychosis, unknown but equally potent and almost undetectable. Hofmann's task was to help the team by distilling and fermenting the urine of schizophrenic patients to detect traces of this anticipated unknown substance. Even though urine has a long history as a research material and medical resource, such as a healing fluid or an indicator of human health, it had so far been considered mainly a "window into the body," not into the mind or psyche.[49]

On the one hand, the different reactions to LSD from healthy and ill subjects seemed to support the idea that a similar substance already existed in the bodies of psychotic patients, continuously causing "bad trips" and explaining their weak reaction to the drug itself. On the other hand, and in contrast to earlier hallucinogens, the high potency of LSD gave hope that an equally invisible, odorless, and barely traceable substance exists but had just not yet been found. Although not new, this autotoxin hypothesis gained traction precisely because LSD was considered a trace substance.[50] Furthermore, LSD found an important ally in chlorpromazine, the first antipsychotic introduced into psychiatry in the early 1950s.[51] It seemed not only to "heal" psychoses, but also to interrupt LSD trips, and it was later described as LSD's "counterpoison," (i.e., antidote).[52] This alliance led to further experimentation since for the first time, there seemed to be a stable, controlled setting—the psychiatric hospital, which increased the importance of clinics as laboratories.

In this vein, the team in Basel set out to find a mysterious substance in the urine of patients. Rolf Weber, a researcher, even made a vast series of self-experiments drinking thirty-one "normal" urine samples and thirty-one samples of "schizo-urine," distilled and fermented by Hofmann at Sandoz. While the normal samples had no effect, the schizo-urine had, according to Weber, effects similar to autism: "pensiveness, flight of thought, difficulty to focus." Despite again noting a difference between the bodily fluids of patients and healthy subjects, he deemed his trial too small to be conclusive. He nonetheless saw indications that there might be a "principle" in

schizophrenic patients that triggered reactions similar to those with "smaller doses of LSD."[53]

Together with Peter Witt, who later became famous for his spider tests with various psychotropic drugs, Weber fed the schizo-urine to spiders. The method had already been applied to study various drugs to see if they affected how spiders wove their webs (i.e., their symmetry, precision, and rich detail), but also the willingness of the spiders to weave. It promised, in a sense, a quite literal trace substance underlying schizophrenia by way of spiders. However, the webs woven under the influence of schizo-urine were not particularly accurate, chaotic, or close to the webs spun while under LSD or other hallucinogenic substances. The authors speculated that their method might not be sensitive enough, ending their paper with a programmatic quote by an American neurophysiologist: "There can be no twisted thought without a twisted molecule."[54]

Far from a fringe trend, similar research was conducted in the US and Canada, leading some historians to point out the obsession in the 1950s with the search for a "schizophrenic serum" in the blood, urine, or spinal fluid of psychotic patients.[55] Psychiatry had become biochemical, and the widely accepted idea that mental processes were biochemically steered eventually paved the way for neurotransmitter research.[56] A schizophrenic serum, however, was never found.

As the decade obsessed with the schizophrenic serum ended, new ways were found in the 1960s to investigate the mind-body problem with hallucinogens. The body still played an important role, but now as a surface. Hans Heimann (1922–2006), a psychiatrist in Berne, turned his attention to the phenomenology of expressions of subjects on LSD and psilocybin (i.e., their posture, voice, gestures, or sighs), while the content of an experience did not matter to him. He intended to cancel the "dualism of the mind-body-problem," as expressions were a link between the inside and outside: they lie "transversal to all opposites of conscious-unconscious, of inside and outside."[57] His research had received a boost from technology, since recording devices were more easily available. A camera hidden behind darkened glass was crucial to his setting, with the observer operating it by remote control. Technology served as a means to blur subjective aspects and to carve out a

general typology through the objectifying camera lens. While the mind-body dichotomy dissolved in Heimann's concept of the significance of expression, materiality had found a way back in through the back door of technology.

EPILOGUE: AND WHAT ABOUT THE PATIENTS?

While the experimental culture that emerged between Sandoz and the psychiatric clinics expanded to encompass more actors, border crossings, and boundary shifting toward wider social and global circulation, little is graspable about the patients themselves. Apart from case reports in published articles, sources remain scarce to this day. Looking at the flow of knowledge and material in and out of the clinics, it is clear that patients played a role on multiple levels in this uneven setting: As late as the 1970s, patients in Swiss asylums were in contact with ergot, once the basic source for LSD and now for other Sandoz drugs, as a form of therapy (see chapter 9). Pictures taken by a young photographer inspired by anti-psychiatry, who visited several institutions around Berne around that time, showed patients sorting through rye to collect ergot for Sandoz as a form of work therapy.[58] Since the end of the 1930s, patients had been crucial in cultivating and especially harvesting and collecting rye and ergot, with their integration in this production process being a part of work therapy.[59] It may well be that some of the patients occupied with ergot production were the same people on whom LSD or psilocybin was tested (e.g., in the Basel area), adding a curious twist to this story.

Notwithstanding the narratives that emerged from the early hallucinogenic setting in Switzerland—such as its use conceptualized as shock therapy, personality test, the chemical basis of the psyche, and model psychosis—patients contributed to the production of stable knowledge and material and were important actors in involuntarily shaping what later circulated around the globe. Among the flow of material coming in and out of the clinics was not least their valuable waste—urine—which was seen as a possible key to the biochemistry of psychosis.

While LSD had initially served to reinforce the normal and the pathological as preformed, normative, and stable entities, it also produced paradoxical effects: the Burghölzli medical staff tripped around the clinic and

the Basel team went so far as to drink urine in an effort to finally solve the puzzle of the mind. Researchers and psychiatrists, in a sense, had become closer to their patients and seemed, at times, in need of medication too. It is only fitting, then, that Sandoz, when preparing the launch of LSD as a medicine under the brand name Delysid, framed it not only as a drug for patients, but for doctors as well: "By taking Delysid himself, the psychiatrist is able to gain an insight into the world of ideas and sensations of mental patients," the leaflet read.[60]

In psychiatry, the late 1960s saw a shift toward a more "flexible normalism,"[61] which was no longer so strongly characterized by stable, preconceived norms, but rather gave way to a view of illness and health as a continuum in which potentially everyone may need therapy. LSD in this setting was a tool to do boundary work, but not a subversive substance in itself. It became a negotiator of boundaries that remained connected to professional and social practices of meaning-making.

In the process, the question of the normal and the pathological was reframed by some as one of elites and masses. Albert Hofmann, for one, opposed the idea of LSD for the masses of the late 1960s, considering it essentially a bourgeois drug. It is noteworthy in this context that he took LSD with Ernst Jünger in an utterly nonclinical setting, featuring red-violet roses and a Mozart concerto.[62] Interpretations of LSD are ultimately perhaps inseparable from the question of who takes it.[63] Throughout its history, it has mattered whether the LSD takers were college students, European artist bohemians, or psychiatric patients sorting through ergot.

NOTES

1. See Georges Canguilhem, *Le normal et le pathologique* (Paris: Presses Universitaires de France, 1966); Jürgen Link, *Versuch über den Normalismus. Wie Normalität produziert wird* (Göttingen, Germany: Vandenhoeck & Ruprecht, 2006).
2. For a discussion of these dichotomies, see also Sarah Shortall, "Psychedelic Drugs and the Problem of Experience." Supplement 9, *Past and Present* (2014), 187–206.
3. On ergot production, see Beat Bächi, *LSD auf dem Land. Produktion und kollektive Wirkung psychotroper Stoffe* (Konstanz, Germany: Konstanz University Press, 2020).
4. See, for example, Monika Ankele and Benoît Majerus, eds., *Material Cultures of Psychiatry* (Bielefeld, Germany: Transkript, 2020); Kijan Espahangizi and Barbara Orland, ed., *Stoffe in*

Bewegung. Beiträge zu einer Wissensgeschichte der materiellen Welt (Zürich: Diaphanes, 2014); on the practical turn in the history of science, see Hans-Jörg Rheinberger, *Historische Epistemologie zur Einführung* (Hamburg: Junius, 2007), 119–121; Andrew Pickering, *The Mangle of Practice: Time, Agency, and Science* (Chicago: University of Chicago Press, 1995); for a critique, see Philipp Felsch, "Die Arbeit der Intellektuellen. Zur Vorgeschichte des 'Practical Turn'." *Nach Feierabend, Wissen*, *ca. 1980* (2016): 255–262.

5. Werner A. Stoll, "Lysergsäure-diäthylamid, ein Phantastikum aus der Mutterkorngruppe." *Schweizer Archiv für Neurologie und Psychologie* 60 (1947): 279–323. The term *Phantastikum* is originally from Louis Lewin.

6. A. Hofmann to A. Stoll, April 22, 1943, Novartis Archive, Sandoz, H 105.022. See also Bächi, *LSD*, 80.

7. See chapter 9 in this volume.

8. A. Stoll and E. Rothlin to M. Bleuler, February 13, 1947, State Archive of Zurich, PUK, Z 99.4379. (All source translations by the author.)

9. A. Stoll and E. Rothlin to M. Bleuler, February 13, 1947, monthly pay slips from December 1945 to July 1946. It is striking that despite these regular contributions, trials were conducted in a researcher's spare time, which explains a general lack of sources on experiments in Swiss archives, as many records were considered private property. W. Stoll to M. Bleuler, February 8, 1947; M. Bleuler to E. Rothlin, April 29, 1947. For another example of troves of patient files in a private estate, see Marietta Meier, Mario König, Magaly Tornay, *Testfall Münsterlingen: Klinische Versuche in der Psychiatrie, 1940–1980* (Zürich: Chronos, 2019).

10. W. Stoll to M. Bleuler, February 8, 1947, State Archive of Zurich, PUK, Z 99.4379.

11. Stoll, *Phantastikum*, 317. On imaginary and transcendental dimensions, see Jakob Tanner, "'Doors of Perception' Versus 'Mind Control'. Experimente mit Drogen zwischen kaltem Krieg und 1968," in *Kulturgeschichte des Menschenversuchs im 20. Jahrhundert*, ed. Birgit Griesecke et al. (Frankfurt am Main: Suhrkamp, 2009), 340–72; Nicolas Langlitz, "Political Neurotheology: Emergence and Revival of a Psychedelic Alternative to Cosmetic Psychopharmacology," in *Neurocultures. Glimpses into an Expanding Universe*, ed. Francisco Ortega and Fernando Vidal (Frankfurt am Main: Peter Lang, 2011), 141–165. For a more detailed analysis of these early trials, see Magaly Tornay, *Zugriffe auf das Ich. Psychoaktive Stoffe und Personenkonzepte in der Schweiz, 1940–1980* (Tübingen, Germany: Mohr Siebeck, 2016).

12. Stoll, *Phantastikum*, 315.

13. Mike Jay, *Mescaline: A Global History of the First Psychedelic* (New Haven, CT: Yale University Press, 2019), 192. See also Nicolas Langlitz, *Neuropsychedelia: The Revival of Hallucinogen Research since the Decade of the Brain* (Berkeley: University of California Press, 2013).

14. Werner A. Stoll, "Ein neues, in sehr kleinen Mengen wirksames Phantastikum." *Schweizer Archiv für Neurologie und Psychiatrie* 64 (1949): 483–484.

15. Stoll, *Phantastikum*, 283.

16. For these quotes, see Bächi, *LSD*, 89.

17. Stoll, *Phantastikum*, 302.

18. Stoll, *Phantastikum*, 305; 310.

19. Stoll, *Phantastikum*, 309.

20. Stoll, "Mengen", 484.

21. See also Brigitta Bernet, *Schizophrenie: Entstehung und Entwicklung eines psychiatrischen Krankheitsbildes um 1900* (Zürich: Chronos, 2013).

22. M. Bleuler to A. Stoll, February 11, 1947, State Archive of Zurich, PUK, Z 99.4379.

23. See also Nikolas Rose, "Neurochemical Selves." *Society* 41, no. 1 (2003): 46–59; Jeannie Moser, "'The Cure Is Biochemical'. Drogen und die Arbeit am Selbst in den sozialutopischen 1950er- und 1960er-Jahren," in *Handbuch Drogen in sozial- und kulturwissenschaftlicher Perspektive*, ed. Robert Feustel, Henning Schmidt-Semisch, and Ulrich Bröckling (Wiesbaden, Germany: VS Verlag für Sozialwissenschaften, 2019), 81–92.

24. M. Bleuler to E. Rothlin and A. Stoll, February 18, 1947, State Archive of Zurich, PUK, Z 99.4379.

25. Bleuler to Rothlin, May 29, 1947, State Archive of Zurich, PUK, Z 99.4379.

26. Bleuler to Rothlin, July 9, 1947, ibid.

27. Rothlin to Bleuler, August 9, 1947, ibid.

28. Bleuler to Rothlin, August 16, 1947, ibid.

29. Bächi, *LSD*, 86 f.; Rothlin to Bleuler, August 26, 1947, State Archive of Zurich, PUK, Z 99.4379.

30. Bleuler to Rothlin, November 15, 1947, State Archive of Zurich, PUK, Z 99.4379; Rothlin to Bleuler, November 17, 1947, State Archive of Zurich, PUK, Z 99.4379. It would take until 1952 for Stoll to publish these results. Werner A. Stoll. "Rorschach-Versuche unter Lysergsäure-Diäthylamid-Wirkung." *Rorschachiana* 1, no. 3 (1952): 249–270.

31. Rothlin to Bleuler, August 9, 1947, State Archive of Zurich, PUK, Z 99.4379; Rothlin to Bleuler, April 9, 1948, State Archive of Zurich, PUK, Z 99.4379.

32. Rothlin to Bleuler, 22 December 1947, State Archive of Zurich, PUK, Z 99.4379.

33. Gion Condrau, "Klinische Erfahrungen an Geisteskranken mit Lysergsäure-Diäthylamid." *Acta Psychiatrica et Neurologica* 24 (1949): 9–32, 16 f.; Edwin Blickenstorfer, "Zum ätiologischen Problem der Psychosen vom akuten exogenen Reaktionstypus. Lysergsäurediäthylamid, ein psychisch wirksamer toxischer Spurenstoff," *Archiv für Psychiatrie und Nervenkrankheiten* 188, no. 3 (1952): 226–236, 229.

34. Condrau, *Erfahrungen*, 22, 26. In Canada, Abram Hoffer and Humphry Osmond picked up on precisely this point. See Erika Dyck, *Psychedelic Psychiatry: LSD from Clinic to Campus* (Baltimore: Johns Hopkins University Press, 2008), 31–38, 44–49.

35. Rothlin to Bleuler, August 9, 1947, State Archive of Zurich, PUK, Z 99.4379.

36. See Damion Searls, *The Inkblots. Hermann Rorschach, His Iconic Test, and The Power of Seeing* (New York: Crown Publishing, 2017); Naamah Akavia, *Subjectivity in Motion. Life, Art, and Movement in the Work of Hermann Rorschach* (New York: Routledge, 2013); Rebecca Lemov, *Database of Dreams. The Lost Quest to Catalog Humanity* (New Haven, CT: Yale University Press, 2015).

37. Rebecca Lemov. "X-Rays of Inner Worlds, The Mid-Twentieth-Century American Projective Test Movement." *Journal of the History of Behavioral Sciences* 47, no. 3 (2011): 251–254.

38. Peter Galison, "Image of Self," in *Things That Talk: Object Lessons from Art and Science*, ed. Lorraine Daston (Cambridge, MA: MIT Press, 2004), 257–296.

39. Frederic Wertham and Manfred Bleuler, "Inconstancy of the Formal Structure of the Personality: Experimental Study of the Influence of Mescaline on the Rorschach Test." *Archives of Neurology and Psychiatry* 28, no. 1 (1932): 52–70, 67. On the history of mescaline, see Jay, *Mescaline*.

40. Condrau, *Erfahrungen*, 31.

41. Stoll, *Phantastikum*, 319.

42. Stoll, *Rorschach-Versuche*, 264, 268.

43. See Link, *Normalismus*; on antipsychiatry, see Benoît Majerus, "Mapping antipsychiatry: Elemente für die Geschichte einer transnationalen Bewegung." *Themenportal Europäische Geschichte* (2010), http://www.europa.clio-online.de/2010/Article=440; Duncan D. Double, ed., *Critical Psychiatry. The Limits of Madness* (Basingstoke, UK: Palgrave Macmillan 2006); Nick Crossley, *Contesting Psychiatry: Social Movements in Mental Health* (Abingdon, UK: Routledge, 2006).

44. Gaetano Benedetti, "Beispiel einer strukturanalytischen und pharmakodynamischen Untersuchung an einem Fall von Alkoholhalluzinose, Charakterneurose und psychoreaktiver Halluzinose." *Zeitschrift für Psychotherapie und medizinische Psychologie* 1 (1951): 177–192, 183, 188 f.

45. Albert Hofmann, *LSD—mein Sorgenkind* (Stuttgart: Fischer, 1979), 163.

46. A. Hofmann to A. Stoll, June 2, 1947, Novartis Archive, Sandoz, H 105.022.

47. F. Georgi to A. Hofmann, July 8, 1953, Novartis Archive, Sandoz, H 105.022; R. Weber to A. Hofmann, March 26, 1953, Novartis Archive, Sandoz, H 105.022.

48. M. Bleuler to A. Stoll, May 13, 1947, State Archive of Zurich, PUK, Z 99.4379.

49. See Tamar Novick, "Die Entdeckung des Urins." *Nach Feierabend. Materialgeschichten* (2018): 139–150, 143.

50. On the autotoxin hypothesis and mescaline, see Jay, *Mescaline*, ch. 8.

51. See David Healy, *The Creation of Psychopharmacology* (Cambridge, MA: Harvard University Press, 2002).

52. Hofmann, *Sorgenkind*, 55.

53. Typescript by R. Weber, December 16, 1952, Novartis Archive, Sandoz, H 105.002.

54. P. Witt and R. Weber, "Biologische Prüfung des Urins von drei Kranken mit akut psychotischen Zustandsbildern auf pathogene Substanzen mit dem Spinnentest." *Monatsschrift für Psychiatrie und Neurologie* 132 (1956): 193–207; Weber, *Urin*, 205.

55. Humphry Osmond coined this term; see Jay, *Mescaline*, ch. 8; Erika Dyck, "Flashback: Psychiatric Experimentation with LSD in Historical Perspective." *Canadian Journal of Psychiatry* 50, no. 7 (2005): 381–387. See also Jeannie Moser, *Psychotropen. Eine LSD-Biographie* (Konstanz, Germany: Konstanz University Press, 2013), 190; Healy, *Psychopharmacology*, 186–192.

56. Healy, *Psychopharmacology*, 186–192.

57. Hans Heimann, "Ausdrucksphänomenologie der Modellpsychosen (Psilocybin). Vergleich mit Selbstschilderung und psychischem Leistungsausfall." *Psychiatria et Neurologia* 141 (1961): 69–100, 70 f.

58. Werner Haug, *Gesichter einer anderen Schweiz* (unpublished manuscript, 2021).

59. On ergot cultivation, see Bächi, *LSD*.

60. Hofmann, *Sorgenkind*, 55.

61. See Jürgen Link and Mirko M. Hall, "On the Contribution of Normalism to Modernity and Postmodernity." *Cultural Critique* 57 (2004): 33–46.

62. For this episode, see Jay, *Mescaline*, 189.

63. For a similar argument in the US context, see David Herzberg, *Happy Pills in America: From Miltown to Prozac* (Baltimore: Johns Hopkins University Press, 2009), 3–5.

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