

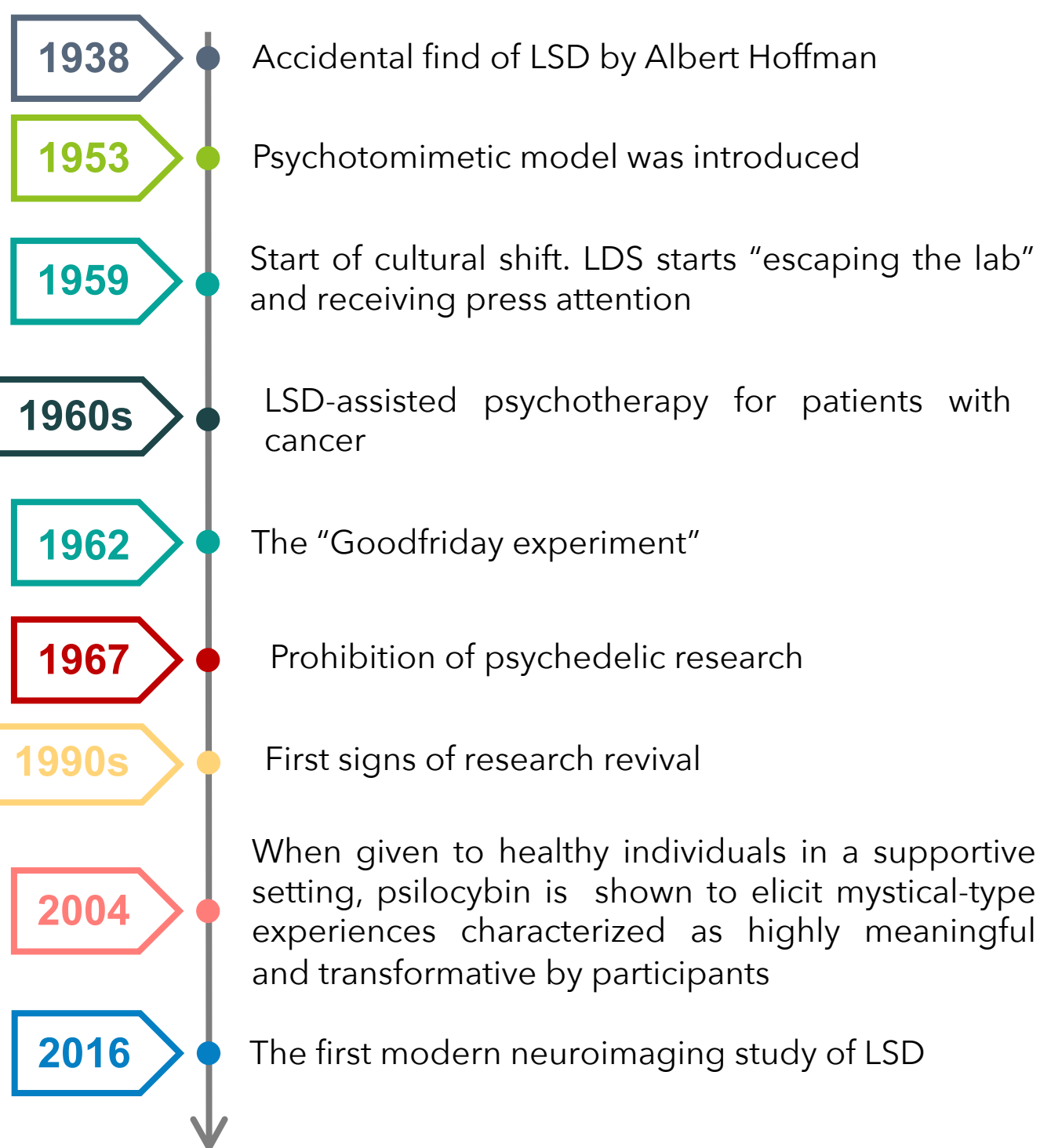
MICRODOSING PSYCHEDELICS - LSD, WHERE COULD IT GO?

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Fig. 1 - The LSD timeline



Effects induced by LSD

- ❖ Perceptual: visual hallucinations, audiovisual synesthesia.
- ❖ positively experienced derealization and depersonalization.
- ❖ Subjective well-being, happiness, closeness, openness and trust.
- ❖ Increased blood pressure, heart rate, body temperature, pupil size, plasma cortisol, prolactin, oxytocin, and epinephrine.

WHAT WE KNOW

Between the 1950s and 1960s, psychedelic drugs had become mainstream medicine, tens of thousands of patients had been treated effectively – including alcoholism, mood disorders, end of life anxiety - before research was halted for 40 years.

Although none of the evidence was never as methodologically robust as contemporary research studies, when analyzed together they showed a significant effect size.

Neurobiology and Pharmacology

Lysergic acid diethylamide (LSD) has a high affinity for a range of neurotransmitter receptors, but its characteristic psychological effects are thought to be mediated by **serotonin 2A receptor (5-HT2AR) agonism**. Based on functional imaging studies, it seems to induce an emotional processing bias toward positive information and to attenuate responses to fearful stimuli mediated by a re-balance of hippocampal/parahippocampal 5-HT2/5-HT1A signaling and associated excitation and plasticity.

Neuroimaging studies report increased visual cortex cerebral blood flow and resting state functional connectivity (RSFC) - predicting the magnitude of **visual hallucinations**; decreased default mode network integrity, parahippocampal RSC and RSFC - correlating with profound changes in consciousness, typified by **ego-dissolution**, suggesting that psychedelics might influence connectivity between cortical areas responsible for maintenance of sense of "self". Disorders that are hypothesized to involve the emergence of "rigid" maladaptive circuitry might benefit from this "entropic" effect on cortical activity that psychedelics induce.

Microdosing

What it is: the practice of ingesting a very low dose of a psychedelic substance (~10-20 mcg LSD or less).

How it works: most frequent practice is interspersing dosing days with rest days. One common schedule is to microdose every three days

Users and defenders claim a variety of psychological and social benefits from regular microdosing – increases in vitality, creativity, productivity,

social ability, focus, analytic thinking, positive mood, memory, mind-fulness and general wellbeing - while denying experiencing the alterations in consciousness and perception of typical doses.

There has been no specific research into the safety of microdosing, however research with higher doses of psychedelics suggests that these substances are relatively safe. In 2018, a rise in subscribers to an online forum, [reddit.com/microdosing](https://www.reddit.com/microdosing) exceeded 40,000, doubling in less than 1 year

	Psycholytic therapy (PLT)	Psychedelic therapy (PDT)
Dosage	Low doses (30–200 µg LSD equivalent)	High doses (200–1500 µg LSD equivalent)
Psychological effects	Symbolic images, regression, transference phenomena	Cosmic-mystic experiences, experiences of oneness and ecstatic joy
Mechanism of action	Activation and deepening of the psychoanalytic process	No foundation in classical psychological theories. Parallels to religio-psychological experiences
Number of sessions	Numerous sessions	The aim is to create one single 'overwhelming' experience
Setting	Analytic discussion of material experienced in individual and group sessions	Extremely suggestive preparation and use of specific surroundings and music. No detailed discussion of the experience
Integration into reality	Reality comparison, attempt to adapt experience to everyday life	Adaptation to reality not desired, but rather the fixation of the psychedelic experience
Indications	Classical indications for psychotherapy: neuroses, psychosomatic cases; in addition, cases of psychopathy, sexual perversion, borderline cases. Not alcoholism or psychosis	Alcoholism and drug addiction, anxiety and depression in terminal phases of somatic illness

Table 1 - The two forms of psychedelic enhanced psychotherapy - psycholytic and psychedelic therapies (rom Majić et al. 2015)

WHAT WE NEED TO KNOW AND WHY

There is today considerable **popular interest** in the practice of microdosing with indication of considerable levels of experimentation with psychedelics in the population (~6-8%). Past associations with uncontrolled recreational misuse and hedonistic approaches have **negatively biased general opinion** about psychedelic substances, preventing many clinicians from getting involved in research. Current findings suggest that popular accounts of the effects of microdosing may not match the experience of long term microdosers. This practice could offer benefits without the perceptual distortions and reduced need for expensive clinical oversight typical of full-dose psychedelic therapy. Such a possibility **calls for future investigation** on the impact of microdosing for improved mental health, challenging popular opinion through contemporary, sober, and evidence-based research. An considerable obstacle may be funding - for now there is little support from the pharmaceutical industry since the drugs themselves are all off patent, the recommended doses are low and infrequent, and they do not require repeated long-term use. Most funding depends on private and charitable donations, which is slow and laborious.

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