

Albert Hofmann

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Transcription: Martin MS

Thank you. I am deeply impressed by the warm reception which I received here in California. I thank you so much. I must apologize that I must rely in my talk on my paper – speaking a foreign language. The announced topic of this meeting embarrasses me to some extent. First, because it puts me too much in the center of this event, the inauguration of a library dedicated to preserving the legacy of consciousness research of the last 50 years.

To this research I made only a substantial contribution, substantial in the true sense of this word, namely in the form of two substances. (laughter) This became influential.

Secondly I am embarrassed because you may expect from me a survey of 50 years of research in consciousness. But this research is the domain of psychologists, psychiatrists and philosophers. Being a chemist I am not competent to present such a survey. What I can tell you are only my personal experiences and ideas.

Precisely 50 years ago, in 1938, I synthesized a substance which had at that time unexpected influence on my life, and (..) influenced and changed the life of many others. I mean D-lysergic acid diethylamide, known as LSD-25 or just LSD. Its preparation and its astonishing effects on the psyche have been described so many times that they need not be repeated here, and in addition Hugh Strittner (??) has presented to you the whole story this evening.

I am often asked what has made the deepest impression on me in my LSD experiments, and whether I have arrived at new understandings through these experiences. Of greatest significance to me has been the insight that I attained as a fundamental understanding from all my LSD experiences that what one commonly takes as THE reality by no means signifies something fixed but rather something that is ambiguous; that there is not only one but many realities, each comprising (comprising?) a different consciousness also of the people. One can arrive at this insight through scientific reflection. The problem of reality is and has been from time immemorial a central concern of philosophy. There is, however, a fundamental distinction between whether one approaches the problem of reality rationally or if one obsues (??) upon this problem emotionally, through an existential experience. The first planned LSD experience was therefore so deeply moving and alarming because everyday reality, which had until then been considered to be the only reality, dissolved, and an unfamiliar ego experienced another unfamiliar reality.

Another problem also appeared: that concerning the innermost self, which itself anoft (?) was able to recall these external and internal transformations. How could so strange changes in the experience of reality be explained? Evidently, the outer objective material world did not change during the time I was under the influence of LSD. Therefore, something inside me, in the experiencing subject, must have been altered. These reflections led me to conceive of reality as the product of a transmitter, the material, exterior world, and a receiver, our consciousness, the inner, spiritual center of a human individual.

In order to describe the mechanism by which reality comes into being through the interaction of these two factors – transmitter and receiver – one can use the metaphor of TV broadcasting. Evidently, both transmitter and receiver are needed to produce the TV picture. If either of them is lacking, the TV screen will remain blank and there will be no sound. Correspondingly, if only the material world existed without conscious humans – or vice versa – no human reality would exist.

Let us now examine what we know about what comprises human reality using the transmitter-receiver metaphor. First, what is the fundamental difference between transmitter and receiver? Whereas there is only one transmitter, one outer material world, there are as many receivers as human beings, and whereas the outer material world exists objectively, human consciousness is a subjective spiritual entity. All that we know objectively about the material world, about the transmitter, has been revealed by scientific research. All that can be discerned objectively in the material world is matter and energy. Matter occurring in innumerable, inorganic forms – the stars, the earth, biscuits (?), oceans, mountains – with its organisms of the plant and animal kingdoms, with the products of human creativity, objects of our daily life and of the arts – we are surrounded with matter and are matter ourselves with our bodily existence.

The science which is involved with the investigation of matter is chemistry.

The other component of the outer world which can be objectified is energy; energy occurring as radiation, heat and kinetic energy. So much for the transmitter.

Now what do we know about the receiver, about human consciousness?

Consciousness defies scientific definition, for it is what I need to contemplate what consciousness is. Our

inability to grasp the very nature of consciousness can be illustrated by this metaphor: you can't pull yourself into the air bying (?) on your own head. All attempts to define consciousness are tautological. consciousness can only be described as the receptive and creative spiritual center of the ego, as the very core of what we call „I“. consciousness remains a mystery, the very central mystery of our existence. this becomes even more evident if we examine its role as receiver in the production of reality. The antennae of the human receiver are formed by our five sensory organs. the antenna for optical images, the eye, is capable of receiving electromagnetic waves and projecting a picture on the retina that coincides with the object from which those waves emanate. It is important to realize that the human eye can only receive a very small band of the immeasurable spectrum of electromagnetic waves travelling through the universe, namely only waves measuring 0.4 to 0.7 thousandth of a millimetre. within this small section, our eyes and the receiver – consciousness – are capable of differentiating between different wavelengths and recording them as different colours. In connection with our reflections on reality, it is important to note that colours do not exist in the exterior world. Most are not aware of this basic fact, even though it can be looked up in every textbook on physiology. All that objectively exists in the outer world is matter, matter transmitting energy, transmitting electromagnetic oscillations of ...ing (?) wavelengths. If an object transmits or reflects electromagnetic waves with a length of 0.4 thousandth of a millimetre, then we say that it is blue. if it reflects waves with a length of 0.7 thousandth of a millimetre we describe the object as being red. this means that the perception of colour is a purely psychological event, taking place in the inner space of an individual. the brightly coloured world as we see it does not exist on the outside, it exists only on the screen inside of every individual.

regarding the acoustic world there is a similar (?) relationship between transmitter and receiver. the antenna for acoustic signals, the ear, displays a similarly limited breadth of reception in its function as part of the receiver, and like colours sounds do not exist objectively. what does exist objectively are, once again, waves – wavelength compressions and expansions of the air – which are received by the ear, registered by the timpanic membrane, and transformed into the sensation of sound in the hearing center of the brain. also the other aspects of reality which are made accessible by the remaining three senses – taste, smell and touch – are created by the interaction of transmitters in the outer world and receivers in the inner world. just like sound and colours, touch, smell and taste don't exist objectively. they, too, represent purely subjective phenomena, occurring only in the inner space of individual humans. the metaphor of reality as the product of transmitter and receiver clearly illustrates that the seemingly objective picture of the world surrounding us, that which we call reality, is actually a subjective picture. this basic fact signifies that the screen is not outside but inside every human being. we all carry inside our own personal image of reality, created by our own private receiver. understanding reality as the product of transmitter and receiver takes on an especially important meaning, which could existentially alter our daily life, when we consider the part that each receiver, each individual human, plays in the formation of reality. we become fully aware of the world-creating power vested in every human being. our understanding makes us aware of the fact that each individual is the creator of his or her own world, for it is in each individual's mind that the world and the abundance of life it contains, that the stars and the sky become real, become human reality. our real, true freedom and responsibility is formed in our ability to create our own individual world. once I have recongnized what part of reality is objectively on the outside and what is subjectively taking place within myself, than I am more aware of what I can change in my life, where I have a choice and thus what I am responsible for. Conversely, I become aware what is beyond my willpower and has to be accepted as an unalterable fact. this clarification of my potential and my responsibility can be of invaluable help. I have the ability to choose what I want to receive from the endless, infinite program of the great transmitter, creation. That means that I can let those aspects of creation, of the cosmos, that make me happy, enter into my consciousness and thus imbue them with reality, or I can let in other aspects, those that depress me. It is I who creates the bright and the dark picture of the world. It is I who invests the objects that are only shaped matter in the outer world not only with their colour but with my affection and my love, also with their meaning. this applies not only to my inanimate surroundings but also to the living beings, the plants, the animals and my fellow humans. with this insight, the full creative power of love becomes evident. just as I am the receiver for messages from my fellow man, I am in turn a transmitter for him. since I am materially located in his outer world, I can only convey my messages, my desires – even if they are purely spiritual – an idea, or my love, only through that (inaudible) the transmitter, namely via matter and energy. (missing) understanding, expressed by a glance, or a light touch, even this can only be conveyed by material fingers, material eyes, by the material bodies of a lemon towel (??). this shows that communication would not be possible without matter and energy. the transmitter-receiver metaphor for reality reveals another basic fact: the

fact, that reality is not a fixed state; rather, it is a result of a continuous input of material and energetic signals from the outer world and the continuous decoding and transformation into inner conscious experience. this demonstrates that reality is a dynamic process being created anew at each moment. actual reality exists in the here and now, in the moment. this explains why a child, living in the given moment much more extensively than an adult, perceives a real image of the world. it lives in a world permeated with more reality, more truth than that of the adult.

to experience true reality is one of the main concerns of mysticism. that is where childlike and mystical experience meet. if reality were not the result of continuous changes but a stationary condition, there would not be no experience of the moment, there would not be even any time, since the perception of time is only possible through the perception of change. the dynamic character of reality creates time. the transmitter-receiver concept of reality also imparts (?) an insight into the essence of time.

this metaphor of reality would appear to correspond to a dualistic concept of the world – external space, internal space, objective transmitter, subjective receiver – but reality, everyday reality, can be experienced only as the totality of transmitter and receiver. there would be no picture or sound on the tv screen if either one were missing. this example makes it evident that transmitter and receiver are nothing other than constructs of our intellect. Useful, valuable, even assessor means for a rational understanding of the mechanisms by which human reality exists. Dualism is but a construct of our intelligence, which leads us to believe that the so-called objective exterior world stands in opposition to our subjective, spiritual world. the failure to grasp that there is no dualism is one of the main reasons if not THE main reason for the tragic, catastrophic developments in our world. this dualistic worldview, so dominant in western culture today, has its roots in Greek pre-Socratic philosophy and in the judeo-christian belief of „make the earth your servant“. the experience of the earth as matter, as an object to which man stands opposed, provided the philosophical basis for the development of modern natural sciences and technology. with this science and technology man has changed the world, has subdued nature, its wealth has been exploited in a manner that may be characterized as plundering, and the sublime accomplishment of technological civilization, the comfort of western industrial society stands face to face with the catastrophic destruction of the environment. our objective intellect has progressed even to the heart of the matter, to the nucleus of the atom and its splitting, and has unleashed energies that threaten all life on our planet. this misuse of this knowledge could not have emerged from a consciousness of reality in which human beings perceive themselves as an integral part of living nature and the universe. all of today's attempts to make amends for the damage by adopting environmentally protective measures will remain futile or superficial patchwork if no change of the dualistic worldview ensues, until it is replaced by an existential experience of a deeper reality. the experience of such an all-encompassing reality is impeded in an environment rendered dead by human hands, such as we find in our grey cities and industrial districts. here the contrast between self and outer world becomes especially evident. It is these sensations that impress themselves on everyday consciousness in western society and everywhere where technological civilization extends. it is all of these morbid sensations that strongly influence modern art and literature. in a natural environment there is less danger that a split reality experience will arise. in field and forest, and in the animal world sheltered therein, in every garden, a reality is perceptible that is infinitely more real, older, deeper and more wondrous than everything made by man. A reality that will endure long after the inanimate, mechanical and concrete world has vanished, become rusted and fallen into ruin. in the sprouting, growth, blooming, fruiting, death and regeneration of plants, in their relationship with the sun, whose light they are able to convert into chemically bound energy in the form of organic compounds, out of which all that lives on our earth is built, in the being of plants the mysterious, inexhaustible, eternal life energy is evident, the same that has brought us forth and takes us back into its womb and in which we are sheltered and united with all living things. we are not leading to a sentimental enthusiasm for nature, to (french :-() in Jacques Rousseau's sense, that romantic movement which sought the idyllic in nature which can also be understood as a reaction to humankind's feeling of separation of nature.

what is needed today is a fundamental, existential experience of the oneness of all living things, of an all-encompassing reality. But this happens less and less as the primordial flora and fauna must yield to a dead technological environment. The experience of reality as the ego opposed to the outer world had already begun to form itself during greek antiquity, as I mentioned before. no doubt people at that time already knew the suffering connected with the dualistic consciousness of reality. the greek genius tried to cure this disease by supplementing the objective Apollonian worldview with the Dionysian world of experience in which the split was abolished in ecstatic inebriation. It is remarkable what the German philosopher Friedrich Nietzsche wrote about this in his book „Die Geburt der Tragödie“ (The birth of tragedy): „It is either through the influence of narcotic potions, of which all primitive peoples and races

speak in hymns, or through the powerful approach of spring, penetrating with joy all of nature, that those Dionysian stirrings arise, which in their intensification lead the individual to forget himself completely. not only does the bond between man and man beckon to be forged once again by the magic of the Dionysian rite, but alienated, hostile and subjugated nature again celebrates her reconciliation with her prodigal son, with man.“ So far Nietzsche.

The Dionysian cult was closely connected with the mysteries of Eleusis, the most important mysteries of the antique world which were celebrated annually in the fall over a span of about 2.000 years. These mysteries were established by the goddess of agriculture and grain, Demeter, as thanks for the recovery of her daughter Persephone, whom Hades, the god of the underworld, had abducted. A first offering of thanks was the ear (?) of grain, which was presented to Tryptolemus, the first high priest of Eleusis. The cultivation of grain was then disseminated of the whole world. Persephone, however, was not allowed to always remain with her mother. She had to return for a part of the year to the underworld. During this time it was Winter on earth and withdrew into the ground, only to awaken back to life early in the year with Persephone's journey back to earth. The myth of Demeter, Persephone and Hades, however, formed only the external framework for the events at the mysteries. The climax of the ceremonies, which began with a procession from Athens to Eleusis lasting several days, was the concluding ceremony of initiation. The initiates were forbidden – by penalty of death – to devoulch (? make publicly known) what they had learned and beheld in the innermost holiest chamber of the temple, the Telesterion. Not one of the multitudes that were initiated had devoulched (?). Parnesias (?), Plato, Roman Emperors like Hadrian, Marcus Aurelius and many other known figures of antiquity were part to this initiation.

It must have been an illumination, a visionary glimpse of a deeper reality, an insight into the true basis of the universe. We can deduce this from the initiates' own statements about the value and the importance of the vision. For example it is reported in a Homeric hymn: „Blissful is among men on earth who has beheld that; he who has not been initiated into the holy mysteries remains a corpse in gloomy darkness.“ Pindar speaks of the Eleusinian benediction with the following words: „Blissful is he who, after having beheld this, enters on the way beneath the earth. He knows the end of life as well as its divinely granted beginning.“ Cicero, also a famous initiate, said about the splendour that fell upon his life from Eleusis: „Not only have I received there the reason that we may live in joy, but also besides that we may die with better hopes.“ How could the mythological representation of such an obvious occurrence, which runs its course annually before our eyes, the seedgrain that is struck into the earth and dies there, prove to be such a deep, comforting experience as attested by the cited reports? It is traditional knowledge that the initiates were furnished with a potion, the Kykeon, for the final ceremony. It is also known that barley extract and mint were ingredients of the Kykeon. Scholars of mythology like Carl Kerényi (? Sorry, too lazy to look up the correct spelling) are of the opinion that the Kykeon was mixed with a hallucinogenic drug. I was associated with Kerényi in the 60s, doing research on this mysterious potion, an investigation as to what kind of hallucinogen could have been contained in the Kykeon. Reference of this collaboration is made in Kerényi's book „Eleusis“ which was published in 1977 in New York, and it is from that text from which the preceding statements on the Eleusinian mysteries were taken. Later in the 70s I was again engaged in the investigation of the hallucinogen in the Kykeon. This time I worked in collaboration with Gordon Wasson, the famous ethnomycologist with whom I had worked in the research on Mexican magic plants, the psilocybin mushroom and ololiuqui, and Carl Ruck, professor at Boston University, who was a classical scholar specialized in Greek ethnobotany. We published the results of our studies in the book entitled „The Road to Eleusis“, which was published in 1987. In that publication we put forth the hypothesis that the Kykeon's effect could have due to an LSD-like preparation of ergot. From an investigation in the Sandoz laboratories of all the various species of the ergot fungus I knew that an ergot growing on the wild grass *Paspalum Dystichum* (?), which is widespread in the mediterranean region, contains the same alkaloids that we had found in the ancient mexican drug Ololiuqui, namely lysergic acidamide and lysergic acid hydroxyamide, closely related to lysergic acid dyethylamide, to LSD. The high priest of Eleusis had access to this hallucinogen just in front of the temple. They just had to collect the infected grains of *Paspalum Dystichum* growing there, grind them and put the powder into the Kykeon in order to have a perfect hallucinogenic potion. If this was really so of course must remain a hypothesis, but a hypothesis with a high degree of probability, and Demeter was the goddess of grain.

The cultural-historical meaning of the mysteries of Eleusis, their influence on European cultural and spiritual history can scarcely be overestimated. The hallucinogen of the Kykeon may link these mysteries with the role of LSD in our time. What we urgently need now is evidently the same as was already

needed during antiquity, namely to be freed from an experience of reality in which the individual feels himself to be separate from the outer world. We need to be healed from dualism, which had and still has such catastrophic consequences as expounded in the preceding reflections. Insights into the essence of reality, which I tried to provide using the transmitter-receiver metaphor, could help us to overcome this dualistic worldview. However, insights that are solely the result of rational reflections are not effective enough to become decisive factors in our lives. Only when accompanied by an existential emotional experience do they grow strong enough to influence and alter our view of life. Such an emotional confirmation of an insight or of a truth can be achieved through meditation. I see the true importance of LSD, the Kykeon of our time, in its ability to provide a pharmacological aid to meditation, aimed at the experience of a deeper, all-encompassing reality, a reality in which the outer material and the inner spiritual world, transmitter and receiver, are experienced as one.

Thank you.