The Mysteries of Psychedelics

From Elusive to PET Scans: The Phenomenological Basis of

The experimental evidence for the idea that the action of drugs...
been done with LSD he was simply aghast. He just couldn't believe that LSD had ever knowingly been given to humans. What I hope to do tonight is to bring some of that ancient knowledge, if you will, into the 1990s, to give us a perspective as to why these drugs are important in the first place, why they motivated many people to do research with serotonin, and why they are still an important research area.

Psychedelics have had a profound effect on our culture. They have affected music, art and philosophy. We probably don't appreciate the extent to which psychedelics have affected our culture and our society. If you were to walk down the street and a colleague pointed to some poster or picture or article of clothing and said, "Wow, that is really psychedelic," most everyone here tonight would probably understand what he meant. Psychedelics did have a profound effect on our culture, probably in ways that we couldn't even begin to quantify today because it was so broad and widespread.

An old Playboy cartoon (above), is meant to illustrate what most people think of when they think of hallucinogens or psychedelics. Here we have a physician giving medication to a patient, telling the patient those pills he just took may produce some visual side effects. Of course what the patient is seeing is a bizarre array of hallucinated characters. His wife's head is floating, the nurse's neck is all misshapen, and this is probably what most people think about when they think of an hallucinogen. However, psychedelics or hallucinogens don't reliably produce hallucinations. I like the definition that Jaffe used for psychedelics in Goodman and Gilman. He said that they are drugs that produce changes in consciousness which normally occur only during dreaming or at times of religious exaltation. It is worth taking just a minute or two sometime to think about the definition of a drug class like that; it is really pretty profound if you think about it.

Now, why would we be interested in psychedelics? The conventional wisdom is they are nothing but drugs of abuse. Actually, I don't think that is the case at all. Here is a list of things that potentially would be interesting to look at or areas of study where psychedelics might be very important.

**Cognitive functions and sensory processes**

These drugs have a profound effect on normal cognition. How do they produce that effect? That obviously would be something very interesting to explore. Stan Grof has defined these drugs as non-specific amplifiers of unconscious processes. Normally we don't know much about the subconscious, but obviously if we have a drug that amplifies the subconscious this would be an interesting thing to study.

**Study of personality and dreams**

What is personality, where does it come from, what are the different phases and the different times in life that lead to personality development? Again, an amplifier of the subconscious or the unconscious mind might be revealing in studying personality. What about the processes involved in dreaming? I read an interesting paper many years ago by Clara Torda who had put volunteers in a sleep lab, acclimated them on one night and then the next night began an intravenous infusion a very low dose of LSD. What she observed was that the LSD produced an immediate bout of REM sleep. What kind of dreams were produced? Were they lucid dreams, were they different in any way from normal dreams? We don't know. It has been conventional wisdom that both from an EEG standpoint.
and even from a descriptive, subjective standpoint, that
sometimes the effect of psychedelics is like a sort of
conscious dream. So here's another area where LSD might
be used, to study dreaming.

**Obsessive/Compulsive disorder**

This is a very interesting application where psychedelics
could be used. OCD (obsessive-compulsive disorder) is an extremely difficult
disorder to treat. There are a number of anecdotal reports
involving the use of LSD over a period of some months in the absence of any structured
psychotherapy. The paper was a report of a ten-year follow-up. The individual was completely free of
obsessive-compulsive symptoms, and all accounts had a
better personality than at any time in his life.

**Convict rehabilitation**

This was a pioneering study done by Tim Leary
years ago (see this issue p.31). A recent retrospective has shown that the data were not
properly manipulated, shall we say. But suppose it was
possible to use psychedelics in the context of convict
rehabilitation. We have the highest incarceration rate of
any developed nation in the world, and our solution to
crime seems to be build more jails and hire more
cops. That's simply not good. We need a
different approach to treating social deviance. Here's a
possibility that would be tremendously cost-saving in
our society.
occurs when someone is pronounced clinically dead and then subsequently through some means the person is resuscitated. And it is sometimes the case that when those people are resuscitated they describe a memory of going—this would be a typical description—of going through a dark tube and emerging out into a bright light, being filled with light, being filled with a sense of ecstasy or love or often seeing heavenly messengers and hearing angelic singing, sometimes seeing long dead relatives or family members who come and greet the person. People who have this sort of NDE in many cases or most cases are convinced that they have seen the other side of death. That has demonstrated positive personality effects. These people often develop a zest for life. They have lost their fear of death. They become much more outgoing. They seem to experience life more fully. This has been very well documented in many cases and Grof has said that psychedelics can produce what he calls a “ritual encounter with death.” People who have a near death experience often undergo powerful transformative changes. People who undergo a peak psychedelic experience—the type where they have a sort of drug-induced near death experience, if you will—these are the people who undergo the powerful personality changes. In the early days of psychedelic research researchers didn’t fully appreciate that. They used low doses of psychedelics that produced distortions of the senses and changes in image processing and cognition. Most clinicians tried to use that state to facilitate a sort of cognitive therapy; to have people look at their pasts and introspect and so forth. But the people who had a peak experience—this parallel to the death experience—were the ones who were most often significantly helped. Certainly in the terminal cancer patient studies that was the case. I think that is the paradigm that has to be used and it is what many researchers in those earlier days failed to appreciate up until about the very end; that you have to bring about a powerful transformative experience to get personality change and a significant therapeutic effect. That is what I referred to earlier about the signal-to-noise ratio. This transformative experience is the “signal” that you need to find, but it was obscured in the “noise” of all the subjects who did not experience this effect of the drug. In all the early studies, one wonders what the results would have been if subjects who experienced this “peak experience” had been analyzed separately from those who did not.

**Study of the mind**

A final use for psychedelics is simply to study the mind and to develop theories about mind and the mind-brain relationship. I have a humorous cartoon—these are often sent to me by colleagues—in which the physician gives medication to the patient saying, “Here take these, I would like to see what they do to you.” This represents the wishes of psychedelic researchers like myself. We really don’t have a good model for understanding the clinical effects of these drugs.

**Available research model**

The best animal model we have right now is probably the two lever drug discrimination. In this model a rat is trained to discriminate between an injection of saline and a drug like LSD, for example. After the animal reliably learns to discriminate LSD from a saline injection he is administrated some new experimental drug and by observing which lever the animal presses one concludes that the animal is saying this drug was either like the training drug, that is, like LSD or was not like LSD. I have sort of a comparison between the rat and the human experience. In the rat “dialogue” the researcher says to the rat, “What does it feel like?” and the rat can only say, “It feels like LSD,” or “It doesn’t feel like LSD.” The human experience on the other hand is quite different. When the researcher says, “What does it feel like?” the human subject is just as likely to reply, “I was a witness to the Creation, I died and was reborn, it changed my life.” You
the right a PET scan of a normal human and one we have a PET scan of a child. He described it to us a disorder which he was at the time of the workshop have been altered with severe problems were some of the "One of the..." The story was how the the PET scan is coming to him and people workshops and the help in one workshop to one of us. He is a fellow who was and sent his in by a colleague of mine. A couple of weeks ago.

or when effects drugs produce. We have a number of different molecular structures and we have a number of different PET MOL, PET TAC, PET, TACi, which are not known in the clinical setting to know whether or not these were the possibility to know when the pharmacy and pharmacy, the drug with some that the pharmacy and pharmacy and not know whether the pharmacy and pharmacy and some of these should make you look better be sure.

PET scan Research

The number of different molecules that are known in the clinical setting to know whether or not these were the possibility to know when the pharmacy and pharmacy and not know whether the pharmacy and pharmacy and some of these should make you look better be sure.

Three Basic Types of Hallucigenon Molecules

Lysergic Molecules

Phenethylamines

Tryptamines
head. He had a lot of social problems because of this. He was considered the dummy and was outcast because of this. He started taking LSD when he was around 15 or 16 and he described how over the course of a series of sessions he was able to 'look inside his brain.' He had been formally diagnosed as being brain damaged and while under the effects of LSD 'understood how things were wired' and those were his words. Then in one particularly high dose and harrowing session he described to me how he had discovered 'all these unused filing cabinets in a different part of his brain.' He said he was able by an act of will to somehow download the language software from the damaged language centers and transfer the functions to this unused newly discovered or understood part of his brain. After that he said he had no more problems.

Suddenly, words on a page made sense, they stayed put and no longer floated away." Well, I realize that isn't the report of a double blind placebo controlled clinical study but the literature is replete with anecdotal first person accounts just like that. And if only a small percentage of those accounts represent the real potential of psychedelic drugs, aren't we missing out on something very profound and fundamentally important by not pursuing a more extensive research effort with these fascinating compounds? ·

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"One of these should make you feel better, be sure and let me know which one it is."