

By Carl Sagan

This account was written in 1969 for publication in Marihuana Reconsidered (1971). Sagan was in his mid-thirties at that time. He continued to use cannabis for the rest of his life.

It all began about ten years ago. I had reached a considerably more relaxed period in my life - a time when I had come to feel that there was more to living than science, a time of awakening of my social consciousness and amiability, a time when I was open to new experiences. I had become friendly with a group of people who occasionally smoked cannabis, irregularly, but with evident pleasure. Initially I was unwilling to partake, but the apparent euphoria that cannabis produced and the fact that there was no physiological addiction to the plant eventually persuaded me to try. My initial experiences were entirely disappointing; there was no effect at all, and I began to entertain a variety of hypotheses about cannabis being a placebo which worked by expectation and hyperventilation rather than by chemistry. After about five or six unsuccessful attempts, however, it happened. I was lying on my back in a friend's living room idly examining the pattern of shadows on the ceiling cast by a potted plant (not cannabis!). I suddenly realized that I was examining an intricately detailed miniature Volkswagen, distinctly outlined by the shadows. I was very skeptical at this perception, and tried to find inconsistencies between Volkswagens and what I viewed on the ceiling. But it was all there, down to hubcaps, license plate, chrome, and even the small handle used for opening the trunk. When I closed my eyes, I was stunned to find that there was a movie going on the inside of my eyelids. Flash . . . a simple country scene with red farmhouse, a blue sky, white clouds, yellow path meandering over green hills to the horizon. . . Flash . . . same scene, orange house, brown sky, red clouds, yellow path, violet fields . . . Flash . . . Flash . . . Flash. The flashes came about once a heartbeat. Each flash brought the same simple scene into view, but each time with a different set of colors . . . exquisitely deep hues, and astonishingly harmonious in their juxtaposition. Since then I have smoked occasionally and enjoyed it thoroughly. It amplifies torpid sensibilities and produces what to me are even more interesting effects, as I will explain shortly.

I can remember another early visual experience with cannabis, in which I viewed a candle flame and discovered in the heart of the flame, standing with magnificent indifference, the black-hatted and -cloaked Spanish gentleman who appears on the label of the Sandeman sherry bottle. Looking at fires when high, by the way, especially through one of those prism kaleidoscopes which image their surroundings, is an extraordinarily moving and beautiful experience.

I want to explain that at no time did I think these things 'really' were out there. I knew there was no Volkswagen on the ceiling and there was no Sandeman salamander man in the flame. I don't feel any contradiction in these experiences. There's a part of me making, creating the perceptions which in everyday life would be bizarre; there's another part of me which is a kind of observer. About half of the pleasure comes from the observer-part appreciating the work of the creator-part. I smile, or sometimes even laugh out loud at the pictures on the insides of my eyelids. In this sense, I suppose cannabis is psychotomimetic, but I find none of the panic or terror that accompanies some psychoses. Possibly this is because I know it's my own trip, and that I can come down rapidly any time I want to.

While my early perceptions were all visual, and curiously lacking in images of human beings, both of these items have changed over the intervening years. I find that today a single joint is enough to get me high. I test whether I'm high by closing my eyes and looking for the flashes. They come long before there are any alterations in my visual or other perceptions. I would guess this is a signal-to-noise problem, the visual noise level being very low with my eyes closed. Another interesting information-theoretical aspects is the prevalence - at least in my flashed images - of cartoons: just the outlines of figures, caricatures, not photographs. I think this is simply a matter of information compression; it would be impossible to grasp the total content of an image with the information content of an ordinary photograph, say 10^8 bits, in the fraction of a second which a flash occupies. And the flash experience is designed, if I may use that word, for instant appreciation. The artist and viewer are one. This is not to say that the images are not marvelously detailed and complex. I recently had an image in which two people were talking, and the words they were saying would form and disappear in yellow above their heads, at about a sentence per heartbeat. In this way it was possible to follow the conversation. At the same time an occasional word would appear in red letters among the yellows above their heads, perfectly in context with the conversation; but if one remembered these red words, they would enunciate a quite different set of statements, penetratingly critical of the conversation. The entire image set which I've outlined here, with I would say at least 100 yellow words and something like 10 red words, occurred in something under a minute.

The cannabis experience has greatly improved my appreciation for art, a subject which I had never much appreciated before. The understanding of the intent of the artist which I can achieve when high sometimes carries over to when I'm down. This is one of many human frontiers which cannabis has helped me traverse. The understanding of the intent of the artist which I can achieve when high sometimes carries over to when I'm down. This is one of many human frontiers which cannabis has helped me traverse.

There also have been some art-related insights - I don't know whether they are true or false, but they were fun to formulate. For example, I have spent some time high looking at the work of the Belgian surrealist Yves Tanguy. Some years later, I emerged from a long swim in the Caribbean and sank exhausted onto a beach formed from the erosion of a nearby coral reef. In idly examining the arcuate pastel-colored coral fragments which made up the beach, I saw before me a vast Tanguy painting. Perhaps Tanguy visited such a beach in his childhood.

A very similar improvement in my appreciation of music has occurred with cannabis. For the first time I have been able to hear the separate parts of a three-part harmony and the richness of the counterpoint. I have since discovered that professional musicians can quite easily keep many separate parts going simultaneously in their heads, but this was the first time for me. Again, the learning experience when high has at least to some extent carried over when I'm down. The enjoyment of food is amplified; tastes and aromas emerge that for some reason we ordinarily seem to be too busy to notice. I am able to give my full attention to the sensation. A potato will have a texture, a body, and taste like that of other potatoes, but much more so. Cannabis also enhances the enjoyment of sex - on the one hand it gives an exquisite sensitivity, but on the other hand it postpones orgasm: in part by distracting me with the profusion of image passing before my eyes. The actual duration of orgasm seems to lengthen greatly, but this may be the usual experience of time expansion which comes with cannabis smoking.

I do not consider myself a religious person in the usual sense, but there is a religious aspect to some highs. The heightened sensitivity in all areas gives me a feeling of communion with my surroundings, both animate and inanimate. Sometimes a kind of existential perception of the absurd comes over me and I see with awful certainty the hypocrisies and posturing of myself and my fellow men. And at other times, there is a different sense of the absurd, a playful and whimsical awareness. Both of these senses of the absurd can be communicated, and some of the most rewarding highs I've had have been in sharing talk and perceptions and humor. Cannabis brings us an awareness that we spend a lifetime being trained to overlook and forget and put out of our minds. A sense of what the world is really like can be maddening; cannabis has brought me some feelings for what it is like to be crazy, and how we use that word 'crazy' to avoid thinking about things that are too painful for us. In the Soviet Union political dissidents are routinely placed in insane asylums. The same kind of thing, a little more subtle perhaps, occurs here: 'did you hear what Lenny Bruce said yesterday? He must be crazy.' When high on cannabis I discovered that there's somebody inside in those people we call mad.

When I'm high I can penetrate into the past, recall childhood memories, friends, relatives, playthings, streets, smells, sounds, and tastes from a vanished era. I can reconstruct the actual occurrences in childhood events only half understood at the time. Many but not all my cannabis trips have somewhere in them a symbolism significant to me which I won't attempt to describe here, a kind of mandala embossed on the high. Free-associating to this mandala, both visually and as plays on words, has produced a very rich array of insights.

There is a myth about such highs: the user has an illusion of great insight, but it does not survive scrutiny in the morning. I am convinced that this is an error, and that the devastating insights achieved when high are real insights; the main problem is putting these insights in a form acceptable to the quite different self that we are when we're down the next day. Some of the hardest work I've ever done has been to put such insights down on tape or in writing. The problem is that ten even more interesting ideas or images have to be lost in the effort of recording one. It is easy to understand why someone might think it's a waste of effort going to all that trouble to set the thought down, a kind of intrusion of the Protestant Ethic. But since I live almost all my life down I've made the effort - successfully, I think. Incidentally, I find that reasonably good insights can be remembered the next day, but only if some effort has been made to set them down another way. If I write the insight down or tell it to someone, then I can remember it with no assistance the following morning; but if I merely say to myself that I must make an effort to remember, I never do.

I find that most of the insights I achieve when high are into social issues, an area of creative scholarship very different from the one I am generally known for. I can remember one occasion, taking a shower with my wife while high, in which I had an idea on the origins and invalidities of racism in terms of gaussian distribution curves. It was a point obvious in a way, but rarely talked about. I drew the curves in soap on the shower wall, and went to write the idea down. One idea led to another, and at the end of about an hour of extremely hard work I found I had written eleven short essays on a wide range of social, political, philosophical, and human biological topics. Because of problems of space, I can't go into the details of these essays, but from all external signs, such as public reactions and expert commentary, they seem to contain valid insights. I have used them in university commencement addresses, public lectures, and in my books.

But let me try to at least give the flavor of such an insight and its accompaniments. One night, high on cannabis, I was delving into my childhood, a little self-analysis, and making what seemed to me to be very good progress. I then paused and thought how extraordinary it was that Sigmund Freud, with no assistance from drugs, had been able to achieve his own remarkable self-analysis. But then it hit me like a thunderclap that this was not the case. Freud had used the same kind of self-analysis, but with the assistance of cannabis.

that this was wrong, that Freud had spent the decade before his self-analysis as an experimenter with and a proselytizer for cocaine; and it seemed to me very apparent that the genuine psychological insights that Freud brought to the world were at least in part derived from his drug experience. I have no idea whether this is in fact true, or whether the historians of Freud would agree with this interpretation, or even if such an idea has been published in the past, but it is an interesting hypothesis and one which passes first scrutiny in the world of the downs.

I can remember the night that I suddenly realized what it was like to be crazy, or nights when my feelings and perceptions were of a religious nature. I had a very accurate sense that these feelings and perceptions, written down casually, would not stand the usual critical scrutiny that is my stock in trade as a scientist. If I find in the morning a message from myself the night before informing me that there is a world around us which we barely sense, or that we can become one with the universe, or even that certain politicians are desperately frightened men, I may tend to disbelieve; but when I'm high I know about this disbelief. And so I have a tape in which I exhort myself to take such remarks seriously. I say 'Listen closely, you sonofabitch of the morning! This stuff is real!' I try to show that my mind is working clearly; I recall the name of a high school acquaintance I have not thought of in thirty years; I describe the color, typography, and format of a book in another room and these memories do pass critical scrutiny in the morning. I am convinced that there are genuine and valid levels of perception available with cannabis (and probably with other drugs) which are, through the defects of our society and our educational system, unavailable to us without such drugs. Such a remark applies not only to self-awareness and to intellectual pursuits, but also to perceptions of real people, a vastly enhanced sensitivity to facial expression, intonations, and choice of words which sometimes yields a rapport so close it's as if two people are reading each other's minds.

Cannabis enables nonmusicians to know a little about what it is like to be a musician, and nonartists to grasp the joys of art. But I am neither an artist nor a musician. What about my own scientific work? While I find a curious disinclination to think of my professional concerns when high - the attractive intellectual adventures always seem to be in every other area - I have made a conscious effort to think of a few particularly difficult current problems in my field when high. It works, at least to a degree. I find I can bring to bear, for example, a range of relevant experimental facts which appear to be mutually inconsistent. So far, so good. At least the recall works. Then in trying to conceive of a way of reconciling the disparate facts, I was able to come up with a very bizarre possibility, one that I'm sure I would never have thought of down. I've written a paper which mentions this idea in passing. I think it's very unlikely to be true, but it has consequences which are experimentally testable, which is the hallmark of an acceptable theory.

I have mentioned that in the cannabis experience there is a part of your mind that remains a dispassionate observer, who is able to take you down in a hurry if need be. I have on a few occasions been forced to drive in heavy traffic when high. I've negotiated it with no difficulty at all, though I did have some thoughts about the marvelous cherry-red color of traffic lights. I find that after the drive I'm not high at all. There are no flashes on the insides of my eyelids. If you're high and your child is calling, you can respond about as capably as you usually do. I don't advocate driving when high on cannabis, but I can tell you from personal experience that it certainly can be done. My high is always reflective, peaceable, intellectually exciting, and sociable, unlike most alcohol highs, and there is never a hangover. Through the years I find that slightly smaller amounts of cannabis suffice to produce the same degree of high, and in one movie theater recently I found I could get high just by inhaling the cannabis smoke which permeated the theater.

There is a very nice self-titering aspect to cannabis. Each puff is a very small dose; the time lag between inhaling a puff and sensing its effect is small; and there is no desire for more after the high is there. I think the ratio, R , of the time to sense the dose taken to the time required to take an excessive dose is an important quantity. R is very large for LSD (which I've never taken) and reasonably short for cannabis. Small values of R should be one measure of the safety of psychedelic drugs. When cannabis is legalized, I hope to see this ratio as one of the parameters printed on the pack. I hope that time isn't too distant; the illegality of cannabis is outrageous, an impediment to full utilization of a drug which helps produce the serenity and insight, sensitivity and fellowship so desperately needed in this increasingly mad and dangerous world.