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## 6 ALTERED STATES OF CONSCIOUSNESS (ASC)

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## Preface

Mind-altering plants, the rituals that developed around their usage and their therapeutic value are one subject I have been studying intensively for many years.

On my mother's side I am a native-Mexican, therefore I feeling connected with Middle- and South America and its traditions. This is also the reason why I have spent a lot of time in this part of the world. There I came in touch with different indigenous cultures, coming to know their vibrant traditions. These involve the ritualistic usage of sacred medicinal plants. I gained insight into the worlds these plants can open up in a ritualistic context. In this way, I was able to gather experiences of great significance to my life. They encouraged me to dedicate these plants' therapeutic potential to in-depth and detailed studies.

While I was working on the theoretical part of my thesis, I received an invitation to take part in "El Consejo Interamericano sobre Espiritualidad Indígena" (CISEI) ["Interamerican Council for Indigenous Spirituality" (PCIS)] – a biannual congress where indigenous healers and spiritual leaders of different American peoples meet scientists of various schools. This years CISEI took place in the center of "Takiwasi" in Tarapoto/Peru.

"Takiwasi" is a pilot project combining Amazonian shamanism with modern psychotherapy to treat drug addicts. The ritual usage of sacred medicinal plants – above all ayahuasca (*banisteriopsis caapii*) - plays a key-role in Takiwasi's therapeutic concept.

After the congress I spent another three weeks in Takiwasi to become acquainted with the center's working methods and its staff. Takiwasi seemed to be the ideal place for my detailed research of the traditional use of these plants and its application in treating modern mental disorders. I was glad to find a conceptualized theory as well as its practical application which has already been put to use for many years. In October 1999 I returned for another 10 weeks to Takiwasi to become a student trainee with the intend to collect even more experience and data. The experiences I gathered during this time gave me a deeper understanding of the therapeutic possibilities of mind-altering plants. I hope the following is going to inspire further discussion on this topic.

## 1 Introduction

For too long a time the knowledge of indigenous peoples has been devalued, destroyed and forced into the back- or underground – at first through colonization and inquisition, later by science. However, a transformation of ideology can be recognized in Western culture. The Newtonian-Cartesian-paradigm<sup>1</sup> has been shaken by recent developments in science, which “consider the necessity [of the implication] that the world is an inseparable whole where all parts of the universe, including the observer and his instruments, blend into one to form a totality - one singular body” (Bohm, 1980, quoted from Walsh, 1990). A lot of recent scientific developments are showing interesting parallels to primeval wisdom of different peoples<sup>2</sup>. In the light of an increasingly mature global consciousness theories of Western science seem not to be too absolute any more, but turn out to be products of their historical background. In fact, they are expressions of related ideologies and cultural symbolism. It is more often in the context of a social and ecological crisis that Western industrial cultural values and attitudes are reconsidered from a cross-cultural perspective, enabling one to push the envelope of conventional paradigms. It is in this context that the indigenous peoples’ wealth of knowledge about nature, the human being and a balanced relationship between them is reconsidered and acknowledged.

Also in the field of medicine one can find more and more people searching for alternatives to conventional modern medicine or psychotherapy. It is gradually being recognizing that every culture developed its own healing methods in accordance with its worldview and sociological, economic as well as ecological basic conditions. Although they are highly effective they may be difficult to understand when looked at from a Western scientific perspective only. Healing methods of other cultures often seem to work there, where Western conventional medicine and psychotherapy fail. An intensive study of them may probably open new perspectives for the Western health care.

80% of the world’s population makes use of traditional treatments (cf. Andritzky & Trebes, 1995), so that different sides now call for detailed research into these practices in order to integrate traditional medicine into their country’s national health care system as an equal alternative.

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<sup>1</sup> A paradigm is a standard example of a successful solution to a problem which is accepted by a community as a standard. In science it is the generally accepted perspective of a particular discipline at a given time (1962, to Sica, 1993).

<sup>2</sup> cf. e.g. the relativistic quantum physics by Capras, (1975); the “theory of holomovement” by Bohm (1980), the model of the holographic brain by Pibram (1971), the information and system theory by Batesons, (1979), the “theory of morphological resonance” by Sheldrake (1981), the theory of process by Young (1976), the Gaia-Hypothesis by Lovelock (1979), attempts of transpersonal psychology Tarts (1969, 19789, Grofs, (1983, 1986) etc.

For the most part, traditional healing systems are better integrated culturally. Moreover they are less expensive and are characterized by an ecological-economic use of local resources like remedies and knowledge. In 1977 the World Health Organization WHO developed guidelines to support traditional healing in health care politics and proposed research emphases and ways to develop as well as integrate it into Western medicine (cf. Andritzky, 1989b). So far, however, this recommendation was paid only little attention.

Indigenous healing is hardly even recognized by academic psychology and medicine, which is the reason why a real cooperation with traditional healing has only taken place on a small scale so far.

Also in “so-called” developing countries, where only a low percentage of the population makes or can make use of Western medicine and psychotherapy, it is still common in universities to Western therapy methods as universally valid and superior to other forms of treatment.

Based on this background, this thesis’s intention is to inspire further reassessment of traditional healing and to open up new perspectives for research in the field of medicine.

In this context I have been studying many common traditional medical health systems of Middle- and South America for an in-depth research on the usage of mind-altering plants. These plants are sacred in indigenous cultures because of their extraordinary effects. Their taking is inseparably joined with a ritual, therefore the abuse of these plants in indigenous cultures is virtually unheard of. A trance induced by these herbs is used therapeutically in various ways.

In Western science mind-altering plants had been studied only in terms of botany, pharmacology, physiology or ethnology and cultural anthropology. Their mind-altering components, however, were first researched in the field of medicine and psychology. In this context the focus was mainly on psychoactive isolates. The synergetic effect of the substances contained in those plants were not paid attention to. Moreover, this research approach seemed to neglect completely the indigenous knowledge about the plants’ usage, which had been acquired over thousands of years. In the course of time it became apparent that the effect of mind-altering substances depends much on non-pharmacological variables. Thus a deeper understanding and application of this knowledge - preserved in traditional healing rituals - may open new perspectives in researching the potentials of mind-altering substances.

This thesis’ aim is to create a basis for a scientific research of those plants’ mind-altering potential as observed in traditional healing rituals. Furthermore, this work is an exploratory study, in other words, a progressively convergent approach to the subject from a multidimensional perspective.

The study at-hand begins with an overview about the terminology which is used to describe or has been used to describe the plants and their isolated psychoactive pure substances, reflecting the difference in understanding that has been gained about these substances. The first chapter serves the purpose of a general characterization of the plants' effects compared with those of other substances and describes the different effects of the whole plant in comparison with those of psychoactive pure substances.

The third chapter offers a historical overview of different paradigms, which were applied to this class of drugs in the course of history. The historical perspective gives further insight into the negative stigmata attached to mind-altering plants allowing for a critical reconsideration within a broader context. Moreover, a review of different research paradigms makes clear to which extent non-pharmacological variables can influence the effects of consciousness-altering substances. It is especially with regard to these that sophisticated technologies have been developed in traditions which are thousands of years old. They are still alive today in a few surviving shamanic cultures where sacred medicinal herbs are traditionally worked with. In the fourth chapter I will describe the basics of the shamanic usage of sacred healing plants.

Furthermore, a number of initial psychological paradigms for the therapeutic effects of traditional healing rituals will be introduced. Altered states of consciousness are one of the working factors which have been researched most thoroughly in the context of Western psychology. Essential aspects of these states of consciousness which were discovered by experts in transpersonal psychology in the course of their investigation are described in the sixth chapter. Two substance-supported therapy methods developed and already practiced in Western psychology using the potential of mind-altering substances will be presented in the seventh chapter.

I was writing the paper's second part, as described in the preface, while I was on a field-trip in Peru. The aim of gathering data was to study the context into which the millenia-old indigenous knowledge of using sacred herbs is integrated. The project of Takiwasi was the ideal setting, for here traditional shaman methods are applied to working with these plants on the one hand and on the other, modern healing methods are integrated into the traditional methods. After a general introduction to Project Takiwasi, subject and principal field-study methods will be presented in chapter nine. A central element of this healing tradition and Takiwasi's therapy is the ritualistic usage of the psychoactive liana called ayahuasca *Banisteriopsis caapii*. Descriptive background information about the Amazonian cultures' usage of it will be given in chapter eleven. The ritualistic usage of sacred healing herbs is the backbone of Takiwasian therapies. It is embedded in a conceptual therapy that integrates other therapeutic procedures as well as communal living of patients in a therapeutic community, which

is an essential element of the treatment. In the twelfth chapter the basic understanding of addiction and the course of treatment as well as different elements of the same will be described.

In chapter thirteen you will find statistical data on the patients' profiles and the therapy of Takiwasi, in chapter fourteen, some brief statements of patients gave on their experiences during therapy.

Last but not least the therapeutic effect of the ritualistic usage of sacred herbs will be looked at from an indigenous and psychological perspective to derive hypothesis.

## 2 What are sacred healing plants?

“The first life-forms on earth were vegetable species. Plants have been fundamental to the development of higher life, fauna and finally human beings. The green vegetable bottom of earth lives in a wonderful relation to the sun. It absorbs its rays and by its help it creates organic substances: components of vegetable and animal organisms. Solar energy flows to the earth and is stored in plants as chemical energy by which all life processes are fed. Flora, thus, does not only deliver nutrients for our organism’s construction and calories to cover its power demand but also essential vitamins coordinating metabolism and many active substances used as medicine. The close solidarity of the vegetable world to the human organism, however, can best be seen in their representatives producing substances. These are even able to affect human mental nature. These plants’ miraculous, unexplainable, sometimes uncanny effects make their great significance understandable they had for the religious realms of ancient cultures. Still today, some tribes who have kept their old customs, praise and hallow them as magic drugs” (Schultes & Hoffmann, 1980, S.7).

### 2.1 Different terms of these plants and their psychoactive quintessence

In many cultures mind-altering plants are regarded to be “plants of gods” or “sacred medicinal plants” because of their intensive effects. Other traditional names for these plants are, for example, “plants of power”, “plant teacher”, “spiritual medicine”, “plants of blooming dreams”, etc.

In the course of Western science researching them, these plants and related chemically synthesized substances received many terms reflecting knowledge and attitude: deliranta (“creating deliria”), eidetica (“provoking ideas”), mysticomimetica (“imitating mystic states”), psychodysleptica (“softening the soul”), euphorohalluzinogenica (“creating euphoria and hallucinations”), entactogenes (“promoting self-knowledge”), entheogenes (“awakening the divine”), holotropica (“effecting totality”), psychointegrators (“integrating the psyche”), psychotogenes (“influencing the psyche”), psycholytica (“dissolving the psyche”), psychotomimemica (“imitating psychosis”) etc.

So far one has not reached a consensus on the most suitable of these termini yet.

Because of limited space I can highlight only single terms to explain them in detail:

The most common name is *hallucinogens*. However, it is quite problematic, because when translating the word hallucination as “deception of senses” it would mean to imply a judgment on reality of the experiences which are induced by them.

The term *psychedelica* is frequently used as a synonym for hallucinogens. The original meaning of this word, coming a long in the course of the youth revolt during the 60s, was “manifesting psyche”; “psyche” hereby is mind, soul and spirit. This term was referring to extraordinary mystic experiences mainly induced by LSD. Its therapeutic potentials of these provoked states of consciousness were

worked out in psychedelic therapy. Later, however, psychedelics received a negative connotation in terms of substances which lead from a distorted perception to psychosis-like states.

Winkelman (1966) suggested to use the term *psychointegrators* to emphasize the healing effects these substances may have. He justifies this:

“Psychointegrators therefore implies the stimulation of the mind, the emotions, soul and spirit to integrative development, consistent with the patterns of experience and uses of sacred plants in both individual and collective processes” (Winkelman, 1996, S. 18).

I decided to call plants, which may have such far-reaching effects on the human psyche, in accordance with their original function “sacred medicinal plants” (cf. also Andritzky & Trebes, 1996).

Referring to their extracted psychoactive pure substances I will use “entheogenes”, a term suggested by Wasson et al. (1986, after Winkelman, 1996).

Although I think the terms hallucinogens or psychedelics to be problematic, for they are heavily at a disadvantage, you will find these terms in some passages referring to other papers including this terminology.

## **2.2 Characterization of Entheogenes**

There are entheogenes in about 150 different flora species and their chemical derivates discovered already. They are also contained in secretions of certain toads species, which therefore were matched with the religious mythology and iconography of Mesoamerica (cf. Furst, 1972). Chemically seen, their most important representatives are part of the substance class of nitrogen alkaloids<sup>3</sup>. Among the more common vegetable substances the cannabis extracted THC is the only exception.

Albert Hoffmann (1975, cit. after Rättsch, 1988, p. 15) characterizes this class as the following:

“Hallucinogens differ from other psychoactive substances in their extraordinary far-reaching effects they have on the human psyche. They cause sweeping emotional alterations linked to a changed experience of space and time, the basic categories of human existence. The perception of one’s own body and self are changed deeply. Hallucinogens take us to different worlds – in a way worlds of dreams, experienced very realistically, even more intensively and therefore more real than the world of the everyday life. Hereby consciousness and memory, in case the dose is not too high, remains completely conserved. This is an important difference compared to opiates and other drugs, whose effects are accompanied by a consciousness clouding. Sensory perceptions, especially the sense of smell, are sensitized. Objects seem to be more vivid, colors more luminous, often shining with a magic shimmer. The sense of time is deeply disturbed. Time often seems to stand idle. One is living timeless, completely in the here and now. This leads to an incredible intensification of the experience.”

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<sup>3</sup> Alkaloids are nitrogen products of vegetable metabolism, which show alkaline and therefore are alkali-like (alkaloid). Most alkaloids have no hallucinogenic effects (Schultes & Hoffmann, 1980).

So-called hallucinogens are substances which may evoke - taking non-toxic doses - alterations of the perception, consciousness and mood in terms of persons, space and time” (Hoffer & Osmund, cit. after Schultes & Hoffmann, 1980, p. 13). Furthermore, only those substances are called “real hallucinogens” which do not make physically addicted and – in non-toxic doses – evoke “hallucinations”. Plants and substances causing these states in case of intoxication like some of the “new hallucinogens” of Western subcultures are considered to be pseudo-hallucinogens (cf. Schultes & Hoffmann, 1980).

The class of these substances can not be distinguished by their botanical, chemical or physiological criteria from other psychotropic “drugs” and therefore it is defined by its specific subjective effect for the human experience. The toxicologist Louis Lewin (1927, after Rosenbohm, 1991, p. 16) compiled a categorization of those psychoactive substances that is still valid today. He distinguished between *phantastica* [substances, here called entheogenes] like ayahuasca, fly agaric, peyote, henbane, thorn apple (jimson weed), psilocybin mushrooms, LSD etc.; *euphorika*: - soothing the soul - as there are, e.g., opium, morphine, codeine and heroin; *inebrantia*: intoxicants like alcohol, chloroform, ether and petroleum; *hypnotika*: sleep-inducing medication (except of kava); and last but not least, *excitantia*: stimulants like camphor, betel, kat, caffeine, tea, colanut, maté (Paraguay tea) and cocaine.

### **2.3 Sacred medicinal plants and pure substances**

While the whole plant is used in traditional healing ceremonies, their isolated psychoactive “pure substances” were and are worked with in researches and the therapy involving mind-altering substances. Reasons for this are such as the possibility to make more exact dosages, better replicable and controllable conditions of research as well as to avoid a possible unpleasant taste these plants may have and to evade unpleasant side effects like nausea or diarrhea. Moreover, wide-spread prejudices against medicinal plants to be something primitive certainly play a role in the Western cultural system, too.

The Western health system is of all cultures the only one that does not use the whole medicinal herbs, but their extracted and chemically synthesized substances as remedy. Plants have been in use for thousands of years, sophisticated extracts of them and chemically synthesized substances not long enough, though, to tell with certainty which effects they might have for humans.

For indigenous peoples the healing powers are not the result of the material active substances of the “god-plant”, but of the “spirit” or the “mother-plant”<sup>4</sup>. Plants are no beings without souls, which randomly store alkaloids and other products of metabolism, but living beings which can establish

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<sup>4</sup> In Western medicine one can find similar concepts. Paracelsus for example called a plant’s soul “arcanum”.

contact with humans. Instead of working with standardized doses, the composition and the dose of a remedy in traditional cultures is always applied individually to the sick and his/her psychosomatic state.

The heterogeneous character of different symptoms, which the sacred medicinal plants is applied to as remedy, makes one think of its' effect taking place far beyond its' pure material level; levels Western science is not able to prove (yet?). It seems to be about a holistic causal relationship on different levels as there are physical, psychological and spiritual ones.

According to indigenous healers, this holistic causal relationship is accompanied by an extraordinary bitter taste many of these plants have. Traditional medicine thinks this to be a natural protection against overdoses and abuse. The plant seems to have got installed "security mechanisms" in it, which get lost extracting single elements. Furthermore, taking many of these plants can be accompanied by nausea, vomiting and diarrhea. While often seen as a nasty side-effect, viewed from a Western perspective, traditional healers see it as a valuable purifying feature of this plant.

However, it is not possible to reduce the effects of sacred medicinal plants to their most important psychoactive substances from the plants' material level only. On the biochemical level the specific effect of a plant results not before a synergetic interaction of the main psychoactive elements will have taken place with many other substances of this plant. Thus, the Peyote cactus (*Lophophora williamsii*), for example, contains next to mescaline more than 50 other psychoactive alkaloids. "The effects of eating peyote buttons with its many alkaloids is, naturally, very different from those resulting from the effects of mescaline alone, as all or most of the alkaloids which occur in the plant are undoubtedly in other ways physiologically active" (Schultes & Hoffmann, 1980). Next to alkaloids there are also several other organic substances of peyote which have healing qualities of pure physiological levels.<sup>5</sup> The interaction of the plant's substances can not be understood completely via analytical reduction; the whole plant is much more complex than most of the laboratory products.

This paper's aim is to investigate the therapeutic potential of sacred medicinal plants and not that of psychoactive pure substances common in a Western therapeutic context.

### **3 Mind-altering substances in the Western world – a historical overview**

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<sup>5</sup> There are reports about the external usage of peyote in case of snake bites, burnings, wounds, back-pains, rheumatism, headaches, toothache, sunstroke etc. as well as internal usage in case of sicknesses like tuberculosis or arthritis, syphilis, cancer, skin disease, obstetrics etc.. Moreover Peyote is said to strengthen the immune system as well as to have antibiotal and antiparasitical effects (cf. Anderson, 1996, Rättsch, 1987). At the end of the 19. century peyote had also been used for different therapeutic means by some western doctors (respiratory organs' diseases, antispasmodic, heart-tonic, etc.). But the real therapeutic effect concerning these ailments is disputed.

Today sacred medicinal plants and their related psychoactive pure substances bear the stigmata to be dangerous drugs, which are abused and whose constructive value is denied in Western industrial cultures. Interestingly enough, sacred medicinal plants contribute to social cohesion, are used in a wide range of therapeutic applications, are sacred and among many traditional peoples they are essential cultural elements.

However, Western culture's evaluation of these substances to be dangerous, deceiving and creating addiction has never been and is not its only point of view. Especially the history of the last hundred years is characterized by a polarization of these substances' advocates who see in them a great potential for new ways of gaining insights and fierce opponents who emphasize their great dangers and equally demonizing them. Discussing mind-altering substances it becomes obvious how "truths" may be shaped by certain paradigms and how greatly a paradigm may influence a subject of research. The results of an LSD-conference in 1959 about the influence of the research paradigm and settings on the effects of LSD point out:

"Because the results are so much influenced by the personality, aims and expectations of the therapist and the setting ... it seems clear that first of all where there is no therapeutic intent there is no therapeutic result, that where the atmosphere is fear ridden and skeptical, the results are generally not good. This is of tremendous significance, for few drugs are so dependent on the milieu and require such careful attention to it as LSD does" (Savage, cit. after Yensen, 1996, p. 118).

The paradigm applied to these substances and the setting of their taking seem generally to have great influence on the effect of entheogenic substances. If entheogenes' effects are healing or destructive depends decisively on non-pharmacological variables. A historical review of the different reception of these substances especially points this out and invites to destigmatize entheogenes and to reach a more objective perspective about this class of substances.

### **3.1 The traditional usage of mind-altering plants and repression**

„The shamanic use of hallucinogenic plants as agents to facilitate healing, acquire knowledge and enhance societal cohesion were brutally repressed in both the old and the new worlds by the progenitors of our own contemporary Euro-American culture, often with the complicity of medical professions. Knowledge of the properties and potentials of these consciousness altering plants was forgotten or driven deeply underground for centuries“ (Grob, 1995, p. 91). As in so many other cultures the roots of a ritual usage of medicinal plants can still be found even in Europe. Among other things, late-medieval scriptures of natural magic ("magia naturalis") of Agripa von Nettesheim or J. B. Porta, different herb books from this time or the "Witch Hammer" by the Dominicans Institoris and Sprenger, show an extensive knowledge about these plants and a constructive working with them. Different mind-altering plants with healing and magic effects, especially night-shadows, had played an important role in the European medical system and were used to gain knowledge (cf. Harner, 1973). This changed from the fourteenth to the seventeenth century when traditional healers, who were not legitimated by the church, had been accused and sentenced to

death. The inquisition was especially directed against women who had learned from nature or by tradition. Along with several million women a rich knowledge about medicinal plants and the art of healing, which had passed on from generation to generation, died, too. The constructive usage of sacred medicinal plants, which were suddenly regarded to be tools of satan, were as good as extinguished by a physical destruction of its bearers' knowledge. Viewed from a historical perspective it is interesting, that the witch hunt took place parallel to the epoch of enlightenment. The sacred plants cultivating the world of the irrational and invincible did not seem to fit in the natural-scientific ideology relying on the outer perception just developing during this time.

A similar scenario took place when, during the conquest of America in the 16. century, Europeans were confronted with a widespread usage of mind-altering plants. For native Americans these plants were of divine origin and were said to be an important source of spiritual inspiration, mystic participation and the centered place in their religious-therapeutic system. The plants honored as sacred by the indigenous people were now declared to be devilish weapons that were created to prevent Christianity to defeat the heathen indigenous religions (cf. Furst, 1980).

At the beginning of the seventeenth century tribunals of the Inquisition were established in Mexico-City and Lima to harshly punish those who were caught in the very moment performing "heathen rituals". This might have also happened due to a political motivation, for the ceremonial usage has, as western researches later stated, a powerful cultural function (cf. Andritzky, 1993). The inquisition, moreover, interfered actively against a sizable number of emigrated and currently established European "sorcerers" who used for their curing work partly psychoactive plants of the new world.

The following excerpt from the writings dating back to the colonial inquisition by D. Pedro Naborre de Isla of 29 June, 1620 is destined to offer a little insight into the inquisitors' perspective:

"Referring to the introduction of the herbs or roots of Peyote (...) to uncover robbery, prophecies of other incidents and foreseeing future events it is mainly about superstition that is to be sentenced, for it acts against the purity and virginity of our holy catholic believes. And this is certain, for there is neither the mentioned plant nor another herb possessing the power or very own feature to evoke stated consequences. Neither seems any of them to be able to cause mental imagery, fantasy or hallucinations mentioned prophecies depend on. In the latter the influences and interventions of the devil are clearly recognized to be these vices' real cause. First it makes use of the Indians' natural naivety tending to idolatry and then laying low many other people who are not really afraid of God and do not really believe in him." (Leonard, 1942, cit. after Rättsch, 1994, p. 278).

This knowledge could only survive in the underground and by keeping secret shamanic techniques and their indigenous ideology from the European conquerors. Especially in terms of cultures extensively isolated from a European impact like various tribes of the Amazon or the Huicholes of Mexico this knowledge remained intact.

### **3.2 Rediscovery of mind-altering substances by Western science and first paradigms**

In Europe the far-reaching effects of these plants had past into oblivion to a large extent, until scientists began to investigate interdisciplinary their ceremonial usage in non-European cultures, their composition and their effect on the human psyche. Researchers like Ernst Freiherr von Bibra (1855), Mordecai Cooke (1860), Karl Hartwich (1911) and Louis Lewin (1924) were the first to publish papers on this subject. Thus they are said to be the fathers of the scientific research of psychoactive substances (cf. Schultes & Hoffman, 1980). In the beginning one mainly researched mescaline forming the Peyote cactus's, *Lophophora williamsii*, main psychoactive compound, that first was isolated by Louis Lewin in collaboration with his colleague Artur Hefter. Many scientists researched its effect by self-experiments and gained far-reaching experience.

While this new field of psychology fired one side of science with enthusiasm, the other side especially criticized self-experiments with mescaline. However, also the advocators of this research represented different opinions:

Some who took these substances made highly positive experiences. They thought these substances to be versatile tools empowering them to reach the secrets of the psyche's unknown regions. This is how Louis Lewin enthusiastically expressed his attitude towards these entheogenes' effects:

“If human consciousness is the most wonderful thing on earth, the attempt to fathom the depths of the psychophysiological action of narcotic and stimulating drugs makes this wonder seem greater still, for with their help man is enabled to transfer the emotions of everyday life, as well as his will and intellect to unknown regions“ (Lewin, 1931, cit. after Schultes & Winkelman, 1996, p. 205).

According to Lewin's view the discovery of mind-altering substances has opened completely new possibilities especially for ethnology and theology to approach their subject of research. Apart from mystical and transcending effects he also described their potential to create mental states similar to psychosis.

While psychosis-like effects were only facets of the effects of mind-altering substances for Lewin, their potential to induce a model-psychosis, however, was the only effect of “fantastica” for other researchers like Beringer. Moreover they were not attested any medical benefit (Beringer, 1927, in Yense, 1996).

The psychotomimetical (greek. = psychose-imitating) paradigm henceforth was dominating the research of these substances' psychological effects. As one considered them to be helpful agents to transport sane individuals into the world of psychotics, one hoped to gain a new view in terms of understanding and the therapy of psychosis and psychic disorders by researching this effect.

Publications on the ritual usage of mind-altering plants in indigenous cultures, as there are e.g. “Riding through the land of the Huichol Indians on the Mexican Sierra Madre” (Preuss, 1907), “Mescal the divine Plant and its psychological Effects” (Klüver, 1928 from Yensen, 1996) brought in a further aspect. These works pointed out that even if these plants may cause insanity they are recognized to be valuable in a way and acquired a divine aspect in traditional societies.

Slowly one even began to find interest in a non-scientific context for the extraordinary effects of mind-altering substances as described in research reports. Especially intellectuals and artists have dared to experiment with them. Their experiences were not often psychosis-like or setting loose fear, but fascinating and constructive and sometimes became a source of inspiration of important artistic works.<sup>7</sup>

### **3.3 The discovery of LSD and different research paradigms**

Albert Hoffmann discovered the psychological effects of LSD by randomly taking it in 1943 having synthetically created it in 1938.

As the chemical company Sandoz began to market LSD among psychologists for their research and therapeutical means worldwide, researching the psychological effect of mind-altering substances was catalyzed. In this context self-experiments with LSD were propagated, too, to reach a better understanding of its effects.

#### **3.3.1 Second flowering of the psychotomimetic paradigm**

It may well have been the discovery of Mescaline accompanied by the psychotomimetic paradigm in the early 19. century, that first trends in research were to describe and research LSD as an additional model-psychosis inducing agent. While researching mescaline, however, other facets of effects triggered off by LSD were not paid attention or were pushed aside. Thus one interpreted “out of body experiences”, that Albert Hoffmann mentioned in his reports about his first experiences with LSD, as depersonalisation-symptomatics and hallucinations. One took not into account that it could be about a genuine phenomena, whose research from a different perspective would be worthwhile (cf. Yensen, 1996).

In relation with the psychotomimetic LSD-research the theory - developed by Kraepelin, Serieux & Jelgersma (1892, from Yensen, 1996) around the turn of the century - that schizophrenia and catatonia are caused by endogen intoxication, was taken up again gaining a new scientific basis.

The biological model of psychosis emergence through an intoxication by endogenic druganaloga, the so-called transmethylical hypothesis of schizophrenia emergence became more and more popular and replaced the psychoanalytical model. One also began to search for other pharmacological therapy

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<sup>7</sup> Popular authors who gained inspiration via entheogenes are e.g. Charles Baudelaire; Hermann Hesse, Artur Rimbaud, etc.

forms treating psychosis and mental disorders. Thus research of mind-altering plants formed the basis for psychopharmacological psychiatry with all their positive effects on new ways of treatment. However, it did so not without their graving side-effects. (Weatherford, 1995 from Rätsch 1995a).

By the help of recently developed psychopharmaceuticals and psychotomimetica one thought to have found the key to the understanding of the mystery of schizophrenia and other psychic disorders.

Although, as it was discovered later, there are also great psychosis-like factual differences provoked by mind-altering substances (cf. Hermle etc., 1993;Yensen, 1996) and that they are only one facet of a complete spectrum. Yet psychotomimetic paradigms still bear good reasons to be applied in the research of mind-altering substances.

### **3.3.2 The psychological paradigm**

The psychotomimetic paradigm of the fifties was followed by the psycholytic one. This one came into being by the papers of pioneers\* who had made use of LSD lo-doses as a support of psychoanalytically oriented psychotherapies successfully. The term “psycholyse” (lisis = Greek for dissolution) refers to dissolving psychic tensions and conflicts, which can be achieved by the use of LSD. The psychotherapists mentioned above could clearly make out positive effects as there are the shortening of the therapy’s duration, a possibility to get access to chronically introverted patients to solve emotional blockades, the understanding of subconscious “material” and cathartic effects (Yensen, 1996).

Sandison, Frederking, Leuner etc. joint together to form the “European Medical Society of Psycholytic Therapy” that should make the psycholytic therapy a “scientifically based therapy that also practically takes place on a large scale”. (cf. Leuner, 1987, p. 154).

The psycholytic therapy is characterized by administering 2-100 times low to media doses of LSD or similarly effective substances (e.g. mescaline, psilocybin) on the scale of a psychoanalytical or psychoanalytically oriented psychotherapy to facilitate and shorten the therapeutic process. Most mind-altering substances are integrated into a psycholytic paradigm to gain access to the personal subconsciousness of patients. Sandison Whitelaw and his colleagues with a Jungian orientation discovered the healing aspect of the therapy encountering the healing archetypes of the collective subconsciousness while dealing with neurotic patients. Yet they remained outsiders of the psycholytic school with their view. Most “psycholytics” interpreted slightly mystical experiences to be wish-

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\* Busch & Johnson (1950), Frederking (1953), Sandisan & Whitelaw (1954), Leuner (1958) etc.

fulfillments or regressive defense mechanisms that are supposed to protect. Archetypal material was thought to be a psychotic defense mechanism and to be related to an overdose.

Critics of the psycholytic therapy discovered its limits during an LSD-session of an analytic who focused too much on occurring unconscious “material”. One also had to wonder if the analyzed phenomena – including the great therapeutic success – may be referred to mere suggestion than “real therapeutic effects”. Freudian therapists, for example, did quite often observe that patients talk of returning childhood memories, whose interpretation improved their symptoms. Patients of Jungian therapists on the other hand had much more often transcendental experiences they experienced to be healing. Interestingly enough transcendental experiences of Freudian therapists, however, are not always accompanied by an improvisation (Hartman, without date, from Yensen, 1996).<sup>9</sup>

Despite of this the psycholytic paradigm was reproached that there are more anecdotic clinical reports on therapeutic effects than controlled clinical studies provided by representatives of the psychotomimetic paradigm. Moreover they proved, that, as soon as higher doses of LSD were used, experiences could not longer be classified into the theoretical context of classical psychoanalysis. One needed a new paradigm to be able to come to terms with these “new dimensions of consciousness” one had reached so far.

### **3.3.3 The psychedelic paradigm**

The surprising results of a Canadian study opened a whole new perspective researching the therapeutic potential of mind-altering substances that were administered to chronic alcoholics. Supported by the psychotomimetic hypothesis one thought that states similar to *delirium tremens* could be induced by high doses of LSD. Astonishingly enough, most patients did not experience possible horrors but in fact told from mystic experiences, which were indescribably beautiful and valuable offering them insights into the sense of life (Hoffer & Osmond, 1967, Osmond, 1953, 1969 from Yensen, 1996). Being based on these results another paradigm came into being for which Osmond coined the term psychedelic (Greek = revealing mind, spirit and soul) and in which high doses of LSD (later also mescaline, psilocybin or similar substances) were used.<sup>1</sup> Thus mystical experiences, so-called peak-experiences, that were regarded to be therapeutically effective, should be made accessible for patients. They often led to far-reaching positive changes of the patients’ personality.

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<sup>9</sup> The fact that the test subjects of psychotomimetic researchers had mostly scattered, dreadful experiences (Hoch, 1957 after Yensen, 1996) and that the experiences with psychedelic plants in traditional cultures, into which they are embedded, depend strongly on the cosmology of this culture, shows that this is not a specific problem of the psycholytic therapy than generally of the influence of a paradigm on the effect of mind-altering substances. As it seems the novel situation caused by the taking of these substances and the high suggestibility during the altered state of consciousness makes people especially open to hints from the environment on how the altered state of mind should be interpreted.

<sup>10</sup> On the psychedelic therapy cf. also 7.3.

„Our conception is that alcoholics live an inauthentic existential modality (i.e. alienation), and that illness arises from an inability to see meaning in life. LSD provides an encounter which brings a sudden liberation from ignorance and illusion, enlarges the spiritual horizon and gives new meaning to life“ (Savage, 1962, cit. after Yensen, 1996, p. 11).

Consciousness-altering substances were now not only regarded to be worthwhile to study psychopathology but also to throw light upon one of the biggest philosophical mysteries of human kind – the sense of life. Thus the scientific research of mind-altering substances had approached the traditional shamanic perspective like never before.

The new approach however did not fit into the framework of conventional psychiatric theories with fixed roles of patient and therapist anymore.

„By blurring the boundaries between religion and science, between sickness and health, between healer and sufferer, the psychedelic model entered the realm of applied mysticism“ (Grob, 1995, p. 101).

This was exactly the reason why the representatives of the psychedelic paradigm were criticized harshly. One reproached them with uncontrolled unscientific methods. Above all one criticized self-experiments of therapists and researchers that were regarded to be important in this paradigm more than in the psycholytic and psychotomimetic one. Self-experiments, according to critics, would lead to the point where they would fall in love with hallucinated mystic states and thus became unqualified researchers (Grinker, 1963, after Yensen, 1996).

Also the fact, that mind-altering substances got out of control of the medical elite in the course of the evolution of the psychedelic model becoming increasingly popular in wide circles of the population met harsh criticism.

### **3.3.4 The rediscovery of the shamanic usage of mind-altering plants**

LSD and mind-altering effects triggered off by LSD were said to be a new insight for science in wide circles until the western world became increasingly attentive of the historical roots of the mind-altering plants' usage. An important function in this respect had amongst other things Wasson's "discovery" and systematic study of prehispanic healing rituals involving psychoactive mushrooms in Mexico's Mazatecic Sierra. It even proved twenty years after the discovery of LSD, that the chemical composition of this "new" drug is strikingly similar to the consciousness-altering seeds of the funnel hoist, *Turbina corymbosa*, "ololiuhqui" that was used by the Aztecs in ceremonies (cf. Schultes & Hoffmann, 1980). Although explorers had mentioned ever and ever again the ceremonial usage of mind-altering plants in indigenous cultures and single scientific works, which were concerned with the topic interdisciplinary (cf. e.g. Klüver, 1928). However, it was not before the fifties that one began to deal with the traditional usage of sacred medicinal plants on a larger scale. Numerous ethnological works on this topic came into being. Among the pioneers of the ethnological research of mind-altering

substances were authors like Pablo Blas Reko, Weston La Barre, Johannes Wilbert, Peter Furst, Michael Harner and Carlos Castaneda<sup>2</sup>.

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<sup>2</sup> Important in this respect was amongst other things an exam paper published at the university of Los Angeles at the beginning of the sixties by the Peruvian anthropologist Carlos Castaneda about the use of medicinal plants among Mexico's Yaqui Indians. This report about his field-study in Mexico that became an initiation process with the Yaqui "man of knowledge" Don Juan Matus was followed by several volumes about his ten-year-long apprenticeship that Castaneda described step by step. The books sold enormously well and triggered off a real boom. They caused a stir, however, were sharply attacked by many scientists and are especially disputed because of the alleged authenticity. A mystic veil laid over the person of Castaneda.

The Peruvian anthropologist describes how new dimensions opened to him by peyote *lophophora williamsii*, psilocybin containing mushrooms *psilocybe mexicana*, thorn apple *Datura innoxia* and *Datura meteloides* at first and later by meditative techniques and the sensual experience of esoteric knowledge. Don Juan thought, according to Castaneda, sacred plants to be necessary to free his apprentice Carlos from his excessive intellectuality and fixation on the scientific worldview, since he would be too little sensitive towards other forms of the exertion of influence without these means of aid. The knowledge that Don Juan taught him should lead to the changing of the individual view of the world, to the stopping of the "internal dialogue", to the keeping away from the banality of the everyday life, to the seeing of every action to be the last battle on earth, to erase one's own personal history, i.e, to free oneself from burdening events of the past, to live in humbleness, to recognize death to be an advisor and finally to reach to thinking with the heart like a man of knowledge enabling one to advance to new dimensions of the consciousness.

### **3.4 The youth revolt of the sixties and repression of the usage of mind-altering substances**

Under the influence of amongst other things religious-psychological researches at the Harvard University wide masses of the population began to experiment with mind-altering substances. Until the seventies, when psychedelic drugs arose the attention of the public due to the cultural revolution, the main part of the western population had not had any interest for these substances. "Psychedelic drugs" however became now a driving force in connection with the peace movement of the hippie culture against the values of the establishment. The intellectual fathers of the hippies like Timothy Leary had ever and ever again emphasized the careful handling with set, setting and dose, but as a consequence of the own momentum of this spontaneous process, the inexperience with these substances, impure substances and the amateurish designing of set and setting numerous accidents happened bringing along psychic damage of their users. The image tabloids were mediating was coined by accidents and psychotherapeutic complications. Here the term "drug subculture" with all it's negative connotations came into being.

The positive consequences of the informal use of mind-altering substances, however, received in this time as good as no respect by the press forming the opinion of the population's main part.<sup>3</sup>

In an almost dramatic reaction against these substances and the threat that they represented they were condemned by the state and many representatives of science and medicine. As it seems, this was rather based on a political motivation than on objective insights. Now numerous medical reports were published which drew a gloomy image of the dangers of these substances and their side-effects. Many of the statements, which were made in these reports, however, were like the one, that they would be dangerous for the psychic health of the population, undifferentiated and exaggerated; others, like the one, that they would damage chromosomes, were, as one found out later, groundless (cf. Leuner, 1987).

There were certainly some cases, whose use of mind-altering substances had conceivably destructive effects for the persons affected due to unfavorable sets and settings.<sup>4</sup> However, it seemed to fall into

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<sup>3</sup> Not before today some scientists are drawing attention to the creative and constructive potential that may be set free handling them in the right manner. Mind-altering substances were decisively involved in healing processes, the emergence of new creative perspectives in music and the graphic art and the development of new lifestyles during this time (cf. Andritzky, 1993, p.20). Interestingly enough, some of the experiences, which have been made in connection with psychedelic substances, were similar to aspects of their usage in traditional cultures. Thus they were considered to the suffering of the establishment as a source of spiritual experiences. Even a real culture with egalitarian non-hierarchical forms of organization developed around drugs as one finds them in traditional shamanic cultures, too and own values with emphasis on peace, love, harmony and respect towards all forms of life.

<sup>4</sup> However, these unfavorable circumstances did not always take place on the scale of an „informal use“. There, for example, as one uncovered later, had been arranged LSD-researches for the military and the CIA in the

oblivion, that, as many years of research had shown, a constructive handling of mind-altering substances is perfectly possible if set and setting are observed.

„Thousands of papers written on the hallucinogens in the fifties and sixties, ... demonstrated their safety under controlled conditions and pointed to their efficacy in many conditions, including those refractory to conventional treatments” (Grinspoon & Bakalar, 1979, cit. after Grob & Bravo, 1996, p. 134).

R. Kennedy, whose wife had received an LSD supported psychiatric treatment, posed this question in front of the American congress in spring 1966:

„Why if they were worthwhile six months ago, why aren't they worthwhile now ? I think we have given too much emphasis and too much attention to the fact that it can be dangerous and that it can hurt an individual who uses it that perhaps to some extent we have lost sight of the fact that it can be very, very helpful in our society if used properly” (Lee & Schlain, 1985, cit. after Grob, 1995, p. 103).

Nevertheless the World Health Organization arranged in 1966 in Geneva that “hallucinogenic effective substances” were equated with “hard drugs”. The same substances, which were said to be a promising tool for the decoding of the mysteries of the brain referring to health and sickness, now became substances of a high potential of abuse and no medical use at all. They received connotations of illegality, addiction, personal and social disorganization and criminality. Despite (or especially because of?) the prohibition the informal traditional use of mind-altering substances, however, remains in often conceivably unfavorable settings, accompanied by a lack of information and impure substances, a social fact of the youth culture.<sup>5</sup>

The legal control banned mind-altering substances even from therapy and research. Scientists, who showed interest for this field or, even worse, betrayed their attitude, that mind-altering substances have a positive clinical potential, were threatened by professional marginalization.

During the eighties the situation aggravated so much in connection with the “war on drugs”, that therapy forms supported by mind-altering substances were abdicated any therapeutic efficiency.

A veil of silence had lain over the role of mind-altering substances in psychiatry and psychotherapy. However, there were some few exceptions (e.g. Grof, 1976, 1980; Grinsponn & Bakalar, 1979; Strassmann, 1984, 1991; after Grob & Bravo, 1996). Many scientists changed their opinion about mind-altering substances as a consequence of the pressure completely. Only animal experiments were legal. In which framework one now studied the neurotransmitter interaction and the effects on behavior (Aghajanian, 1994, after Grob & Bravo, 1996). The results from these experiments, however, are only limitedly transferable to human beings. While any research was prohibited without exception

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fifties, which were executed in unethical ways with involuntary test subjects in conceivably unfavorable settings. These tests partially led to heavy psychic damage of the test subjects and even to suicide (cf. Grob, 1995, p. 98ff. ).

<sup>5</sup> Next to the abuse and wild experimenting even a constructive handling of mind-altering plants developed and even their ritual usage in healing ceremonies can be observed in the Western industrial countries again (cf. e.g. Rättsch, 1995b)

in the US, some few psychiatrists, like Leuner (1983) and Bastians (1983), were able to continue their psychotherapeutic work with mind-altering substances, that they had begun in the fifties, until the eighties in Europe. Since 1988 a small group of psychiatrists were allowed again to use LSD, psilocybin and MDMA in psychotherapeutic treatment. Before the big ban these substances had been used on a relatively large scale with mostly positive results in therapy. During the fifties mind-altering substances were used with about 40,000 patients. Different psychic disorders were treated, especially with other methods only hardly or non-treatable and terminal sick, whose stress could be relieved. Moreover one had high hopes of researching different mental phenomena, which were induced by these substances. One had great expectations to understand better by their help the brain's functioning while sane or sick and to get access to realms like mysticism, spirituality, creativity and dreaming, which are remote to science. All these topics of research were not scooped out at all or became current only as the prohibition of research was given. Thus there are still many gaps of knowledge in this field.

### **3.5 The permission for the resumption of the research and the search for a new research paradigm**

For about ten years, although under strict restrictions, basic clinical research work of the effects of "halluzinogens" like MDMA, mescaline, psilocybin and cetamine with non-clinical populations have been legal again (cf. Leuner & Schlichting, 1989). Even in the united states the legal screw for the scientific research of mind-altering substances has been loosened gradually since the nineties. Thus their research with humans may be resumed. However, studies may take place in a very narrow framework only. In this way Phase I research guidelines (human safety), for example, are limiting researches to non-clinical populations who have already made experiences with mind-altering substances (cf. Grob, 1995).

Reasons for the renewed permission of research have been amongst other things the sharply increasing consumption of mind-altering substances since the end of the eighties. This the national authorities are observing with worry. Mainly it is about designer drugs among which MDMA "ecstasy" - or what is thought to be it – is especially popular.<sup>6</sup>

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<sup>6</sup> MDMA was synthesized for the first time in 1912, but it was not before the late seventies that it was used in therapy (Eisner, 1989; Tolber & Greer 1992; after Rättsch, 1995b). Psychiatrists who work with MDMA saw these substance's therapeutic function above all in it's potential to relax defense mechanisms, to facilitate the access to emotions and to promote trust for the therapeutic relationship. Because of its specific effect some researchers preferred to call MDMA "entactogen" (to touch within) rather than "hallucinogen" (Nichols, 1986 after Grob & Bravo, 1996). MDMA seemed to be especially effective with depressions, forced disorders,

Because of the abuse's negative effects or the ignorant use of MDMA and other mind-altering substances research is hardly focusing on the therapeutic potential of these substances but mainly on possible dangers like neurotoxicity.

There are, however, some few clinical research projects on the therapeutic potential. Examples for this are the research of the effects of DMT on neuroendocrinological, physiological and psychological parameters (Strassmann, 1991 after Grob & Bravo, 1996), the comparison of the therapeutic effects of low vs. high doses of LSD in the treatment of substance abusers, the research of the "peak experience" as a therapeutic effective factor (Kurland, Yensen & Dryer without date, after Grob & Bravo, 1996), the therapeutic use of ibogain in drug therapy (Sanchez-Ramos & Mash, after Grob & Bravo, 1996), the long-term effects of the use of ayahuasca in traditional cultures (cf. Grob et al., 1996) and others.

Some researchers see a great chance in the revival of the therapeutic usage of mind-altering substances (cf. Winkelmann, 1996; Grob, 1995). However, they emphasize the necessity to learn from past's mistakes to prevent a renewed prohibition of research.

More and more often the necessity in this context is stressed to examine more intensively the ritual usage of mind-altering plants in traditional cultures and to learn from the empirical knowledge of traditional medical systems thousands of years old:

"It will also be critical to learn from the wisdom accrued over the ages by the aboriginal practitioners of shamanic healing, for therein lies the benefits of thousands of years of experience with hallucinogenic plants" (Grob, 1995, p. 92).

Especially in reference to non-pharmacological variables, which acquire such a big importance with these substances and which are an integral element of the shamanic model as well as in reference to unknown clinical possibilities of usage in the West, one is promising new perspectives:

„To move beyond the commonly held psychiatric viewpoint, that shamanism is nothing more than primitivism and the prehistorical wellspring of mental illness, would allow for receptivity to learn from a paradigm which has incorporated for thousands of years the utilization of hallucinogens as a vital facet of belief systems and healing practices“ (Grob, 1995, p. 106).

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posttraumatic burden disorders, for pain and fear reduction with cancer patients and for the reduction of defense attitudes in pair and group therapies (Adamason & Metzner, 1988; Greer & Tolbert, 1990 after Grob & Bravo, 1996). During the eighties MDMA became increasingly popular even outside of the clinical setting in the New-Age scene and among Sanyassins (followers of Baghwan/Oshu). They appreciated "ADAM", as they called MDMA, especially because of its love promoting and socio-therapeutic effect. However, MDMA did not become really famous when it was prohibited on the pressure of the US. Parallel to criminalizing MDMA, it became the dance drug of the rave-techno scene where now there have been unfortunately circling impure substances synthesized by scrupulous underground chemists. MDMA, or what is thought to be it (e.g. MDE, MDA amphetamine derivates with the most divergent adders) is said to be "the" drug of the nineties under the name of ecstasy. Due to its excessive use, inexperience with its constructive handling and set and setting, dangerous adders etc. it led to numerous complications and some deaths.

#### **4 The ritual usage of sacred medicine plants in shamanism**

“There is a world above ours, a distant and yet close invisible world. And there god lives, live the dead and the saints – in the world where everything has already happened and everything is known. This world tells. It talks with its own language. I report what it tells. The sacred mushroom takes me by the hand and leads me into the world where everything is known. It is them, the sacred mushrooms, who talk in a language understandable for me. I ask them and they answer. When I return from the voyage with them, I report what they told and showed me” (Maria Sabina, cit. after Schultes & Hoffmann, 1980, p. 144).

##### 4.1 What is shamanism? – Attempt of a definition

“Shamanism is not simply a collection of elaborate rituals, ordeals and pathological personalities, at its fullest shamanism is a dynamic connection into the totality of life on the planet” (McKenna, 1992).

The word “shaman” is taken from the language of the Tungese of East Siberia and means approximately “one who knows” or “one who heats, excites or lost one’s self-control”. First, it describes medicine men and women of north and middle Asia, later, however, it was transferred to various healers worldwide by anthropologists as a collector’s term.

Shamanism is said to be the oldest religious, medicinal and psychological discipline of human kind.

Shamanism is rooted in a worldview according to which the visible world is deeply influenced by spiritual forces and entities, that certain people can meet in ecstatic trance personally. “All primal peoples believe that we are not able to grasp the full being of reality by our senses. For them, as for all of human kind, until a few centuries ago, there is no doubt in having to consider other forces to explain that what happens here on earth. We can not perceive them by our normal consciousness but they are the actual causal factors of the observed events” (Kakuska, 1983, p. 62). This world has almost always been described in spatial metaphors, e.g. the upperworld and the underworld, the next world, the world beyond things, the realm of spirits and ancestors. For the Western mind perhaps a description with the hidden aspects of the world or different reality is most suitable.

In the service for their people shamans are mediators between the other and the reality of the everyday life. In the few tribal cultures, where shamanism has survived,<sup>7</sup> they often function - next to their role as healer - as visionary, prophet, fortune teller and as artist, dancer and musician making the invisible world visible and the inaudible one audible. Moreover, they are responsible for influencing the good

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<sup>7</sup> Most tribal cultures with a shamanic tradition have disappeared as a consequence of their habitats’ destruction or are damned to miserable life conditions. Therefore there are only 6% of non-industrialized peoples existing anymore. Century-long discrimination and the ignorant introduction or rather the slipping over of Western cultural elements has led to a destroyed self-consciousness and to the undermining of their cultural identity in many of the few surviving cultures. Shamanism, of which laws, techniques and concepts are closely bound to an indigenous reality, that has dramatically changed through the contact with the Western world and the loss of land, the handed-down systems of production, traditions, clothing as well as language, has changed in the course of time, too. The way it has been, the shamanic system seemed to be able to reach an optimum adaptation to their natural environment and was effective for the prevention, diagnose and therapy of the most diverse diseases. However, new factors, which are unknown to the shamanic structure, change the rules.

fortune during the hunt, the determination of the right time for sowing and harvest, the regular carrying out of rituals, the keeping of myths and maintaining the social, psychic and physical balance of their people. In rituals they stage and renew the myths, which are the fundamentals of traditional cultures, through the direct individual experience of the other world from which they gain.

Many scientists consider altered states of mind, which man had learned to use specifically in shamanism and in which reference there is ever and ever again reported about the personal experience of mystic realities, to be the common source of religions.<sup>8</sup> These, on the other hand, are considered to be the cultural extension of shamanic ecstasy:

“Every religion – this is a historical fact – began with the ‘revelation’ of a single one – from his dream, fugue or his ecstatic trance” (La Barre 1972, cit. after Rätsch, 1989, p. 257).<sup>9</sup> When and where the origins of shamanism are is uncertain.<sup>10</sup> It is remarkable, however, that one finds in almost all parts of the world traces of shamanism and that shamanic actions are strikingly similar in spatially and temporally very distant traditions.<sup>11</sup>

To explain this fact common historical, social and/or psychological origins are considered. Some researchers explain the similarity of different shamanic traditions by the person’s inherent tendency to enter different states of mind; „Shamanism is an aspect of the universal cultural adaptations of humans to the biological potential for altered states of consciousness“ (Winkelman, 1991). The skill of mystic seeing and sensible working with other states of mind is said to be human potential in general, for

“the psyche’s structure of all humans is principally the same... The shaman’s transpsychic insights and his paranormal powers do not depend on historical or cultural factors, they belong to the potencies of the human psyche as such. On the other hand they are subject to social embedding, interpretation and transfiguration” (Kalweit, 1988, p. 258).

#### **4.2 The shamans’ career**

In traditional cultures the actions of a shaman are the expression of a special gift that was developed through a long procedure of initiation, discipline and training.

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<sup>8</sup> Almost everywhere shaman actions had been oppressed by organized religions and/or complex national systems and could only survive in the underground. The direct experience of the spiritual world in the ecstatic voyage of shamans, who are their own prophets, seems to have been valued potentially subversive and as such dangerous. The priests have in comparison to their shamanic ancestors mostly little experience with altered states of mind.

<sup>18</sup> Man tried in probably all cultures to establish contact to the spiritual world through visions and experiences. Religious visions were even known in our culture. Famous visionaries of Christendom are e.g. Theresa von Avila, Hildegard von Bingen or Jan van Ruysbroec.

<sup>19</sup> For some researchers shamanism is as old as the human self-understanding, others define the point of time of its coming into existence more precisely considering its roots to lie in the Palaeolithic and Mesolithic.

<sup>11</sup> Thus one finds in shamanic cultures worldwide similar concepts like the world’s pantheism, the separability of the soul from the body and the supernatural cause and healing of diseases. Also initiatic experiences, during which the novice is exposed to psychic and physical borderline situations, shamanic voyages and their cosmologies of the upper- and underworld as well as these inhabiting spirits, spirit helpers and protectors and the establishing of contact to them, are similar worldwide.

The patterns of the initiation with death and reincarnation experiences are very similar in their fundamental characteristics of the world's different shamanic cultures. The initiation of a shaman is often bound to hard crises, dreadful states in an altered consciousness, death and reincarnation experiences etc.. This makes this calling rather seem to be burden than a mercy. After their recovery novices are stronger than before. "If they [the shamans] have cured themselves and are able to cure others, it is among other things, for they know the mechanism or rather the theory of illness" (Eliade, 1975, p. 31).

The shamanic training's central elements are the specific promotion of the occurrence of visual imagination through different psychological and physiological techniques as well as techniques to control visions (cf. Noll, 1985).

"The shaman is a specialist whose expertise derives from the unique contact with and manipulation of forces or agencies, experienced in visions as autonomous or semi autonomous which generally can not be contacted and manipulated in his ordinary state of waking consciousness" (Noll, 1985, p. 449).

In this way, shamans learn to control altered states of mind and to grasp complex facts, myths and rituals in a unique way. A main part of the knowledge that a shaman needs for his work can not be mediated by another person but only be achieved by profound self-experience. Introspection has a central status in the shamanic training.<sup>12</sup> Thus the Huichol marakame (shaman) Don Jose Matsuwa explains: "I cannot teach the things of the divine world. One learns these things only in loneliness" (cit. after Halofax, 1995, p. 269)

During the time of the initiation shamans come to know the mystic geography of their people, confront themselves with the powers of the under- and upperworld winning spirit helpers and protectors for their later work. Intellectual and artistic skills are trained, medicine chants taught and a wide knowledge of medicine plants acquired.

The training of a shaman often lasts a whole life and never ends. The Huichol marakame (shaman) Don Jose Matsuwa says after 64 years of training: "I am a very, very old human being, but nevertheless still a baby full of astonishment and admiration for the mystery of life" (cit. after Halifax, 1995, p. 267).

#### 4.3 The shamanic art of healing

"I do not know what you have learned from your books, but the most important thing my grandfathers taught me, was, that there is a realm in our soul about which we just know very little and that it is just this realm that decides about us being healthy and sick" (T. Largewhiskers, medicine man of the Diné (Navajo)).

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<sup>12</sup> In earlier times introspection was said to be an important factor for the well-founded pursuit of a profession in the West, too. Today, however, the accumulation of a wide range of knowledge is found almost explicitly important in Western medical and psychological training – the subjective life of the doctor or psychologist is hardly of any interest.

The world's different cultures created numerous of concepts and models about the nature of health, disease and healing. These are based on different paradigms.

In shamanic cultures supernatural models for the explanation and causes of diseases like the loss of one's soul, curses, taboo violations, etc are dominant. The healer's concepts of treatment and the patient's expectations are in close connection with these ideas. The supernatural influencing of the disease's events is in the limelight. As specialists of the interaction with the supernatural world shamans are highly respected among their peoples:

„Shamans hold a position of supernatural power and prestige within their cultures that is unparalleled in our own, playing a role in both individual healing and in the collective quest for meaning of the group. As healers shamans make clever use of this powerful position in a holistic approach to illness, which attends to distress in the socio-familiar fabric and the individual psyche“ (Yensen, 1996, p. 112).

The habitual distinction of physical and mental sicknesses and medicinal somatic and psychotherapeutic interventions respectively do not exist in this concept of treatment. A central point of shamanic healing is, that the human being is always seen holistically, i.e., as a being with body, mind and soul(s), that is embedded into a complex social and cosmological context. From this perspective many diseases are the consequence of a loss of the balance between these different levels. Through healing rituals this balance is supposed to be reestablished.

“Thus the shaman acts as someone who seeks the integrity and balance of powers, as someone who binds, joins and integrates between the three worlds (upper-, underworld and the daily world), between humans, humans and ancestors, gods and daemons, animals and humans, body and mind, sickness and health, life and death” (van Quekelberghe, 1997, p. 13).

Healing rituals, however, do not only serve the purpose of healing diseases and symptoms but also of having a healthy human being become healthier, i.e., that

“healing does not need the reason of sickness or a manifest disorder but represents a continuing procedure from the day of the birth, that does not mean anything else than a perpetual awareness of any human being's relationships to his next ones, the environment, earth and cosmos” (Andritzky, 1993, p. 95).

#### **4.4 Sacred medicinal plants as vehicles into other realities**

Shamanic healing mainly takes place in altered states of mind, which the shaman learned to control specifically as a specialist of ecstasy.

To be able to look beyond the things' surface the different peoples of the earth developed techniques like fasting, concentration, meditation, isolation, ecstatic dancing, singing, drumming and or the controlled usage of sacred medicinal plants.

Especially Middle and South American shamanism is closely connected to the usage of psychoactive plants, which are used ritually and which are said to be sacred because of their intense influence on the consciousness. In the “new world” more than 130 kinds of sacred medicinal plants are, whereas in the old world, as far as one is concerned, only 20 kinds were used for ritual purposes. However, one

assumes that there are at least as much psychoactive plants, which have not been discovered and used (yet).<sup>13</sup>

In many traditional societies sacred medicinal plants play an essential role in the preservation and strengthening of elemental contents of belief and have a strong sociointegrative function (cf. Andritzky & Trebes, 1996). Many traditional cultures' myths are part of a culturally specific system of beliefs, into which the taking of mind-altering substances is integrated and where a kind of mystic solidarity exists between plant and human being.

The plants are the source of many cultures' therapeutic and cosmological knowledge. States of mind induced by plants were the basis of religious and mystic experiences out of which big and small cultures came into existence.<sup>14</sup> What would the world of the Andes be without coca, Mexico's Huichols without peyote, the North American peoples without tobacco and the Indians of the Amazon without ayahuasca, napo and toe?

Although altered states of mind induced by pharmacological methods are very similar to those induced by psychological procedures in terms of quality (cf. 6.5; 6.6.), there is quite a number of reservations against pharmacological ecstasy induction and differences about which of the ecstasy techniques are older and more valuable with regard to quality. The history is coined by a controversy between advocates of mind-altering substances, which they appreciate to be potentially constructive means to gain insights and means of healing, and fierce opponents, who consider them to be dangerous and misleading.

For one side the thought, that real mystic experience or healing could be awakened in one way or the other by so-called drugs, is obscure; and in comparison to techniques like meditation the use of drugs is said to be a more artificial and simpler way. Even some Western researchers like Mircea Eliade describe the shamanic usage of sacred plants as a degenerated form in contrast to psychophysiologicaly induced ecstasy (cf. Eliade, 1975, p. 212, 382).

This is objected that this judgment is based on an ethnocentric attitude that came into being in a culture where drugs are always associated with abuse and that has a tradition dating back to the

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<sup>13</sup> La Barre developed an explanation to answer the question, why the ritual usage of sacred medicine plants is wider spread in the "new world" but also why there are much more hallucinogens (80-100) known than in the old world. Actually, one would expect an inverse ratio because of Eurasia's bigger landmass and at least an equally rich flora and fauna, where more psychoactive plants must have had been discovered because of its longer lasting settling. While religious and socioeconomic changes in Eurasia sharply oppressed the usage of ritual medicine plants the Eurasian paleomesolithic shamanism developed uninterrupted, as one assumes, coming with the mass migration to America. The cultural programming (visionary and ecstatic experiences with fly agaric *Amanita muscaria* played and play an important role in the Eurasian shamanism) has led to a conscious research of the environment for substances, which could provoke ecstatic trance and the personal encounter with the supernatural. (La Barre, 1970, after Furst, 1980).

<sup>14</sup> It is assumed that sacred plants were a cornerstone in the foundation of many religions (Wasson, 1957).

persecution of the usage of sacred medicinal plants by the Inquisition. A culturally immanent evaluation of “drug healers to be of a lower category” does not exist in tribal cultures (Andritzky, 1993, p. 18).

There are much more references to psychological and pharmacological techniques of induction of ASC to have developed parallel but not evolutionary step by step and that pharmacological methods are not more primitive than psychophysiological ones (cf. Wasson, 1971; La Barre, 1972 after Rosenbohm, 1991).

If one is able to perform the work of a shaman who has received a real initiation into this knowledge by the help of these plants or if one observes the sophisticated technologies and elaborate ceremonies unbiased, which have developed around these plants, the work with sacred medicinal plants represents rather one way next to others to use altered states of mind specifically.

The right knowledge of handling these sacred medicinal plants, however, is hereby essential. In this way, sacred medicinal plants are said to be a sacrament in traditional cultures and are never taken without preparation and almost exceptionally in ceremonies under the supervision of a shaman.

As long as the rules of handling these plants are observed they are said to be harmless. Unpleasant experiences or threatening visions are considered to be consequences of unclear intentions, an impure heart, disrespect, a curse, a ritualistic purification carried out incorrectly or the violation of a taboo. This may even provoke insanity. To be able to experience the positive effects of sacred medicinal plants the ritualistic context, as it is ever and ever again emphasized, is an indispensable requirement. This is how the American anthropologist J.S. Slotkin puts it:

“The mere taking of peyote does not bring knowledge along yet. Only with the correct ritualistic behavior one achieves knowledge from peyote. One has to be pure physically; one has to be bathed and wear clean clothing. On the spiritual level one has to break with all evil thoughts. And looked at it psychologically one has to become aware of one’s own insufficiency, one has to be humble, have the honest wish to learn from peyote and concentrate on it” (cit. after Tedlock, 1978).

With an adequate preparation and in a suitable framework the experiences, which can be made by the taking of sacred medicine plants, are not at all mere hallucinations, but coherent, guided, laden with a certain intention and imply almost always an integration into the “earthly world”.

The experiences may be of great depth. Thus the Mazatecic shaman Maria Sabina tells: “The mushrooms give me power to see it all at full. I can look down until the origin. I can go there where the world arises” (cit. after Estrada, 1981, p. 72ff).

At another passage she explains:

“The deeper you get to the bottom of Teonanacatl’s<sup>15</sup> world, the more things you see. And you see the past and future, too, which are then already united, already ready, already happened.... I saw and knew millions of things. I recognized and saw god: a huge clock that is ticking, the slowly turning heavenly spheres, and within the stars, the earth, the whole universe, day and night, crying and laughter, happiness and pain. One who looks through the secret of Teonanacatl fully may even see the infinite clockwork (cit. after Schultes and Hoffmann, 1980, p. 2).

Not everyone who takes a sacred medicine plant experiences an ecstatic voyage of the soul or can communicate with the spiritual world.

Maria Sabina puts it this way: “The mushroom equals your soul. It leads you to where your soul wants to go.... Many people of the Sierra took it but not everyone enters a world where everything is known” (Halifax, 1995, p. 166).

The most important areas of shamanic actions as well as the application of sacred medicine plants is diagnosis and the healing of diseases. Often, healing treatments with sacred medicinal plants are started when profane treatments have failed.

Moreover ceremonies with sacred medicinal plants are executed for the most divergent means. These contain for example: fortune-telling, influencing the good fortune during the hunt, the search for solutions of family conflicts, establishing contact with the ancestors, influencing of natural powers, creative inspiration etc..<sup>16</sup>

### 5 Psychological approaches to explain the therapeutic effects of healing rituals

Many of the phenomena of shamanic healing are difficult to grasp or to explain for a Western trained mind. However, they are effective with a lot of sicknesses. Would it not be so, this system could probably not have been maintained for thousands of years.

Having been branded as primitive for a long time, the endeavor to research indigenous methods of healing in detail from the side of Western medicine and psychotherapy has awakened recently. Reasons for this are, on the one hand, the desolate health care of “developing countries”, that urges to use specifically local resources as traditional medicine depicts them, on the other hand, however, also the realization that Western medicine and psychotherapy have reached their limits in many areas. Through the examination of other cultures’ healing traditions one hopes to gain new perspectives.

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<sup>15</sup> Teonanacatl is the indigenous name for the Mexican psilocybin containing mushroom *Psilocybe mexicana*.

<sup>16</sup> Even hunting dogs are administered certain sacred medicine plants under certain diet rules in some South American cultures to sharpen their senses.

In the following hypotheses for the healing power of rituals will be described. These are supposed to explain the effects for the human psyche of rituals in general and those of rituals involving sacred medicinal plants respectively:

### **5.1 Central features of rituals**

„Myths can be defined as imaginative narratives that deal with existential human concerns that have behavioral consequences. Rituals can be conceptualized as prescribed, stylized (often symbolic), step by step performance of mythic themes; as such, they attempt to promote social solidarity, provide for life transitions, and reinforce society’s values, belief systems, and rules of conduct. Rituals generally are performed in specific places, at definite times, by mandated persons” (Sullivan, 1988, after Krippner, 1996, p. 183).

A ritual can also be defined as an established or prescribed procedure that serves the completion of a religious or a different ceremonial act (A. Wallace, 1959, after Rosenbohm, 1991). The word ritual came into being from the words “ritus” “rite”, with which terms like right, sincerity and order are closely bound (cf. Pfleiderer, 1995, p. 3). Health and harmony express in many cultures that the human being lives in harmony with the laws laid by nature. Through rituals this order is supposed to be maintained or the disordered individual, social and cosmic balance reestablished. Rituals bind individuals to a larger group or movement, form a framework and a valve for stronger emotional reactions, create sacred spaces and times, secure the continuity between traditional traditions and values and confirm the right lifestyle according to the group’s moral concepts.

“Sometimes rituals become stereotyped over time, with an emphasis on form rather than on feeling in their performance; a ritual is alive to the extent that its performers passionately believe in its underlying myth-whether this myth is ritually enacted in an exact manner each time it is performed or whether the enactment is to some extent an improvisation“ (Krippner, 1996, p. 183).

Six elemental aspects of the ritual are according to Rappaport (1991, after Holz & Zahn, 1995, p. 10):

- repetition of content, form and action;
- action;
- stylization of behavior and symbols, so that they stand out from their ordinary application;
- order as a safe framework for the events;
- special outer presentation by which the participant’s attention is focused;
- collective dimension, i.e., a general cultural significance of the ritual.

In indigenous cultures myths and rituals have in contrast to the myth- and ritual-deprived industrialized cultures an important status in all areas of life – especially in the field of medicine, too.

Healing in a ritual is often an active process for the sick. “Ideally one may speak of a process of understanding, that the sick executes in his healing process. He is cured when he has overcome the state of ignorance due to which he got sick” (Pfleiderer, 1995, p. 4).

## **5.2. Therapeutic effective factors of rituals**

Different scientific disciplines, like e.g. psychological and medical anthropology, cross-cultural psychiatry or ethnopsychology etc. have tried to grasp rituals and their meanings. Hereby most divergent approaches have been developed.<sup>17</sup>

Approaches of explaining the general effect of rituals have to be seen as theories or hypotheses. There are hardly any empirical or statistical researches on the hypothetic effective factors with the exception of studies on the research of altered wake states of consciousness (cf. chap. 6). Moreover many phenomena accepted as natural in non-European cultures, which are observed in rituals, cannot or not completely be grasped or explained in scientific theories (although there is a number of Western scientists who experienced them).

The scientific method seems not to grasp especially when it is about spiritual-mental courses of events and reaches also its limits there, where the cultural worldviews are too different. However, to leave out what strikes as odd is problematic.

In indigenous health systems no suffering is explained or treated purely chemically, physically or symbolically but the human being is understood rather holistically in his "... spiritual-holistic context of reasons..." (Andritzky, 1989 b, p. 202). The efficiency of traditional healing rituals comes from the holisticity and integrity of a healing ceremony.

Thus no element of a health system should be researched isolated but should always be looked at in its functional relation to the other elements. According to my view this is especially true for sacred medicine plants, which are used in traditional cultures always in the ritual context. Probably the therapeutic effect of traditional healing rituals results in the so far not researched interaction of the different (scientifically recorded and non-recorded) effective factors.

Andritzky (1992) tried to determine therapeutic effective factors of traditional healing rituals in terms of the Western-psychological terminology in the course of intensive examinations of traditional healing methods in Peru. He assumed hereby a highly transcultural homogeneity of present effective factors in each case.

In the framework of process evaluation of the North-Peruvian Mesa-ritual, that involves the usage of the psychoactive cactus san pedro, hypothetic effective factors were classified as belonging to the whole setting and the ritual's components. The following effective elements independent from interference were extracted: "common factors" of the psychotherapeutic research, health psychological

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<sup>17</sup> Depicting them in detail would go beyond the scope of my work. The interested reader is referred to other works of literature (cf. e.g. Holz & Zahn, 1995, p. 25ff).

concepts, symbolic healing, sensory stimulation and psychophysiology, effects of music, rhythm and healing suggestions and family therapeutic aspects and altered states of mind.

These factors will be illustrated in detail and complemented with other aspects from literature.<sup>18</sup>

### **5.1.2 Common Factors of psychotherapy**

Frank (1981) worked out four general effective factors, which are the basis of the efficiency of culturally divergent forms of psychotherapy.

As one important factor Frank states the healer-patient-relationship that is the basis for the forming of trust in the healer's competence. In this respect also a culturally sanctioned training is favorable as well as the public acceptance of the healer is important. Also a place where there healing takes place has to be a protected space with a "healing aura" that is characterized by the culture as a site of healing. Third there is the need for a myth or a theory that explains the processes of sickness, suffering and recovery by one model common to the therapist and patient and fourth a procedure that demands a sacrifice from the patient.

### **5.2.2 Aspects of health psychology**

Health-psychological research showed that certain factors like support and coping with stress reduce the risk to fall ill of a wide spectrum of psychic and somatic disorders. Andritzky (1992) sees in the ritual an institutionalized form of social support. The joint experience in the ritual animates the whole group to take part in solving each case's problem even beyond the ritual. By the ceremony's sacredness a strong participation of those present and an obligation to assume responsibility is triggered off.

### **5.2.3 Symbolic healing**

"Therapeutic effects of traditional healing rituals may be interpreted as a skillful manipulation of culturally validated symbols. These symbols fit neuropsychologically determined structural laws and find via special wake states of consciousness direct access to the subconsciousness" (Jilek 1987 cit. after Dittrich and Scharfetter, 1987, p. 147).

Moermann (1979, after Sich et al., 1993) concerned oneself with the question, which role symbolic or metaphoric effective factors play in the healing events as first. Moermann assumes metaphors or symbols to bear the potential to alter cognitive emotional and behavioral structures. Via psychophysiological coupling even the influence of organic processes is possible. "Symbols can link different levels of experience and thus create a healing new order that covers the sick person's cognitive and physical orientation." (Sich et al., 1993, p. 125).

According to Moermann (1979, after Sich et al., 1993) symbolic healing is a universal form of medicinal treatments and is even responsible for many modern biomedical healing successes. Even Western psychotherapy can be described as symbolic healing embedded in our culture:

"Psychotherapy is a specific, trustful interaction between a trained socially sanctioned healer and a sufferer proceeding under emotional participation. During this interaction the healer tries to ease the sufferer's need and blockades by symbolic communication, mainly by words,

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<sup>18</sup> For a fuller depiction of the effective factors of rituals one may refer to the works of Holz & Zahn (1995) as well as the literature named in the text.

sometimes, however, even by physical actions. The healer may give related third persons or others a share in the healing rituals or he may not. Often the psychotherapy is directed among other things to help the patient accept and endure sufferings as a necessity in life on which one can grow. All psychotherapeutic methods are refinements and alterations of ancient methods of psychological healing” (Frank, 1985 cit. after Waksh, 1990, p. 228).

This definition also applies to many aspects of traditional healing methods.

Moermann traces the effect of certain forms of symbolic healing, like e.g. a disease’s transposing to the symbolic level and its treatment above all to the placebo effect (see below). However, there are even more concrete effective paths to be identified (cf. Andritzky, 1992; Quekelberge, 1997).

Yet on the classification of indigenous healing treatments it should be mentioned critically:

“Maybe the expression “symbol or symbolic healing” is well chosen for the psychologist or doctor, for it makes clear that it is preliminary not about purely somatic or biochemical processes. For an indigenous healing tradition it is doubtlessly an ethnocentric category again. For the shaman or traditional healer normally starts from himself being therapeutically effective not through symbols or meaningful signs but through very real means and procedures” (van Quekelberghe, 1997, p. 11).

In the following I would like to take a closer interest in important mechanisms of the symbolic healing, the placebo effect, catharsis and generalized bonding.

#### 5.2.3.1 The placebo effect

Ever and ever again the so-called placebo effect is stated as one of the main mechanisms of ritualistic healing. Hereby it is about a largely not researched process, that may occur with a great number of medical and psychic sicknesses. Psychological factors like beliefs and expectations may trigger off healing reactions, which can be so strong as conventional, medicinal, surgical or psychotherapeutic treatment. Probably the placebo effect plays a role in almost all therapeutic interventions (cf. Krippner, 1996).

The evaluation of a healing effect as placebo effect often has pejorative connotations. Maybe also because it could be explained sufficiently by the dominating scientific paradigm so far. Probably, however, this effect is the strongest of all healing effective powers. It seems to be used by shamans in all parts of the world.

Probably the effective mechanisms of placebos equalize those of imagination procedures, hypnosis, positive expectation attitudes, spiritual disciplines etc.. All this procedures seem to increase the number of endorphins and other neurotransmitters and thus they seem to be a link between mental and physical activities (Levine, Gordon & Fields, 1978, after Krippner, 1996).

### 5.2.3.2 Catharsis

Rituals may be seen as a form of applied poetry that is effective (Beatie, 1977, after Sich et al., 1993). The origins of the catharsis theories lie in the antiquity. One assumed that tragedy has therapeutic functions, for it provokes “moaning and shiver” and thus causes a purification of these conditions (Aristotel, 1982 after Sich et al., 1993). Freud picked up the catharsis theory in the framework of the treatment of hysteric patients. He thought that a big part of the patient’s burdening effects would disappear if traumatic memories could be awakened and worked off (Freud, 1986 after Sich et al., 1993). However, Freud gave up this theory later again, for he came across apparently incompatible contradictions.

Through the psychotherapist and cultural anthropologist Scheff (1983, after Sich et al., 1993) the catharsis theory was reconceptualized. For Scheff the framework for a socially accepted possibility of the catharsis is created in traditional societies through rituals and the appropriate myths especially in times, which are accompanied by heavy burdens for the group members.

He assumes, that

“catharsis occurs as an optimal outburst of repressed feelings ... if a certain repressed feeling is restimulated in an adequate distanced context so that the disappeared pain as well as the present security can be experienced simultaneously and equally strong” (Scheff, 1983 after Sich et al. 1993, p. 132).

### 5.2.3.3 Generalized bonding

Van Quekelberghe (1996, 1997) considers “generalized bonding” to be one important fundamental dimension of indigenous healing rituals. According to Quekelberghe (1997) one may see shamans, despite of being specialists of ecstasy (cf. Eliade, 1983) or imagination (cf. Noll, 1985), also as specialists of “generalized bonding”.

Van Quekelberghe (1997) sees in generalized bonding a transpersonal process of bonding that refers to the whole of one’s life span and that expresses an intensive emotional bonding to oneself, others and the world. The term “bonding” refers to the bonding theories of Bowlby and Ainsworth and describes the affective dynamics of the early mother-child relationship. The bonding forces, which are generalized in the course of growing up to other objects, may be activated in the healing ritual.

“Most aspects of shamanic healing rituals probably aim to reactivate the bonding forces on all imaginable levels, to generalize them cosmocentrically and thus advance recovery and reintegration of the sick person symbolically but of course also in reality.

Through the process of generalized bonding the human being experiences ever intensively a resting pole in itself. This “integrated form of consciousness of the transpersonal bonding” is healing.

“If one can notice the positive curative effects of a deep relaxation on the complex hormonal and immune systems easily, the more one can imagine the continuing healing effect of a modality of consciousness that is at the same time source, origin of trance and deep relaxation” (van Quekelberghe, 1997, p. 17).

Research results from psychoneuroimmunology indicate that feelings of security and social support may have positive effects on the neuro-immuno-endocrine systems and vice versa. However, for example, fears and separation pain may influence these systems negatively. Presumably bonding processes are connected to opioid peptides by different feedback procedures (cf. van Quekelberghe, 1997).

#### **5.2.4 Sensory stimulation and psychophysiology**

Traditional healing rituals have an effect on the ergotropic and tropotropic system through the intensive stimulation of different sense organs. Autonomous, somatic and psychic functions are coordinated and harmonized by this (cf. Lex, 1975, after Andritzky, 1992).<sup>19</sup>

Probably the alternating phases of activation and relaxation, which are to be observed in almost all rituals, effect a general reduction of fear and tension.<sup>20</sup> Joralemons (1984, after Andritzky, 1992) advocates the thesis that the alternation of silence and activation phases strengthens the immune system.

Even the stimulation of the olfactory system through different aromatic substances used during the ceremony remains not without effect by a big chance, for the olfactory cortex is functionally closely combined with the limbic system which is attributed functions to, which regulate emotions (cf. Mabit, Giove & Vega, 1996).

#### **5.2.5 Interaction of music, rhythm and healing suggestion**

Outside of the Western cultural circle music is used in many healing ceremonies. Songs and rattling may be understood as a form of receptive music therapy. According to the kind of music as well as expectation and mood it may have a sedative or stimulating effect, induce trance and provoke different psychophysical effects, too – like, e.g., on the autonomous nervous system - on participants of rituals.

Especially ritual music with sedative effects influences physiological and cognitive components of states of fear in a positive way. Moreover, the so-called synchro-effect has been observed, that is the adaptation of vegetative and motor physical processes to external rhythms (cf. Andritzky, 1992).

Furthermore he assumes that the whole ritual with all sensory and symbolic information is internalized optimally in its structure from the patient this way and that it develops out of the subconsciousness a “depot effect” long after the ritual’s end. It deduces from the interaction of pre-existent symbolic

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<sup>19</sup> Diseases like depressions or stomach ulcers correlate with disharmonies of the two systems.

<sup>20</sup> The alternation of tension and relaxation to induce relaxation is also used in the progressive muscle relaxation after Jacobson. Relaxation is incompatible with feelings like fear and tension and has positive effects on states of pain (Miltner, Birbaumer & Gerber, 1986 after Holz & Zahn, 1995).

contents of the unconscious and symbolized experiences absorbed during the *mesa* (or another healing ritual, note of the author) (cf. Andritzky, 1992, p. 123).

### **5.2.6 Healing effect of verbal elements in the ritual**

Schömbucher-Kusterer (1994 after Holz & Zahn, 1995) starts from the idea that verbal elements of the ritual develop their healing effect via three levels of perception. He distinguishes:

- the subliminal perception of rhythmic and verbal particularities, which lend the said or sang a mystic aura and by this also authority
- the conscious perception of text contents that makes the understanding of the latter possible
- the interpretation of perceived information; i.e., every participant of a ritual chooses one meaning that seems to apply to him

### **5.2.7 Family therapeutic aspects**

Traditional healing rituals attach especially big importance to the participation of people who are close (even if this participation was only symbolic). By this the person affected is relieved and – similar to family therapy – sickness and healing is embedded into the family dynamics. Even changes of the patient’s family sphere and the social network may be paved the way. These are said to be an important therapeutic factor in the eco-socio-psycho-somatic concept of sickness and treatment of most of the indigenous health systems.

Social tensions can be solved by healing rituals and thus social relationships strengthened. In this context rituals have also a socially integrative function.

### **5.2.8 Archetypes and energy transformation**

C. G. Jung (1975) assumed archaic features of the human psyche like the universal ability to form symbols to be handed down from generation to generation – similar to ancient features of mammals in the human body. C. G. Jung presumes that there are super-individual and super-cultural symbols which are passed on on the archaic basis of the human mind and that they are part of the unconsciousness. He calls these symbols archetypes. “Like a plant produces its flowers, the psyche creates its symbols” (Jung, 1985, p. 64). Archetypes may express themselves in many different ways like, for example, in dreams, symbols, myths, works of art and rituals. They are, according to Jung, the basis of universally spread heroic sagas, the imagination of spirits, daemons and gods, symbols of the transcendence and initiation motives.

According to C. G. Jung (1985) rituals have a therapeutic effect, for strong energies bound to archetypes may take shape in symbols and symbol-like scenes. By this they may lead away and be transformed from the unconscious inner world into the outer world. By the reproduction of archetypical behavior, e.g., in a ritual, according to Jung, the consciousness may be expanded and the individuation process, the “revelation of the essential human”, and thus the re-establishment of an “original potential entirety” (1995) be promoted.

While humans lived their symbols in earlier times and were stimulated unconsciously by their content, symbols were repressed in Western industrial cultures into the subconscious in the course of emphasizing rationality stronger and stronger (cf. Jung, 1985). Therefore symbols cannot be understood without any trouble anymore today and be integrated into psychic events. According to Jung this forms the basis for many psychic disorders, drug consumption, inner emptiness and numerous destructive tendencies, which threaten our psychic and physical health.

### **5.2.9 Cognitive restructuring**

McManus (1979 after Holz & Zahn, 1995) developed a cognitive oriented hypothesis on the effect of rituals. According to him, rituals are a buffer between the process of processing information from the environment and behavior in the environment. According to his theory, there is a curve-linear connection between the complexity of a person's educational environment and the level of information processing which he refers to. Social environmental stimuli may, according to McManus (1979 after Holz & Zahn, 1995), only be processed optimally when they are neither too high nor too low in their complexity. Too complex or intensive environmental stimuli limit the room to act and prevent a flexible adaptation to environmental conditions. Rituals may temporarily adopt an adaptive function and thus prevent or counteract a breakdown of the cognitive system. Thus rituals have ready formalized answers to a number of stressful life-events.

The fixed structure of a ritual facilitates the coping with an abundance of affects and new stimuli in situations of crisis, which strain many people and makes an inner restructuring possible.

### **5.2.10 Altered states of mind**

Most indigenous healing rituals specifically use elements like music, dance, drum, chant, incenses or various other psychoactive substances in certain phases of the ritual to induce, control and structure altered states of mind.

In many indigenous healing rituals healers as well as patients enter trance-like states. By this a "complementary sensibilization" can be reached (Andritzky, 1992, p. 120).

Altered states of mind may have therapeutic effects indirectly by opening the subconscious making the treatment of personal conflicts possible. Moreover, they may have direct healing effects on different physiological and psychological processes. In the following chapter I will examine altered states of mind in detail.

## **6 Altered states of consciousness (ASC)**

One of the most important effects of sacred medicine plants is from a Western perspective that they have a far-reaching effect on the human consciousness. To make this effect understandable from the psychological point of view I would like to illuminate so-called altered wake states of mind.

### **6.1 Definition of altered states of mind**

By the taking of sacred medicine plants as well as different other techniques the traditional cultures' specialists of the ecstasy technique are enabled to contact the real reality, to merge or encounter a deity or to travel with their souls into other worlds. In Western culture these states of consciousness are dealt with by different terms like trance, ecstasy, possession, mystic exaltation, hysteria etc.. In psychology these states are normally referred to as altered states of consciousness (ASC) or altered waking states of consciousness (AWSC). Arnold Ludwig (cit. after Tart, 1969, p. 21) defines these states as the following:

"I shall regard altered state(s) of consciousness (ASC) as any mental state(s), induced by various physiological, psychological or pharmacological maneuvers or agents, which can be recognized subjectively by the individual himself (or by an objective observer of the individual) as representing a sufficient deviation in subjective experience or psychological functioning from certain general norms for that individual during alert waking consciousness. This sufficient deviation may be represented by a greater preoccupation than usual with internal sensations or mental processes, changes in the formal characteristics of thought and impairment of reality testing to various degrees."

According to Tart (1969) an ASC is characterized by an alteration of the consciousness structure so that information is differently processed. This again leads to an altered perception. There are different levels and intensities of ASC.

### **6.2 The universal appearance of ASC**

In almost all cultures and epochs humans have developed practices to induce altered states of consciousness with the aim to leave their daily world and to gain access to other dimensions of reality and experiential levels. Making experiences in the altered consciousness is, according to Weil (1972), a common human want. This want is for example reflected in the Eastern contemplative practices or the ritualistic usage of sacred plants. Bourguignon found in a worldwide random survey of 488 ethnics that ASC are institutionalized in 90% of these cultures. This is especially true for the non-separable complex of indigenous cultures' religion, magic and art of healing (Bourguignon, 1973, after Dittrich, Scharfetter, 1987, p. 2).

There, mostly such ASC are said to be especially valuable which represent a key to deep insights, hidden contexts and religious-spiritual experiences. Often their whole religion was built up around them. The realms themselves described in mythology and cosmology may be experienced in ASC. Individuals of these cultures who are able to enter and control an ASC intentionally often have an important status as healers, guards of the tradition or religious leaders.

The Occident however has virtually developed an aversion to abnormal irrational states of consciousness by overemphasizing rational thought for a long time. In this way, the knowledge of a

reasonable handling of ASC or their categorization has almost been lost. Probably, however, they have played an important role for our culture's coming into being as for example in form of so-called brainstorm, too. Out of the latter many discoveries in the fields of technology, science, art etc. came into existence. In this way, K. Popper assumes that Pythagoras and Empedocles used shamanic techniques for achieving their knowledge. He classified them as shamans of historical times (Popper, after Grof, 1983).

### **6.3 Transpersonal psychology and the research of ASC**

In the beginnings of scientific psychology W. James was one of the first who concerned himself with ASC. He laid the fundament for a psychology of the consciousness and transpersonal psychology.

„One conclusion was forced upon my mind at that time, and my impression of its truth has ever since remained unshaken. It is that our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence; but apply the requisite stimulus, and at a touch they are all there in all their completeness, definite types of mentality which probably somewhere have their field of application and adaptation“ (James, 1902/1929, cit. after Dittrich/Scharfetter, 1987, p. 1).

Later consciousness and the research of subjective states, especially mystic, spiritual, intuitive experiences were repressed from modern Western psychology by psychoanalytical and behaviorist models and the claim for objectivity of science.

Parallel to the Hippie movement of the 60s the work with a paradigm in psychology with the trend of transpersonal psychology was taken up again, that gives again room to these dimensions of our consciousness. Transpersonal psychology developed during this time as the fourth force in psychology next to behaviorism, psychoanalysis and humanistic psychology. It builds upon a growth oriented conception of man according to which the search for a higher experience comes to the fore with the saturation of the bare necessities. A. Maslow coined for this the term transpersonal. With this movement the optimal developing potential of the human being was supposed to be given more respect again. In favor of focusing on the developments in the technological field it was neglected by the Western civilization over a long period of time.

For the first time – due to the trend of transpersonal psychology – millennia-old psychological systems of Asia and other non-European cultures are honored by scientific psychology. The topics of transpersonal psychology are multifarious. They cover unconscious psychological reserves, the wisdom of the body, paranormal consciousness capacities and altered states of consciousness. Even C. G. Jung's archetypes, universal topics in myths, the arts and traditional systems of perception and order of the reality as well as topics like mysticism, death and religion are taken up.

„Transpersonal experiences are all the human experiences possible outside the usual time space boundaries of the ego. This includes experiences of God or Divine Spirit and identification with plants, animals and objects, including the universe itself. Peak experiences

and Nadir experiences are words coined for the positive and negative extremes of transpersonal experience“ (Yensen, 1996, p. 111).

Transpersonal psychology strives for a cross-cultural, holistic science that wants to cancel again the incompatibility of spirituality and science. This, however, demands a reorientation in the scientific proceeding. Science here is still in its infancy, for transpersonal dimensions cannot be checked by common scientific methods. Even the purely rational access of the Newton-Cartesian sciences hits its limits here. A lot in this field is based upon experiential knowledge and can only be understood by experience, discipline and devotion.

#### **6.4 Every-day consciousness, altered consciousness and pathological states of consciousness**

I would like to define consciousness after Tart (1969, p. 93) as a “general pattern of psychic functioning”. This is seen in transpersonal psychology as a continuum of states between which there are flowing transitions. The mind fluctuates between different states of consciousness the whole day.

The every-day consciousness is understood to be one of many possible states, “comparable to the electro-magnetic spectrum that takes up a tiny space” (Kalweit, 1982a, p. 56). It is said to be a tool to orient on a consensus reality. Different cultures work on different ranges of the spectrum. This results in different worldviews and difficulties in terms of communication.

By certain psychic components, e.g. the influence of inner or outer stimuli, processes of evaluation, decision and memory etc. the every-day consciousness is kept in balance. If it is not permanently reloaded by known stimuli or stabilizing mechanisms it results in deautomatization and thus in ASC (Tart, after Kalweit, 1982a). Altered states of consciousness are said to be a universal ability in the nervous system (cf. Winkelmann, 1996).

Under the influence of the rational positivistic ideology the ability to enter ASC using them sensibly seems to have diminished in the Western cultural circles (cf. Kalweit, 1982).

The research of ASC throws even a new light on the definition of “healthy states of consciousness”. Apparently many experiences and states of an altered state of consciousness were precipitately labeled pathological. (cf. also 7.3.3.) Reasons for this are the ignorance of the possible range and value of ASC, the lack of own experiences with them as well as cultural prejudice. Forms of consciousness, however, should not be said to be pathologic because they differ from the norm. The term pathologic should rather be used for forms of consciousness which dominate one-sided, occur involuntarily and therefore create suffering stress. They function as avoiding strategies or cannot be handled because of learning deficits.

ASC make possible, this should be emphasized, not only experiences, which may be called transpersonal. The “paranormal realm” also has hidden pitfalls in which genuine mystic experiences may mingle with self-deception, illusions and defense mechanisms. Yogis and shamans therefore are trained for years in a meaningful handling of these realms. ASC, moreover, are always embedded into

a ritual context in traditional cultures. In Western culture this institutionalization, that is a sensible framework for the search for ASC, lacks. The latter can be seen as an important factor for the coming into being of addiction, dependence on gurus and sects and isolation. The lacking possibility for the integration of ASC consequently may lead to existential crisis over to suicide and psychosis (cf. e.g. Scharfetter, 1992).

### **6.5 The induction of altered states of consciousness**

Humans developed a number of techniques for the specific alteration of the consciousness in the different cultures in the course of time. Although there are some experimental researches – especially on the applied methods in Western subcultures - ASC are on the whole, especially referring to cultural, situative and personality specific factors, still poorly researched. Dittrich classified different conditions, which trigger off, and summed them up in following table:

**Table 1: classification conditions triggering off ASC after Dittrich & Scharfetter (1987, p. 8)**

A

<ol style="list-style-type: none"><li>1. Pharmacological Stimuli<ol style="list-style-type: none"><li>1.1. Hallucinogens I. order<ol style="list-style-type: none"><li>1.1.1. Phenylethylamine derivates (e.g. mescaline)</li><li>1.1.2. Indole derivates (z.B. N, N-dimethyltryptamine (DMT), psilocybin, Ibo gain, d- Lysergic acid diethylamide [LSD])</li><li>1.1.3. Dibenzpyran-derivates (e.g. (—)-<math>\Delta^9</math>-trans-Tetrahydrocannabinol (<math>\Delta^9</math>-THC))</li></ol></li><li>1.2. Hallucinogens II. order<ol style="list-style-type: none"><li>1.2.1. Isoxazol-derivates (e.g. muscimol)</li><li>1.2.2. Indol-derivates (e.g. d-lysergic acid amide, lysergic acid hydroxyethylamide)</li><li>1.2.3. Tropan-derivates (e.g. scopolamin, 1-hyosciamin)</li><li>1.2.4. other chemical structure (e.g. phencyclidine, ketamine, nitrous oxide [laughing gas])</li></ol></li></ol></li><li>2. Psychological procedures<ol style="list-style-type: none"><li>2.1. lowered variability of the perceptive field with lowered or normal intensity<ol style="list-style-type: none"><li>2.1.1. Sensory deprivation i.w.S.<ol style="list-style-type: none"><li>2.1.1.1. Sensory deprivation i.e.S.</li><li>2.1.1.2. Perceptive Deprivation</li></ol></li><li>2.1.2. Hypnagoge and hypnopomp states</li><li>2.1.3. Hetero- und auto-hypnotically techniques<ol style="list-style-type: none"><li>2.1.3.1. Hetero-hypnotically techniques</li><li>2.1.3.2. Auto-hypnotically relaxation procedures (e.g. relaxation through self-hypnosis, meditative techniques)</li></ol></li></ol></li><li>2.2. Increased rhythmicity or variability of the perceptive field<ol style="list-style-type: none"><li>2.2.1. Intensive rhythmicity of the perceptive field</li><li>2.2.2. Increased variability of the perceptive field with normal or increased intensity</li></ol></li><li>2.3. Other stimuli to trigger of ASC<ol style="list-style-type: none"><li>2.3.1. singular stimuli (e.g. deprivation of sleep, hyperventilation)</li><li>2.3.2. combination of different procedures</li><li>2.3.3. Dibenzpyran-derivates (e.g. (—)-<math>\Delta^9</math>-trans-tetrahydrocannabinol (<math>\Delta^9</math>-THC))</li></ol></li><li>2.4. Hallucinogens II. order<ol style="list-style-type: none"><li>2.4.1. Isoxazol derivates (e.g. muscimol)</li><li>2.4.2. Indole derivates (e.g. d-lysergic acid amide, lysergic acid hydroxyethylamide)</li><li>2.4.3. Tropan derivates (e.g. scopolamine, 1-Hyosciamin)</li><li>2.4.4. Other chemical structure (e.g. phencyclidin, ketamine, nitrous oxide [laughing gas])</li></ol></li></ol></li><li>3. Psychological procedures<ol style="list-style-type: none"><li>3.1. Decreased variability of the perceptive field with decreased or normal intensity<ol style="list-style-type: none"><li>3.1.1. Sensory deprivation i.w.S.<ol style="list-style-type: none"><li>3.1.1.1. Sensory deprivation i.e.S.</li><li>3.1.1.2. Perceptive Deprivation</li></ol></li><li>3.1.2. Hypnagoge and hypnopompe states</li><li>3.1.3. Hetero- und auto-hypnotically techniques<ol style="list-style-type: none"><li>3.1.3.1. Hetero-hypnotically Techniques</li><li>3.1.3.2. Auto-hypnotically relaxation procedures (e.g. relaxation through self-hypnosis, meditative techniques)</li></ol></li></ol></li><li>3.2. Increased rhythmicity or variability of the perceptive field<ol style="list-style-type: none"><li>3.2.1. Intensive rhythmicity of the perceptive field</li><li>3.2.2. Increased variability of the perceptive field with normal or increased intensity</li></ol></li><li>3.3. Other stimuli to trigger of ASC<ol style="list-style-type: none"><li>3.3.1. singular stimuli (e.g. deprivation of sleep, hyperventilation)</li></ol></li><li>3.4. combination of different procedures</li></ol></li></ol>
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Dittrich worked out that similar states of consciousness can be induced by psychological and pharmacological methods. Among most of the indigenous peoples the methods of induction cannot clearly be assigned to the category psychological or pharmacological. In addition this classification in psychological vs. pharmacological stimuli in front of the background of the body-soul problem is an artifact, for physical goes hand in hand with mental changes and vice versa. In this way, one can find “endogenic drugs” in the human body, which are closely related to so-called hallucinogens (cf. Zehenbauer, 1992).

The classification pharmacological vs. psychological stimuli is sensible nevertheless to give a structured overview about the more known conditions to trigger off ASC. In the following I will explain the different methods to induce ASC in detail.

### **6.5.1 Pharmacological stimuli**

So-called hallucinogens may provoke in certain doses similar ASC despite their partially very different chemical structure as well as divergent physiological effect and effective courses.<sup>21</sup>

They have also in common that their usage was or is institutionalized in many non-European cultures in the religious context, while altered waking states of consciousness created by hallucinogens contradict Western culture’s conventional moral concepts. These common features hallucinogens share with psychological procedures, which can trigger off ASC, too (Dittrich, 1982). Pharmacologically induced ASC, however, are in contrast to psychologically induced ones less intensive and less liable to interferences.

In the following I will deal more detailed with the most important hallucinogens referring to their chemical basic structure, their deposit and their ritualistic usage.<sup>22</sup>

#### 6.5.1.1 Classification of so-called hallucinogens after Dittrich

Dittrich (1987) saw so-called hallucinogens as a core group of substances, whose taking induces regularly an ASC without physical attendant symptoms. He classifies these in two categories; the hallucinogens of the I. and II. Order (cf. table 1). The main difference between these two groups is that “those of the II. order provoke a more seldom structured optical hallucinatory phenomena but a stronger clouding of the consciousness” (Dittrich, 1987, p. 9). Within these groups he further differentiates the substances according to their chemical structure.

**Hallucinogens I. order.** Dittrich classifies the hallucinogens I. Order into phenylethylamine derivates, indole derivates and dibencypran-derivates.

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<sup>21</sup> Interestingly enough teonanacatl *Psilocybe mexicana* is thus replaced by santa maria *Cannabis* in Mexican healing rites sometimes

<sup>22</sup> For a full depiction of psychoactive plants it should be referred to other works (cf. Schultes & Hoffmann, 1982; Rätsch, 1999).

The phenylethylamine derivatives are related in their chemical structure to neurotransmitters dopamine and noradrenaline. Mescaline, the main active substance of peyote *Lophophora williamsii* and of san pedro *Trichocereus pachanoi* is the most important representative. The ritual peyote usage was widely spread before the Spanish conquest. Although the conquerors tried by all means to eliminate the peyote cult it did not die out. Today it can especially be found among the Mexican Huichol and the Tarahumara Indians. In the 19. century a syncretistical religion – the “Native American Church” – came into being among the North American indigenous peoples in whose ceremonies peyote plays a central role as sacrament. The “San Pedro” cactus is widely spread in the south American Andes and is especially of importance in traditional medicine.

Also part of the phenylethylamine derivatives is a number of methoxylated amphetamine compounds and myristicine that occurs in the seed of the nutmeg.<sup>23</sup>

Indole-derivatives are similar to the neurotransmitter serotonin in their chemical structure. Part of which are among others:

- the tryptamine derivative DMT (N, N-dimethyltryptamine), that occurs in many plant genera of south America and which is the main active substance of the sniffing powder “yopu”.
- the 4-hydroxytryptamine-derivative psilocybin and psilocin which occur in different mushrooms, like e.g. the Mexican “teonanacatl” or “sanitos”, *Psilocybe mexicana*
- cyclic tryptamine-compounds like ibogaine,  $\beta$ -carboline and the lysergic acid derivatives.

Ibogaine is the most important alkaloid of “iboga” used ceremonially in the Biwiti cult in Gabun and parts of Congo. The latter is extracted from the roots of the bush “iboga”, *Tabernaemontana iboga* in Africa.

The most famous  $\beta$ -carbolines are harmine and harmaline. These occur among others in the south American liana variety of “ayahuasca”, *Banisteriopsis Caapi*. By adding DMT-containing plants like e.g. “chakruna”, *Diplopteris cabrerana* the beverage ayahuasca – used by many tribes of the Amazon ceremonially – is produced (cf. 11.1; 11.2).

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<sup>23</sup> The nutmeg was used as a “replacement for marihuana” in the 50s and 60s. (Rätsch, 1999).

The most famous lysergic acid derivative is LSD (d-lysergic acid diethylamide) first synthesized by A. Hoffmann from the lysergic acid occurring in ergot. LSD is the substance that has by a long way an hallucinogenic effect in the lowest dose.

Of the dibenzopyran derivatives is the main active substance of hemp *Cannabis*, the  $\Delta^9$ -THC [( $\Delta^9$ - $\Delta^9$ -trans-tetrahydrocannabinol)] the most famous. The flowers and leaves of the plant “marijuana” and the resin “hashish” are either consumed by smoking or eating. *Cannabis* is said to be the psychoactive plant with the longest history and widest spreading.

**Hallucinogens II. order.** Dittrich classifies the most important hallucinogens II. order according to their chemical structure into isoxazol derivatives, lysergic acid derivatives, tropane derivatives and such with a different chemical structure.

The two most important isoxazol derivatives are the substances muscimol and ibotenic acid derived from fly agaric *Amanita muscaria*. Fly agaric above all grows in the temperate zones of Europe, Asia and North America. Its ceremonial usage was probably widely spread in earlier times. Today one still finds its ceremonial use in some ethnic groups of Siberia.

Part of the most famous lysergic acid derivatives are ergin (d-lysergic acid amide) and isoergin (isolysergic acid amide), which occur in different plants especially in the convolvulaceae *Convolvulaceae*. Their seeds had – under the name of “ololiuqui” – great significance as a “magic drug” among the Aztecs. Today it is used in some ethnics of Mexico and Western subcultures.

The most important tropane derivatives are scopolamine (1-hyoscine) and 1-hyoscamine. These are contained in different night shadows *Solanaceae*, like *Atropa*, *Madragora*, *Hyoscyamus* and *Datura* (thornapple). With the processing of the vegetable basic substance 1-hyoscyamine becomes atropine. Also the usage of night shadows to induce ASC is very old and widely spread. In this way, they are, e.g., known as the most important psychotropic ingredients of witch ointments in the Middle Ages. The Aztecs called one *Datura* variety they used as “sister of ‘ololiuqui’”. Still today *Datura* seeds are used by indigenous cultures of the South-West of the USA as well as of Mexico, South America, Kenya, Tanzania and India.

Also the henbane *Hyoscyamus niger* has a long tradition of inducing ASC. It was added to beer in Siberia and Middle-Europe until into the 16. century.

Next to the named so far, there is a number of hallucinogens II. order with other chemical structures, which are to be found for example among narcotic substances with a long excitation phase (phase II of narcosis). Phencyclidine that was developed as a short effective narcotic is only used in veterinary medicine anymore since the discovery of its mind-altering side effects. However, it has found its way under the name of “angel’s dust” into the subcultures.

Ketamine, a derivate of phencyclidine has also “psychedelic side effects” and is used experimentally in psycholytic therapy<sup>24</sup> and in the subcultures. Laughing gas (dinitrogen monoxide) was first produced in 1772. It went down in the history of consciousness research especially because of the self-experiments of William James (1882 after Dittrich & Scharfetter, 1987). He assigned laughing gas “fascinating effective qualities, especially in reference to creating a “mystic consciousness” (Dittrich & Scharfetter 1987, p. 18). Tart (1969) added laughing gas to the “minor psychedelic drugs” for its effect starts after approximately two minutes from the beginning of its application and fades away again equally quickly.

#### 6.5.1.2 Other systems of classification

(McKim, 1991 in Winkelmann, 1996) compiled another system of classification and takes the similarity of psychoactive alkaloids to certain neurotransmitters as a basis for the grouping of hallucinogens.

In this way, he assigns, for example, LSD and other ergot alkaloids, psilocybin, lysergic acid amide, harmine, harmaline and related ibogaine derivates as well as DMT and related substances to the group of serotonin likes. Alkaloids related to noradrenaline are, e.g., mescaline, synthetic mescaline-like substances like MDMA, MDA, DMA, STP etc., myrsicine and elemicine. In the third group – alkaloids related in their chemical structure to acetylcholine – “hallucinogens” from the family of the night shadows are to be found contained in atropine, hysoscamine or scopolamine.

The listed categories bear a central problem: although the depicted alkaloids may be similar in their chemical structure they create completely different subjective effects. Vice versa chemically completely dissimilar structures can provoke subjective very similar effects (e.g. THC and psilocybin).

Thus Winkelman (1996) suggests another system to categorize so-called hallucinogens. The effect of so-called hallucinogens is mediated primarily by the acetylcholine or serotonin-neurotransmitter system. Therefore he distinguishes them after which of the two transmitter systems is influenced.<sup>25</sup> Part of the first group are after Winkelmann (1996) LSD-like hallucinogens to which he adds phenylethylamines (mescaline, mehoxyamphetamine and others), indoleamines (LSD, psilocybin and others) and tetrahydrocannabinols, to the second group those substances, which show a similarity to muscarine or nicotine like atropine, hysoscine (scopolamine) and L-hyoscyamine.

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<sup>24</sup> The psycholytic therapy is a substance supported depth psychological kind of therapy (cf. 7.2).

<sup>25</sup> Despite their differences in structure hallucinogens similar to noradrenaline have influence on the serotonergic system. Which is the reason why they are combined with the serotonin (5-hydroxy-tryptamine 5HT)-related to LSD-like alkaloids.

### 6.5.1.3 Effects of hallucinogens

Especially the hallucinogens I. order altogether evoke similar ASC in certain doses. However, they differ in terms of their psychological effects and course of effectiveness. On the whole the dangers of the hallucinogens I. order are little if they are used in an appropriate framework (Dittrich, 1987). Hallucinogens II. order have in comparison to those of the I. order a heterogeneous chemical structure and show also psychologically and physiologically no uniform effects. On the whole they lead more seldom to structured optical-hallucinatory phenomena, but more often to a clouding of the consciousness. This may show for example in sleepiness, apathy, increased tiredness and an experience like through a veil. Generally the therapeutic range of hallucinogens II. order is smaller, their dangers, however, are bigger than with those of the I. order (Dittrich, 1987).

At this point it should be indicated that the effects of a consciousness-altering plant cannot be reduced to the effects of their psychoactive main compounds even if one only looks at the biochemical level (cf. 2.3).

In addition the effect of the pharmacological stimuli depends for a main part on non-pharmacological variables – so-called set and setting influences (cf. 7.2.2; 11.5.). Thus for example psychosomatic constitution (mood, expectations, posture of one's body, food taken before etc.) and the stimuli of the ambience (music, pictures etc.) may influence the hallucinogen's effect so strongly that these factors are on their own able to provoke similar states of consciousness like those which are induced by the help of substances.

### **6.5.2 Psychological stimuli**

There is a fluent transition between everyday stimulant conditions and certain psychological procedures to induce ASC. Therefore many people know ASC from their own experience. For some of the psychological stimuli, e.g., meditation it takes a longer training before it comes to effects than it is the case with pharmacological stimuli.

“Basically there is hardly a sensory stimulus that cannot be used for this purpose. There are so many possibilities to trigger of a trance, for it is not the stimulus itself that provokes the transition of one condition of consciousness to another but the expectation that this will happen. This expectation leads in connection with the ritualistic event to a strong concentration, that is itself supported by the sensual stimulus” (Goodmann, 1994, p. 49f).

#### 6.5.2.1 Lowered variability of the field of perception

One possibility to induce ASC is the reduction of the environmental stimulation or the environmental contact or the lowered variability of the field of perception. Under sensory deprivation i.w.S. one understands techniques like seeking isolation and monotony etc.. These techniques were and are used in many cultures to open the mind for visions or experiences of enlightenment.

The sensory deprivation i.e.S. is the complete isolation against outer stimuli and is realized in its extreme form mainly in the West for research or commercial purposes by so-called Camera Silens – a completely sound-dead darkened room or the so-called smadhi or isolation tank.

Under perceptive deprivation one understands the reduction or elimination of the sensory content of stimuli by monotonization. It may be realized, for example, through listening to monotonous music.

Hypnagogic states or hypnagogic states are ASC, which may occur while falling asleep or waking up, when wakeness and the environmental contact are reduced.

Situations related to these states, during which ASC may occur, are close-to-death experiences, which the old proverb “death is sleep’s brother” make appear under new light. Reports of humans who had a so-called death experience are very similar to experiential reports of shamans about their voyages into the other reality or states of consciousness under the influence of LSD (cf. Grof, 1980; Kalweit, 1992).

Heterohypnotic techniques to induce an ASC reduce the perception of the normal environment by the test person, like in a clinical hypnosis, concentrating in a passive immobile state on a given stimulus like the hypnotist’s voice or a point of fixation. According to Stoll (1904, in Dittrich, 1987) heterohypnotic procedures are the oldest and widest spread psychotherapeutic procedures at all.

Autohypnotic techniques direct the attention, as it is the case with the relaxation through self-hypnosis or different concentrative meditation and self-contemplation procedures, to a certain object like for example the own breath, a mirror made of obsidian, a mandala, a candle or the fire for a certain period of time. Meditation procedures have the greatest significance among the psychological triggers of ASC and are the widest spread.

#### 6.5.2.2 Increased rhythmicity or variability of the field of perception

Except by a reduction of the environmental stimulation ASC may be triggered off by an increase of the environmental stimulation or the environmental contact.

Although there are many ethnological works, which describe a stimuli flooding as a technique to induce ASC, this induction method is still hardly researched experimentally. Under intensive rhythmicity of the perceptual field one understands the intensive monotonous rhythmic stimulation of different sense organs, that, for example, may be realized by dancing to music with certain rhythms. This induction technique one finds for example in the dance ritual of the !Kung (Katz, 1977) of the Kalahari desert in Africa, the Aztec dance in Mexico, the dance of the Dervishes etc. Physical sacrifices like the sundance of different North American indigenous peoples may deepen the trance. Also certain chants, which are said to be sacred because of this reason, may induce ASC. In the West

one finds rhythmic stimulation often in reference with competitive sport and physical exhaustion like for example with long-distance swimming, long-distance race or with dancing to techno and trance music.

The increased variability of the perceptual field with a normal or increased intensity is characterized by the fact, that ever and ever again new unexpected material breaks the procedure forms of the stimulation material so that they cannot finish. It is difficult to give clear examples for this induction technique of ASC from other cultures. In the laboratory Ludwir & Lyle (1964 in Dittrich & Scharfetter, 1987) could create a “hyperlateral state of trance” by “bombarding their test subjects with highly structured acoustic material combined with simultaneous physical motion” among all test subjects “after 5-25 minutes”.

#### 6.5.2.3 Other stimuli to trigger off ASC

**Singular stimuli.** There is a wide range of ASC inducing techniques of which only relative simple stimuli are in the limelight, e.g., an intensive orgasm, excessive masturbation, fasting, keeping a ritual diet, water withdrawal, ascetic wakeness, hyperventilation etc.. Even traumata of the central nervous system may evoke ASC.

**Combination of different procedures.** While ASC inducing methods are often individually researched by the experimental research, indigenous practices often combine several ones in a specific way. In this way, different pharmacological or psychological procedures are coupled with each other. Experimental researches showed that sleep deprivation potentiates the effect of hallucinogens of the I. and II. order (von Arx, 1976; Dittrich, 1985a in Dittrich, 1987). Indigenous traditions noticed this already early. And certainly this is one of the reasons (next to a greater silence during the night, darkness etc.), that healing ceremonies took place at night. The chronobiological factors, which are influenced by the night guard influence the organism’s regulatory processes. In this context melatonin plays an important role whose bio-metabolism is influenced directly by hallucinogens and which coordinates the endogenic rhythms with the environment’s cycles as neuromodulator (Pöggler, 1986 in Trebes, 1993).

Even fashionable “raves” or techno parties on which one often takes psychoactive substances and sometimes dances several nights and days to loud rhythmic music in combination with light effects etc. may be understood as combined procedure triggering of ASC.

In many shamanic healing ceremonies involving sacred plants fasting, a ritual diet and sexual abstinence are part of the ceremony’s preparation that often lasts the whole night (sleep deprivation). Also during the ceremonies themselves one can observe different consciousness altering stimuli. During the peyote ceremony of the Native American Church, for example, the participants focus their

attention by concentrating their look on a fire. There is drumming, rattling and chanting and often one smokes strong tobacco accompanied by prayers additionally to the taking of peyote.

Although I put Western induction methods of ASC from scientific researches or Western subculture just next to indigenous practices I would like to stress once again that indigenous practices never take place without being embedded culturally and ideologically and this has an important effect on the kind of experience.

### **6.6 Features of ASC**

“No matter which mean one chooses for reaching the antipodes of our normal waking consciousness one always lands in a comparable region into which one may enter more or less deeply just according to the triggering condition.” (Dittrich & Scharfetter, 1987, p. 36).

Thus it can be quite similar what an ecstatic mystic, a meditating, a consumer of hallucinogens or a shaman experiences. Already in the Sutra I of the 4. book of Patañjali, that came into existence between the second and the fourth century, there are hints, that similar states of consciousness may be reached through certain medicinal plants, mantra meditation or ascetic exercises like fasting (Patañjali, 1976). Besides from etiologically independent fundamental dimensions there are still etiologically dependent experiences. However, there is a common core of aspects, which occur in the majority of the reports. It covers (after Dittrich & Scharfetter, 1987): oceanic boundlessness, fearful ego-disintegration, visionary restructuring.

Tart (1988) lists as features of an ASC an alteration of the consciousness structure, an altered kind of information processing and an altered perception.

Following characteristics occur etiologically independent with ASC (after Ludwig, 1966 in Dittrich & Scharfetter, 1987, p. 35ff.):

- altered thinking processes

Primary process-like thinking predominates; there are subjective disorders of the concentration as well as memory and judgment ability disorders. The reality examination is reduced and the relation of cause and effect dissolves. Contrasts and incompatibilities may be accepted without (psycho-)logical difficulties.

- alterations in the experience of time

Often the feeling occurs to lose control of oneself, i.e. a feeling of timelessness is experienced. The chronology is canceled. Also space is perceived differently.

- feeling the loss of one's self-control

Often the feeling occurs to lose control of oneself. This may be accompanied by the feeling to be controlled by other powers.

- changed emotionality

Intensive positive or negative emotions of ecstasy and blissful happiness to states of fear and deep depression may accompany the feeling of losing control.

- changed body image

Physical boundaries may dissolve, body parts may be perceived as distorted and in weight and size as altered or removed from the rest of the body. There may be subjective levitation phenomena and the feeling of incorporeality. This may be accompanied by great fears or by an oceanic sense of well-being.

- altered perception

There may be a much sharper perception and above all hallucinations, pseudo-hallucinations, illusions and synesthesia in the optical realm.

- altered experience of importance

Usually unimportant objects or contexts may suddenly seem to be important.

- feeling of the unspeakable

ASC often have the character of the indescribable, the difficult or unspeakable

- feelings of becoming one, renewal and rebirth

One is not certain of this aspect belonging totally to ASC. It often occurs only after the ASC.

- hypersuggestibility

As a consequence of the loss of constants there is uncertainty under whose influence structuring experiences are taken up especially easily.

### **6.7 The therapeutic use of ASC**

ASC were and are used therapeutically in all parts of the world and are even the remedy par excellence in many indigenous cultures.

Their therapeutic role is partly reasoned by physiological changes accompanying ASC (cf. Winkelmann, 1996). Thus ASC may have many different harmonizing effects on the human body and mind via the mediation of limbic and cortical structures.

A parasympathetic state is induced by ASC that may have diverse effects like, for example, the increase of relaxation and the reduction of fear and the relief of self-regulating physiological processes (cf. Winkelmann, 1996). Apart from this ASC may effect a right hemispheric increase of excitement and an improvisation of the collaboration of the two hemispheres (cf. Winkelmann, 1996).

Intellect and affect work better together in these states. Moreover, ASC promote the remembering of subconscious material, for the controlling authorities are diminished. By this an emotional catharsis as well as the solution and integration of psychic tensions may be achieved. In addition suppressed aspects of the self may manifest and individual needs may be fitted more constructively into the socio-cultural context. Moreover, the psyche is especially suggestible during the altered state of consciousness and thus open to therapeutic messages.

Another feature of ASC that is mentioned is that they may tap sources of knowledge and new experiences. The altered information processing modus makes possible to view the own life situation from an altered perspective and to interrupt the flow of well-worn habits. By this a kind of psychic rebirth and a re-orientation in life is made possible.

“ASC lead to an increased experience of reality, to a non-fixed intensified life-supporting and unity-giving perception, which again motivates to greater social responsibility, to respect for the other, to reverence and respect for nature’s conditions. Alternative states of consciousness are placed into the continuum of the increasing insight into unity and thus bring along the experience of being integrated into the universal interaction with oneself” (Kalweit, 1982b, p. 52 ff.).

Above all transcendental experiences, which may open by ASC, are said to be therapeutically valuable. In this way, for example, Maslow gives so-called “peak-experiences” among other things anti-neurotizing effects. C.G. Jung considers “the experience of the numinous, of the sacred to be the real therapy that finally frees from the curse of pathology” (cit. after Kalweit, 1982a, p. 57).

Even in other Western forms of psychotherapy the positive potential ASC is specifically used. Examples for this are: focusing, Reichianic body work, rebirthing, hypnotherapy, certain forms of

music therapy, biofeedback, autogenous training, imagination procedures, sensory deprivation, holotropic therapy, substance-supported forms of psychotherapy etc.

## 7. Entheogens in Western psychotherapy

The therapeutic potentials of modified states of awareness described above constitute also the basis in psychotherapy for the work with substances which modify the state of awareness.

Within this context **substances, which modify the state of awareness** serve as a medicinal tool. Psychotherapy would, thus be more efficient and the treatment shorter. The benefit of these substances is based on effects, which are contrary to psychopharmacological treatment, such as tranquilizers. Tranquilizer, rather mask the problems and conflicts of the patient, making them appear less severe and important, whereas substances which modify the state of awareness resuscitate the conflicts in depth. This helps to resolve them and makes them accessible for a psychotherapeutic treatment.

Renowned authors such as Sandison [psychoalytic therapy], Osmond [psychedelic therapy], Martin and McCritic [LSD analysis], Levine and Ludwig [hypnodelic treatment] and Roquet [psychosynthesis], Grof [psychedelic and holotropic therapy] and Leuner [psychoalytic therapy] combines substances, which modify the state of awareness with divers therapeutic approaches.

Subsequently, I would like to elucidate effects of entheogens on the human psyche and their influence on the brain. Thereafter, Leuner's psychoalytic therapy as well as Grof's psychedelic therapy are described more in detail, referring to in examples.

With the ingestion of entheogenics interaction with neurotransmitters takes place on a biochemical level and modulates their functions.

Entheogenics can have an effect on the neurotransmitters of the brain, because their basic chemical structure is very similar. There is remarkable similarity in plant chemistry and the chemistry of the human consciousness. Psychoactive substances have the same basic structure as neurotransmitters do. They can connect with the same zones in the nervous system. These substances can stimulate functions, which are connected with the nervous system, suppress or modulate in some way and, thus generate modifications in the impulse transmitter system. This creates or activates junctures or connections, which in a normal state are inexistent in this form or it normally stimulates simultaneously separate processes. The result is a modification of the impulse information processing and the collapse of habitual cogitations.

Not only the particular chemical composition of psychoactive substances is significant, but also the specific lineup of the atoms in a molecule, which can influence the effect crucially, i.e. ISO LSD, which differs from LSD only in the lineup of its atoms does not have a psychoactive effect [Schultes and Hoffmann, 1980, p. 174].

Few is known until now about the effects of entheogens on the brain because of research restrictions. Many results from research with animals do not reveal much about their effect on the consciousness and are only restrictedly transferable to human beings. Besides this, most of the research refers to LSD or single substances, which had been extracted chemically from plants therefore even less is known about the specific effects of the different plants. Furthermore, the effect of these substances is complex, so that results from research are contradictory and partially inconsistent [compare Winkelmann 1996]. This seems to depend on various factors such as alteration of the substances in dosage and period, different receptor

types influences by the same transmitter, as well as set and settings. Especially set and settings influence the effect remarkably.

### 7.1.1 The Serotonergic System and Substances similar to LSD

Influences of hallucinogens similar to LSD on the serotonergic system will be described subsequently and will give an idea of their effects on the consciousness.

The serotonergic system is the largest monoamine neurotransmitter system of the brain and has many fields of activity in the central nervous system. The cell bodies of serotonin neurons are found in the raphe nuclei of the brainstem. The endings of these cells are, however, spread over the entire brain and spinal cord. Serotonin modulates the functions of areas in the brainstem [raphe nuclei and reticular formation], the limbic system [hippocampus and amygdala] as well as the frontal cortex [esp. the visual and auditory cortex]. The most important function of serotonin on the cellular level is, the obstructing effect on receptive neurons.

Besides acting as a neurotransmitter 7.1 Effects of Entheogens on the brain and vasoconstrictor, serotonin also contributes crucially to the cerebral blood flow and regulation of blood pressure, obstructs gastric secretion and stimulates various groups of muscles.

Other important functions partially conducted by serotonin are growth, thermo regulation, sensation of pain, motoric activity, behavior, sensation of hunger and food ingestion, sleep and wake rhythms, integration of emotional and motivational processes, synthesis of information from the entire brain, conduct of attention. Serotonin neurons and their projections partake in some psychic disorders, i.e. fears, depression, eating and sleeping disorders, schizophrenia, migraine and various psychosomatic disorders [compare Winkelmann 1996].

The serotonergic system plays a key role in its function as an information processor as well as in its understanding of a wide range of effects of psychedelic substances. The serotonergic system modulates like a mediator physiological and behavioral functions according to external and internal reactions. It moderates for example the reaction on incoming impulses and hinders or slows down overpowering impulse income. Serotonin fosters the forming of habits and protects an overflow of information [Rosenbohm, 1991, p. 14]/

Hallucinogens similar to LSD can have a direct or indirect influence on all areas of the brain mentioned above. Their effect depends on dosage and period of efficacy. Their systemic effects range from levels of neuronal transmission to integration of emotional and cognitive processes [Winkelmann, 1996, p. 28]. They generate integrative processes and influence sensitivity, memory, motivation, emotions, experiences and habitual behavior [Freedman, 1984, Winkelmann 1996].

Generally spoken hallucinogens act as agonists or antagonists of serotonin. For example, by blocking the obstructing effect of the serotonin, they release the postsynaptic neurons, which leads to increased activity in the affected areas.

Psychedelics contribute to the processing of well-known impulses as something entirely new, because they influence the serotonergic system. Thinking processes, differentiation, sensation and sensitivity are increased.

Areas of the limbic system designated to emotions as well as the visual fields of the neo cortex count with the highest density of serotonergic neurons and are, therefore influenced by psychoactive alkaloids in an extremely strong manner.

Another effect of hallucinogens similar to LSD is that a brain electric consequence of the blocked serotonin neurons leads to a de blockage of the limbic temporal Lobus structures. This induces the septale hippocampus to produce synchronized slow wave discharges. These transmit into the frontal cortex and replace the normal desynchronized state by slow coherent impulses, which synchronize the cortex and induce a parasympathic state. This can release the sensation of a transcendental state [Winkelman, 1996]

#### 7.1.2 Effects of psychoactive substances similar to LSD on the macro level

Described physiological mechanisms of psychedelic substances can be used as a basis for associated physical, cognitive phenomenological and transpersonal experiences. This will be briefly explained as follows [Winkelman, 1996].

##### 7.1.2.1 Sensorial effects

Modifications of sensitivity with the ingestion of psychedelic substances ensue an activation of sensorial processes with a simultaneous blockage of areas in the cortex, which control the sensorial input.

Different mechanisms are responsible for visual modifications of perception. By blocking the serotonin, visual areas of the cortex are de blocked and the activity of the Locus coeruleus is increased. At the same time visual structures of the brain, which are “normally” obstructed cannot be suppressed anymore. An outpouring of visual impressions occurs. The effect of hallucinogens similar to LSD on the reticular formation blocks the usage of the normally applied framework to interpret the input from the environment. Well known things appear as something entirely new. By stimulating the amygdale and the hippocampus in the limbic system, the attention is intensively turned inside and emotionally important memories are activated. Processes, which suppress this material in a waking state are, furthermore silenced.

##### 7.1.2.2 Effects on Behavior

Effects on behavior depend on dosage and period of efficacy of the psychedelic substance. Low doses seem to increase locomotion and various reflexes whereas high doses seem to decrease them and contribute more to focus the attention inside and concentrate on the interior world of images.

Low dosage of psychedelic substances show as one of the main effects dishabituation on the behavior, which means reacting on well-known situations as if they were new. With psychedelic substances the behavioral habituation can be modified. Habituated behavior can be dishabituated and responding reactions, which appear with a reinforced behavior, can be disturbed. The blockage of the usually used neural routes, create new behavior.

The organism is, thus forced to expand the perspective and show new habituation.

High doses, however seem to create a parasympathic state, inducing decreased activity.

#### 7.1.2.3 Emotional Effects

Effects of hallucinogens similar to LSD create on various areas of the limbic system characteristic “symptoms” such as intense emotional experiences, emotional lability, dreamlike feelings, focus on inner experiences, unusual physical sensations, experiences of depersonalization, etc. Furthermore, emotionally important life experiences as well as other pre and subconscious material emanates into consciousness.

Their tendency to elicit distressing personal material, unresolved conflicts, repressed experiences, and not integrated aspects of self and behavior suggest that the stimulation of limbic systems provoke the release of memories, perhaps those not yet integrated in long term stable memories. Psycho integrator [ such as psychedelics] stimulate the primary activities of the limbic system emotions and interpretations related to the sense of self and social attachment [Winkelman, 1996, p.41]

Within a favorable setting this facilitates catharsis and or processing and integration of the material into the personality.

### Cognitive processes

The neuro physiological modifications of info processing, especially the activation of the limbic system explain the characteristic cognitive processes such as attention focused to inner processes, clarity of consciousness, increased importance of perception and the feeling of insight and understanding

It is also assumed that psychedelics create modification of the hemispheric dominance and synchronization of both parts of the brain. Integration of right hemispheric intuition and left hemispheric rationalism can occur. Mandell described this effect as “interspheric fusion” [Mandell, 1985, from Winkelman, 1996].

Transcendental experiences and deep insights often reported could be rooted within this phenomenon.

#### 7.1.2.4 Transpersonal Mode of Consciousness

Summarizing it can be said that in favorable settings hallucinogens similar to LSD are able to generate an activation of the limbic system as well as an increase of the right hemispheric stimulation and a synchronization of both parts of the brain;

“Their importance lies in the activation of emotional and personal processes of the limbic system and the paleo mammalian brain which underlie personal identity, attachment and social bonding, emotional stability, convictions and beliefs, and their integration with neo cortex processes. Psycho integrators [Footnote 37 Winkelman [1996] suggests the term psycho integrators instead of entheogens. Footnote end] stimulate the integration of behavioral promentation and social emotional dynamics with language based physiological effects may force emotional reactions, awareness of repressed memories, integration of

emotional and rational processes, and the resolution of conflicts through integration of different functional systems of the brain” [Winkelman, 1996, p. 9]

Different psychedelics apparently have similar effects on the consciousness in spite of their diverse chemical structure and repercussions on the brain. Synchronization of the cortex is reached by de blockage of the limbic system through slow wave releases of the hippocampus and induces a parasympathic state. Winkelman [1996] specifies this as transpersonal mode of consciousness. “This transpersonal mode of consciousness represents an optimized homeostatic balance among different functional systems of the brain which permits the emergence of integrative operations [holotropic processes].” [Winkelman, 1996, p. 39]. Integration of both parts of the brain can manifest specific human potentials. These are reflected in the world’s spiritual traditions and in the transpersonal psychology. These potentials incorporate great therapeutic possibilities.

This pattern of the functioning brain is also found in ASC induced by psychological stimulants. The organism produces “body owned” drugs, under certain circumstances. Psychological techniques, which induce ASC demonstrate this [compare Zehntenbauer, 1992].

The common biological basis of ASC is the source of a universal expansion in shamanism and other spiritual traditions.

Unquestionably it has been notified that experiences described by Winkelman are able to occur within favorable set and settings. Within unfavorable contexts negative effects are also possible, i.e. manifestation of depersonalization, disturbance of consciousness, panic attacks which can lead to psychic wounds. Therefore, psychoactive substances should be handled with supreme responsibility.

## 7.2. H. Leuner and his psycholytic therapy

The psycholytic therapy is a tiefen psychological therapy form as already mentioned [compare 3.3.2.]. One or a few sessions with a consciousness modifying substance is supposed to dissolve psychic tensions and conflicts. The conventional and on the problem focused psychoanalytic therapy works with an entrance dosage. Suppressed subconscious material is, thus activated. Consciousness expanding insights of how the psychodynamic and the conflict dependence of the symptomatic arose are to be awakened.

The founders of the psycholytic therapy pursued the following goal. “Create an intensified treatment which is even more adjusted [especially for emotionally strongly and/or already in early childhood disturbed patients as well as for those with lacking consciousness of conflicts]. With the support of the hallucinogen the therapeutic work can be decreased to a practicable extent” [Leuner, 1981, Leuner 1987, p. 152] [Footnote 38 Critics of psychotherapy with hallucinogenic substances think that the often faster contact with forgotten or suppressed traumatic experiences created by these substances is adverse, as well as a shorter treatment. They say, not enough time is provided to completely work with and integrate the psychotherapeutic material, which is emerging. Furthermore, the therapeutic effect of such treatment of psychic traumas would not last as long as if it had been worked on gradually [compare Schultes and Hoffmann, 1980]. Footnote end.]

Leuner developed this kind of psycholytic therapy practiced by him and constituted from the cathymic image experience, which is a daydream technique of psychotherapy.

Results of LSD experiments with neurotic patients, which lead to a spontaneous decrease of symptoms, [Sandison, Spencer and Whitelaw, 1954, Leuner 1987] caught his attention regarding the psychotherapeutic effect of these substances. Leuner anticipated an intensifying and deepening of catathymic image experience with LSD [Leuner, 1981, Dittrich and Scharfetter, 1987].

#### 7.2.1. Psychic effects of consciousness modifying substances from the angle of the psycholytic paradigm

Below a certain entrance dosage consciousness modifying substances have an effect on the psyche, which Leuner describes as “psychotoxic basis syndrom”. This effect is determined by “day dreamlike imaginations with closed eyes, a slight fading of consciousness” and an increased release of “moods, emotions and affects” [Leuner, 1987, p. 154].

This state often induces a “partial regression” similar to a child’s experience or emotion. The structure of thinking is generally entirely primary processing. The way of thinking is associative. The capacity to abstraction decreases and contradictions seem to dissolve. Unconscious material, which reflects latent conflict experiences, appears on the surface, f. ex. a symbolic image like in dreams or in catathymic images, but also decoded and directly. These can be structured on the emotional level with great certainty.

After subsequent psycholytic sessions, insights are revealed peu a peu about the patient’s psychodynamics, related to the symptoms. During the therapeutic process almost all phenomena of the tiefen psychological dynamic emerge. According to Leuner successful treatment requires a thorough tiefen psychological training and self experience with the therapy, as well as the skill to be able to feel empathically into the levels the patient is experiencing. Regular supervision is also imperatively recommended, mainly because of intensive transmissions and counter transmissions.

According to intensity of the disorder structure and age as well as developmental deficit of the patient, the therapy takes from three months to five years.

#### 7.2.2. Procedure of psycholytic therapy

Before the first psycholytic therapy session various sessions are effectuated without “substance”. While a tiefen psychological anamnesis is expressed, medical factors are clarified in order to examine indication or eventual counter indication of a psycholytic therapy. Furthermore, conversations, which focus on the conflict, are performed. The patient is prepared for the session, which is substance supported with different procedures, for example, catathymic image experiences.

Depending on the therapeutic task the current psychotherapy can consist of one up to more than thirty sessions. It is assumed that the therapeutic success increases proportionate to the number of sessions. The psycholytic sessions are mostly effectuated stationary and in groups of three to five patients. They last about five to six hours. The evening before the session individual conversations are held with the patients. This enables working with the actual problem and tune into the session. Right before the session the patients meet for a group discussion.

## Factors which influence the effect of the consciousness modifying substance

The psycholytic therapy uses various hallucinogens similar to LSD, which as already mentioned [compare 6.5.1.] can induce similar experiences, but differ in effect, duration, potential of effect and toxicity. According to Leuner, most favorable effects are reached with psilocybin CEY 19 and CZ 74 derivatives, which have an only three hours' effect, the short term narcotic Ketamin with subanesthetic dosage, MDMA and other "new" psychoactive substances such as divers synthetic Triptamin extracts.

Dependent on the patient's body weight and his personality, for ex., hysteric, compulsory, etc. the entrance dosage of the chosen substance is determined. This dosage should be high enough to create the "psychotoxic basis syndrom" and low enough to keep a "reflecting ego remainder" [Leuner, 1987].

According to the desired speed of resorption, which influence the behavior of the experience, the substance is administered orally, intramuscular or injected intravenous.

Set and setting influence crucially the effect of a consciousness modifying substance.

The term set relates to the inner psychic constitution of the patient. The inner tuning befor the session, the specific task, actual events, permanent unsettled conflicts, remote impressions and memories, as well as transmission and counter transmission relation between patient and therapeut determine the patient's inner constitution.

The inner tuning into the session is achieved with a preceding talk, which clarifies the partially conscious and unconscious set. The therapeut tries to obtain a positive tuning of the patient into the session by decreasing anxiety, talking about burdensome routine problems as well as dealing with topics of the last session and and eventually existing transmission feelings. In this way a relevant focus on the conflict is to be achieved [Leuner, 1987, p. 157] which will be worked on spontaneously in the psycholytic session. The term setting derives from the English theater vocabulary and originally describes the scene. In the context of consciousness modifying substances and their effect, setting means the environment and the surrounding atmosphere.

It is important to emphasize that psycholytic therapy is always integrated into tiefen psychological therapy.

In Leuner's preferred setting the patient will relax in a room where the light is dimmed and the atmosphere friendly, similar to the catathymic image experience, because of its positive effects on the therapy. The attention is focused inwards on emotions, fantasies and sensations of the body. The permanent presence of the therapeut or an assistant is to convey serenity, safety and human comprehension.

## Aftermath with consciousness modifying substance

After the psycholytic session and time for relaxation, the patients are asked to express their experiences in a creative manner, such as painting or clay modelling. Following experiences are exchanged in a group discussion. First steps for an interpretation are made. It is particularly important to work with the tiefen psychologically based material from the psycholytic sessions. First aftermath discussion takes place on the following day.

Reports constitute an important basis for individual discussions. These had been registered during the session and later transcribed by the patient. Equally important is the creative expression during the session.

### 7.2.3. Indication, counter indication and secondary effects

From his own practical experiences as well as from literature Leuner [1987] composed a list of when psycholytic therapy is indicated. In a broad range of psychic disorders, in particular chronic and to therapy resistant cases such as character neurosis, psycho-neurosis, abnormal states like perversions and chronic cases of conversion, who are strongly motivated for the therapy, or truly suffering, sufficiently ego oriented and successful in their professional career.

There is a relative counter indication with lacking motivation for psychotherapy, preceding suicide tentative, lacking of suffering, hystery with tendency of acting out, tendency of neglect, borderline patients and extremely infantile personalities.

Absolute counter indication for psycholytic therapy exists with brain organic damage, commenced pregnancy, endogenous depression, mania, acute or chronic schizophrenia, disability [IQ below 85], liver-parenthym damage less than two years cured.

To perform a psycholytic therapy with few secondary effects it is important to consider indication and counter indication as well as adhere to certain procedures.

[page 74 is missing]

..... The emerging of “overwhelming transforming experiences of a transcending kind” [Grof, 1987, p. 163] is considered within this context as the most important transforming implement.

It is worked preferably with LSD in psychedelic therapy. It is administered orally in a relatively high dosage [200/400 micro grams] as long as the patient does not show tendency to vomiting.

Within this therapeutic model the therapist assumes the task to access the patient to deeper levels of his psyche. He offers the patient an adequate method to induce an ASC in a safe context. He transmits the necessary confidence with a supporting backup to commit the patient to the process of self-healing. Furthermore, he is to help the patient to integrate the experiences.

Particularity of the psychedelic therapy is its low number of sessions. The therapy can be concluded after each successfully effectuated psychedelic session.

### 7.3.1. Procedure of the psychedelic therapy

The psychedelic therapy is composed of preparing stage, psychedelic session and aftermath similar to the psycholytic therapy.

## Preparing stage

Before the psychedelic session five to twenty hours of preparing conversations take place depending on the constitution of the patient. These enable the therapist to get to know the patient and his problems in a differentiated way. It also establishes confidence between patient and therapist, so the patient gets positively tuned into the session. These conversations deal more with sane aspects of life than the analysis of psychic problems. Particularly emphasized is the positive therapeutic potential, which is hidden behind each symptom.

## The psychedelic session

S. Grof valorizes very much the creation of a most favorable setting concerning his work with consciousness modifying substances. The room in which the session takes place should be cozy and sole. It should be equipped in a way that the therapist can spend the whole day undisturbed with his patient or patients. The interior should stimulate the senses, be as natural as possible, because of increased sensorial sensitivity in ASC. If possible, the patient should get the opportunity to experience nature during the session.

After ingesting LSD, the patient is to focus his attention inwards and to accept each emerging experience with confidence and without judgment. A selection of good quality music, in particular instrumental or intonations without direct spoken messages can support this process. Stimulants, which diverge the patient from his inner process, should be eliminated as far as possible.

The therapist leaves the patient mostly alone with his experiences and keeps up with him a minimal verbal contact, in order to be able to support him in eventual serious situations.

Analysis or interpretation is entirely avoided during the session. These have rather counter-productive effects on the experience (Grof, 1980).

## Aftermath

When the period with the most intensive experiences has ceased, the psychedelic session concludes with walks in nature or other pleasant encounters.

The patient can then, although still in an ASC receive close friends. The night following the session the patient should be accompanied by a person he trusts fully and the therapist should be reachable all the time.

The patient is recommended to start the following day with relaxing activities; write a report of the session integrating thus the experiences and deepen the understanding, paint the impressions or express with clay and talk with the therapist.

A calm, dreamless and refreshing sleep during the nights after the psychedelic session indicate a well-integrated session. Whereas intensive dreams indicate that because of the consciousness modifying substance subconscious material has been activated and is not yet integrated. Dreams can be a means of processing the experiences. If it seems necessary, the therapist can also foster the integration with other techniques, such as controlled breath work.

The ongoing of the ASC, worsening of symptoms after a psychedelic session or an unsatisfying result, are says Grof , (1980) an indication that an experience is not yet terminated. Most often another psychedelic session, shortly afterwards, helps in such cases.

### 7.3.2. Indication and counter-indication

The psychedelic therapy can be practiced with almost every psychic disorder, according to Grof, (1980). It has to be made sure that there is no physiological counter-indication. Adequate set and setting conditions need to be provided and sufficient guidance has to be guaranteed. Psychedelic therapy seems to be particularly successful with regressing alcoholics, drug addiction, depression and backing of patients with cancer at a terminal stage.

Neurotic, psychosomatic and personality disorders respond well to this therapy too, however, mostly demand a longer period of therapy.

Consciousness modifying substances can cause strong emotional reactions. For people with diseases of the cardiovascular system, arteriosclerosis, danger of thrombosis, anterior brain bleeding, heart attacks the psychedelic therapy is not adequate or the therapist has to proceed with extreme care. Similar procedure is indicated for patients with liver damage, organic brain damage, epilepsy, borderline personality disorders and florid psychoses.

Psychedelic therapy should not be endeavored in a pregnant state.

### 7.3.3. Expanded graph of the human psyche according to S. Grof

After working more than 30 years with LSD and later also with "psychological" methods, inducing states of consciousness, Grof made experiences, which according to him (1987) implicate an entire revision of the scientific Newton-Descartes paradigm, in particular the graph of the human psyche. (39 Footnote, a detailed presentation of Grof's graph of the psyche does not fit within this framework. The interested reader is pointed out to Grof (1978) Footnote end.

Additionally to the amnesic biographic field of the individual unconsciousness, Grof assumes a so-called perinatal field, which encompasses all human experiences related to birth and death and a transpersonal field, which includes experiences usually categorized as religious, spiritual, occult or mystical.

The different fields of the unconsciousness are represented as an undivided continuity of experiences, because of its complex, multi-leveled and multi-dimensional holographic structure"(Grof, 1987, p. 167)

An intended presentation of these fields underneath is according to Grof a strong simplification for didactic purposes.

## Sensorial barrier

When entering in an ASC the sense organs get activated. This is expressed in unspecific sensorial experiences such as hearing of humming noises, elementary visions of colors or geometric patterns, sensations of taste, odors, touch etc. These abstract sensations do not indicate a deeper symbolic importance or value for self-experience according to Grof.

## Amnesic biographic level of the individual unconsciousness

This dimension of the psyche is related to important biographic events and life circumstances, which an individual has experienced from birth to the present. “Everything can emerge from the sub-consciousness from a person’s life story at this level of self-research. An unsolved conflict, a restrained not integrated element of the memory, or an unfinished psychological “form” of any kind becomes part of the experience.” (Grof, 1987, p. 167)

Most of the Western psychotherapeutic systems do not work beyond this level. Divers outlines have been elaborated. However, the psychotherapy, working with experiences such as the psychedelic therapy differs from these other therapy forms in an essential manner. Traumatic events cannot only be remembered, but also literally be re-experienced with all its built-in emotions, physical sensations and feelings.

Furthermore, physical trauma and their built-in emotions play an important role in the development of different psychopathologies, whereas most psychotherapeutic systems do not pay great attention to this.

In particular life-threatening experiences seem to play a great role in the development of psychopathologies. Profound confrontation with death and its inherent pain and discomfort has its correlative in the psychic experience of birth.

## Perinatal framework

The perinatal realm of the psyche encompasses all elements, emotions and experiences related to biological birth.

Elements of this level are not only intimately related to life-threatening experiences on the amnesic biographic level, but also to transcendental experiences of the transpersonal dimension. The perinatal framework is at the same time link between the biographic and transpersonal realm and the individual and collective unconsciousness.

The experiences, which reflect this level of sub-consciousness are described by Grof as something very intense and complex. They mostly appear as five characteristic patterns of experience, closely related to the clinical stages of labor. Elements of the perinatal framework encompass: “Experiences of cosmic union” in the mother’s womb, “experiences of being swallowed” with the initiation of labor pain, “experiences of despair or hell”, as well as “experiences of battling with death and rebirth” in the first and second stage of the clinical stage of labor and experiences of death and rebirth during the last stage of labor and the actual childbirth (compare Grof, 1987).

Grof’s postulated perinatal framework links the corresponding stages of labor with biographic and transpersonal themes of “mythological, mystical, archetypal, historical, socio-political, anthropological and phylogenetic nature” (Grof, 1987, p. 169) and associates them with the corresponding psychic disorders (compare Grof, 1987).

## Transpersonal dimensions of the psyche

Usually the door to transpersonal realms of the psyche only opens by experiencing the above - described realm of the sub-consciousness, especially death and birth. “Somewhere within the

process of the perinatal expansion a peculiar, natural, möbiusartiger Sprung (seems) to submerge ..., where profound self-exploration of the individual sub-consciousness shifts into a process of experiencing an adventure and the universe as a whole. This can best be described as cosmic consciousness or super-consciousness” (Grof, 1987, p. 175).

However, sometimes a direct access to this transpersonal dimension is possible, which encompasses manifold mystical, spiritual or religious experiences. To Western intellect they usually do not appear as something real.

Common elements of these manifold experiences are a feeling of expansion of the own consciousness beyond the usual I and beyond space and time.

The transpersonal dimension of the psyche can encompass experiences such as fetal, i.e. embryonic memories and identification with the ovum and spermatozoon at the moment of fertilization, take part in the life of ancestors, amalgamate with other humans or their consciousness, or the consciousness of animals and plants and inorganic processes, as well as identification with the cosmic consciousness and the all-embracing spirit.

Another group of transpersonal experiences embodies for example visions of archetypal nature and forms, abstract archetypal patterns and symbols, as well as experiences, which are described in Western science paranormal phenomena.

Interestingly transpersonal experiences can unlock sources of information directly and without transmission by a sense organ. These sources of information are not included in the experiences of the individual. This could be partly verified after the psychedelic session. Examples are detailed memories of ancestors, often embodying specific details of their life circumstances and customs, or an exact insight into before unknown botanic processes by identification with the consciousness of the plant. Hence, experiences in an ASC reflect the material world partly in a correct manner. “This implicates unquestionably that every human being embodies in a still not clarified way information about the entire universe and the totality of existence, that every human being has potentially access to all parts of the universe, according to his experience. In a certain sense every individual is the entire cosmic network and on the other hand only a tiny piece of the whole, a separated and insignificant biological identity.” (Grof, 1987, p. 179)

Grof does not have any doubts that such experiences reflect authentic features of the psyche. These experiences, which have been observed in psychedelic sessions can also be created in their whole spectrum with non-pharmacological methods, such as the holotropic therapy.

Footnote 40 The holotropic therapy was developed by Christina and Stanislav Grof. ASC are used in a therapeutic way, similar as in the psychedelic therapy. In the holotropic therapy ASC are, however created without pharmacological techniques. It embodies hyperventilation, evocating music and other sound techniques, focused body work and the drawing of mandalas (compare Grof 1997) Footnote end

## Implications of Grof’s observations

Grof’s postulated graph of the psyche throws a new light on many observations coming from fields such as the Jungian psychology, anthropology, consciousness exploration and thanatology, which do not fit into Newtons’ and Descartes’ image of the world.

In particular the transpersonal experiences disconcert the assumptions of the materialistic science, fundamentally. However, they can be integrated into revolutionary evolutions of modern physics and other fields of science, which are designated to be a propagating paradigm.

From this point of view consciousness does not appear any more as an “epiphenomenon of substance and as a by-product of physiological processes in the brain”. “Consciousness seems to be a primary attribute of existence and is woven into the principal structure of the phenomenal world. Human psyche seems to harmonize with the entire universe and existence. It is not only a product of the biographic history of the individual itself” (Grof 1987, p. 179).

Taking into consideration human disorders this paragon implicates that their structure is a lot more complex than contemporary theories of main-stream psychology may assume. Processes in which conservative psychiatry often discerns symptoms of mental disease and suppresses them by all means, may embody great therapeutic potential. Only very few psychic or psychosomatic symptoms can be explained by means of the dynamic of the individual unconsciousness, according to Grof. Most clinic problems root in the perinatal and transpersonal matrix of the unconsciousness. Neglecting the therapeutic potential found in the experience with these dimension, represents a serious limitation of therapeutic efficiency of many psychotherapeutic systems.

## 10 – Sacred Medicine Plants in Amazonian Shamanism

The healing methods, practiced in Takiwasi have to be looked at from the cultural background of which they arose, in order to get a deeper understanding. In order to facilitate the access to the reader, I would like to introduce within this context principal aspects of the Amazonian shamanism.

The Amazonian area is one of the few regions worldwide, in which the ritual ingestion of sacred medicine plants has unbrokenly survived in shamanic tradition. The trance induced with the help of the plants facilitates access to other worlds to the “wise” ones.

These worlds appear to be more significant than every day reality and are considered as the world of cause. The shaman uses the sacred medicine plants as a tool to travel within space and time and to access the shamanic universe with its upper- and underworlds. The trance induced by sacred medicine plants helps the shamans to communicate with the spirits of the animals and plants as well as to get the support of “supernatural helpers”. This is why these plants are the most important tools to heal diseases and do diverse other shamanic work in the Amazonian shamanism.

The shamans consider the contact with the elementary beings, which embody the essence of the plant to be accountable for the effect of the medicine plant, but not a chemical substance. “The hallucinogenic plants, i.e. their elementary spirits open the eyes to the individual who ingests them. They show him the “other reality”, which is considered to be the reality anyway. And, in the end it is them and not the shaman who free the sick from their disease.” (Baer, 1987, p.71)

A constructive interaction with the “other reality”, however, requires an encompassing initiation.

### 10.1. Initiation to administer sacred medicine plants

“Among Amazonian ethnic groups shamanism is a specialization that only particularly gifted individuals pursue. It demands long training under carefully controlled conditions. It is like learning to navigate, only that the space in which they travel is interior and they might encounter more stormy waters and treacherous air currents than in the external world” (Luna, 1986, p. 162).

Most often an individual takes on the rough trail of a shamanic training within his own family with shamanic tradition, or the calling comes in dreams or with his own strong desire. (Footnote 50 Most of the Amazonian shamans are men. Women who are healers mostly work with herbs, massages, prayers and invocations) Footnote end

Often a future shaman discovers certain dispositions with the ingestion of sacred medicine plants, be it curiosity or because of having been cured from disease by a shaman. This disposition he will continuously develop. The shamans say: It is the plant, i.e. the essence of the plant (“madre de la planta”) which chooses the individual to become shaman.

A shaman whom I interviewed regarding his life story explained:

“The plant chooses the individuals who become shamans. I got the calling in a longer Dieta. Footnote 51 (Footnote: see below) I noticed that the plants had accepted me, and a relationship with them began. I felt the calling very strongly in dreams... The plants only call on a few in this way .... not everyone who makes a Dieta or drinks Ayahuasca becomes a shaman.” (IT3)

To be able to become a shaman, qualifications such as sufficient life force, courage, willpower and discipline are essential. The “elementary training” is very intensive and varies in duration. Depending on disposition and intention it can take from half a year to several years. Most often somebody who is dedicated to become shaman will learn from an experienced shaman. Main task of the teacher is to guide the apprentice to create within and around him the right circumstances to be able to learn straightaway from the spirit world. Sometimes the novice receives knowledge from the shaman – he teaches him songs or transmits part of his shamanic power. (Footnote 52: A phenomenon, which has often been reported, is that shamans can communicate telepathically with their teacher under the influence of psychotropic plants. In this way important knowledge is transmitted. (compare e.g. Cordova Rios, according to Halifax, 1995, p.162) Footnote end.

Besides this he protects the apprentice from spells of sorcerers and bad spirits. The immediate learning from the spirit world, in particular the spirits of the plants, (compare 10.1.2.) plays, however a chief role in the training. The so-called Dieta is an appropriate support for acquiring this kind of knowledge.

#### 10.1.1. The Dieta

Like in most shamanic traditions, restriction of food, isolation and sexual abstinence are important aspects of the training. This is identical in Amazonian shamanism. On the one hand the term Dieta is employed in traditional Amazonian medicine to designate certain restrictions of food and rules of behavior. On the other hand it is also used for periods of time during which the novice, i.e. the shaman remains in the rainforest isolated from his community, fasts and ingests certain plants.

Restriction of food most often encompasses: salt, spices, chili, sweets, all kinds of fruit, pork, meat, certain kinds of fish, etc. Besides sexual abstinence other rules of behavior have to be followed, such as avoid contact with other people (except the teacher), sun, fire etc.) An experienced shaman occasionally come to see the apprentice and supervises the Dieta. Only when the restrictions are followed and the body is sufficiently purified, the spirit world can communicate with the neophyte through dreams and visions, so they say. Amazonian healers say, that “the human beings (need to) get close to nature again, so that nature once more can communicate with them”. (IT3) It is important to follow the rules of the Dieta strictly. If the rules are disobeyed, the novice can suffer severe consequences.

The Dieta induces and puts up with a modified state of consciousness, which presents a vital part of the learning process. The frequent ingestion of sacred medicine plants reinforces the process. The shamans learn to direct and use intentionally the from psychotropic plants induced ASC. They acquire entire control over these ASC during their training of concentration and other extremely complex techniques. (compare Luna, 1986) The Shipibos (a tribe in Amazonia, Eastern Peru) call the shamans, therefore Nichivos, which means “Lords of the plants” (compare GT3). Those people have learnt to master the plant, i.e. their spirit. To be able to “see”, which means to receive clear visions, is considered to be the best attribute of a good shaman in many Amazonian cultures (Langdon, 1992, according to Shanon, 1998).

During the training the apprentices receive a lot of information about plants, animals, healing formulas and techniques etc. They get acquainted with “supernatural helpers” and learn sacred healing songs - the Ikaros - (compare 14.3.3.). Besides this they can acquire yachay or mariri. This is a special kind of secretion, i.e. “phlegm”, which the novice receives during the initiation either through direct transmission of the teacher or the spirits. It represents an important tool for divers shamanic healings (compare 11.4.).

They say that, both Ikaros and phlegm contain material and immaterial properties. With their help the shaman is able to absorb in his physical body the spirit of the plant with all its knowledge and attributes (compare IT3).

The Dieta can last from several weeks to several years. The spirits sometimes assign course and duration of the Dieta. Generally it is said that the length of the Dieta determines knowledge and power of the shaman. Only through repeated Dieta a shaman is able to renew his power and expand his knowledge (compare IT3).

Certain restrictions of food and rules of behavior are pursued for the preparing of specific medicines and the accomplishing of other shamanic work. Also patients sometimes have to follow a Dieta during their treatment because it allows the medicine plants a longer and more profound period of efficacy (compare IT1).

After an elementary training the apprentices assist in healing sessions, perform healing sessions and get instructed. Besides the Dieta, ceremonies with psychotropic plants are the most important instruction together with an experienced shaman (compare IT1).

Formation of the shaman, however never ends. A “good” shaman follows certain rules such as food restriction and behavior all his life. Regularly he complies with intensive periods of fasting, isolation and sexual abstinence. This is the only way to maintain and expand his power.

### 10.1.2. Plant Teachers

The comprehensive and detailed knowledge of the Amazonian shamans is impressive. Knowing an enormous number of medicine plants and their prescriptions, they can discriminate species of medicine plants and their substances by quality of soil, amount of sun etc. (Luna 1986). The shamans keep mentioning that great part of their knowledge regarding properties of a medicine plant, their usage, as well as many Ikaros and various other healing techniques come directly from the plant to the shaman. It seems that, shamans bypass trial and error sampling, but receive immediate access to various realms of awareness. Even though Western science with its Newton – Descartes paradigm cannot incorporate the imagination of an intelligent dialog between human being and plant, it seems that this way of attaining knowledge is widely spread and is reported by divers shamans and healers worldwide.

The Amazonian shamans say that certain plants have a particularly strong spirit. Individuals can connect and receive knowledge and power from them, as long as they follow the Dieta and other ritual rules. Plants want to be treated with respect – they will then come into dreams and visions as teachers.

The indigenous people of Amazonia assign these plant teachers to be their university, their teachers of the true reality (Luna, 1986). Psychotropic plants are called muraya-cai (“makers of shamans”) by the Shipibos (Eastern Peru) (Gebhart, Sayer, 1986).

Shamans repeatedly remark that learning from the plant principally means to maintain an intimate and continuous relationship with them, to know and sow them, to see them grow, to ingest them and experience their effects in the body. But to learn from the plants does not necessarily mean to become a healer.

Luna wanted to know more about which plants are considered to be teachers.

“I discovered that all plants, which are called doctores or vegetales que enseñan (plants which teach) cause either 1) hallucinations when ingested condensed; or 2) influence somehow the effect of the Ayahuasca brew; (53 Footnote see below) Footnote end 3) cause dizziness; 4) indicate strong emetic and/or cleansing properties; or 5) induce very vivid dreams. One plant often shows all of these characteristics or at least some of them” (Luna 1984, quoted according to Räsch, 1998, p. 707). Certain psychoactive plants are utilized as a tool in order to study healing properties of other plants.

“If a vegetalista (Footnote 54 Vegetalistas are in general traditional healers who work with medicine plants. In this context Vegetalista is a specialist with the usage of Ayahuasca) Footnote end. wants, for instance to see what effects a certain plant has, he will add a few leaves of this plant during its concoction. By perceiving the changes caused by the additive to the basic preparation, and especially by interpreting the information conveyed during the visions, the properties and application of the plants are studied. This information is also conveyed during the dreams of the following nights” (Luna, 1986, p. 66). Ayahuasca *Banisteriopsis caapi* is considered to be the most important plant teacher in Amazonia and holds a key role in Amazonian shamanism.

## 11 – Ceremonial Usage of Ayahuasca in Amazonia

“At the beginning of times the Earth was desert. There was a single oasis with an Aguaje palm tree (*mauritia flexuosa* L.F.). One of the warriors dreamt how to prepare Ayahuasca. He drank Ayahuasca and in his vision he was told to cut the Aguaje palm. He painted his body and danced around the palm tree. When the tree fell to the ground, it became bigger and bigger. The lumber became the Amazon and the branches its tributaries ...” (Amazonian legend, according to Luna, 1986, p. 47 f. translated by the author).

Ayahuasca means in Quechua vine of the soul or vine of the dead. It is the most widely known designation for the psychoactive liana Malpighiaceae *Banisteriopsis caapi* and its psychoactive concoction obtained from this liana. Divers indigenous myths of the Amazon, which go back to the origins of Ayahuasca understand the liana almost always as a gift of the gods. Many other names, which had been given to the plant, reflect the sacred dimension, which can be opened by these plants. They radiate great fascination. The Deseana refer to this plant when they talk about “gaxpi”, which means “plant which helps to go across the threshold” (Reichel-Dolmatoff, 1937, quoted according to Mabit, 1999). (Footnote 55 – Other names for Ayahuasca are f. ex. Natema, Caapi, Dapa, Mihi, Kahi, Pinde, Yahe, Moca Jene, Hoasca or Santo Daime). Footnote end. In Amazonian shamanism Ayahuasca is considered to be a plant, which can show the “way to the Gods”. It can establish the connection between: the visible and invisible world, humans and Gods, Heaven and Earth, the living and the deads (Mabit, 1999). It is said that Ayahuasca enables the soul to leave for a short time the limitation of the body and travel to normally veiled worlds. For many peoples the transcendental world represents the real world and is a specific source of knowledge.

The liana symbolizes a vital element of the spiritual and material culture of many tribes of the Amazon and extends more and more to the mestizos and white population. It is considered one of the fundamental supports of Amazonian shamanism, it is the key to its understanding. In training and instruction of the shamans it plays a determining role. Ayahuasca is regarded as the source in a great part of indigenous Amazonian art and mythology and has an important function in religious ceremonies. With Ayahuasca induced states of trance serve purposes such as: acquire supernatural helpers, fortune telling, diagnosis and healing of diseases, preparation of war and hunting expeditions, sorcery, acquire knowledge, transmission of information to remote relatives, find answers to personal questions, acquire knowledge of nature, gain strength and divers skills, obtain insight into the plans of the enemy, find lost objects, etc..

Ayahuasca plays a very special role between the plants of the Amazon Basin and is often respectfully called “Mother Ayahuasca”.

It is known little about pre-hispanic usage of Ayahuasca, because no reports from missionaries seem to exist, whereas usage of other psychoactive plants are mentioned in early Spanish annals, e.g. the use of the San Pedro cactus, “achuma”, *Trichocereus pachanoi*, the snuff “Yopo”, *Anadenanthera peregrina*, or *Datura* preparations, “chamico”, *Burgmansia* (compare Chavez-Velasquez, 1977).

Archeological discoveries, however point out that ritual usage of Ayahuasca was widely spread in divers South American cultures. It already played an important role within the early temple cultures of the Peruvian highlands (Chavin, Moche etc.) (Andritzky, 1989a). Presumably its usage in the Amazonian tribes, date back to distant times (compare Furst 1976). Ayahuasca is first time mentioned in a European geography book, in a text about

Ecuador. There it is documented that different groups from the Rio Napo Region use Ayahuasca with the following intentions:

“To foresee and to answer accurately in difficult cases, be it to reply opportunely to ambassadors from other groups in a question of war, to decipher plans of the enemy through the medium of this magic drink and take proper steps for attack and defense, to ascertain when a relative is sick what sorcerer put on the hex: to carry out a friendly visit to other groups, to welcome foreign travelers: or at last to make sure of the love of their womenfolk” (Villavencio, 1858, quoted according to Schultes and Winkelman, 1995, p. 217).

### 11.1. Preparation

Different tribes use different formulas of preparing Ayahuasca. For therapeutic usage in Takiwasi the following recipe appeared to be the most reasonable:

The plant is cut into little chunks and dried in the sun for several days. Then it soaks in water and is boiled over the fire with lots of water and *Chakruna psychotria viridis* in two stages, each lasting from six to eight hours. Depending on the intention of the ceremony other plant substances will be added to this brew. The solid parts are filtered out and the yellow brownish bitter tasting liquid is filled into bottles and kept in a cool and dim spot. The “Ayahuasqueros” emphasize therefore, that it is not enough to know the recipe and thus make a good Ayahuasca brew. The collecting, harvesting and preparing is much more of a ritual. It solicits certain rules of behavior, specific nourishment and initiation into the process, “to respect and honor the spirit of the plant”, only then “the plant will work well .... because the plant absorbs the energy of the person, who prepares the concoction. The purer the energy, the better the preparation”. (IT3)

### 11.2. Pharmacology

Lewin effectuated first chemical analyses of the main substances of psychoactive Ayahuasca in 1929. He extracted the alkaloid substances, 56 Footnote: In 1851 the usage of Ayahuasca by indigenous of the Rio Negro had been observed by the English botanist Spruce. He determined the plant botanically and took samples of the plant back to Europe for chemical analysis. But it was only in 1969 that this material had been analyzed. Surprisingly, this substance which had been stored more than a century, revealed the same results as a recently effectuated analysis would have shown.) Footnote end.

and believed they were new alkaloids and named them Banisterin and Telephatine. In 1957 divers B-Carboline (Harmin, Harmalin and Tetrahydroharmin) were identified as main psychoactive substances. Later it was discovered that these alkaloids were identical with extracted alkaloids from the Syrian rue (*Peganum harmala*).

The Amazonian area counts with a 100 species of *Banisteriopsis*. For Ayahuasca mostly used are the species *Caapi* and *Inebrans*. Indigenous people often distinguish various kinds of Ayahuasca, which botanically are identical. What qualifies the plants for discrimination are ecological conditions (minerals of the soil, light, moisture, age), which lead to subtle effect variations (compare Schultes and Hoffmann, 1980). When the basic beverage is prepared, most often other plants besides Ayahuasca are added to strengthen and modify the effect. The additives vary from one area to the other and also depend on the purpose of the session. (Footnote 57: For certain purposes Ayahuasca tea is made only with the Ayahuasca plant. This beverage has primarily a cleansing effect (to purge). A specific preparation and dosage can cause visions with dominating colors such as grey, purple and blue. Eventually this effect

is due to an inhibiting action of MAO by B-carbolines, which engenders an increase of serotonin and endogenous Catecholaminen (compare Schultes and Hoffmann, 1980, McKennon et al. 1984).

With addition of Tryptamines the brew is a lot more psychoactive and the visions encompass more and more intensive colors such as red, yellow and green (compare Schultes and Hoffmann 1980). Footnote end

Some plants can heal diseases or “send you on a journey”, teach healing songs, or teach how to heal, make you see visions. The synergetic effects with Ayahuasca or various plants are described by the Ayahuasqueros (Footnote 58 Ayahuasqueros are shamans who are specialized in working with Ayahuasca Footnote end ) with terms such as “companion plants” or “plants which know each other” (McKenna et al., 1986, p. 82 f.).

Luna (1986) describes 30 different botanically identified plant teachers, which are admixture plants to Ayahuasca. Most of them are psychoactive and contain DMT. Most common is the addition of the leaves of the Chakruna bush *Psychotria viridis*. The name in Quechua means bridge of the human being. The leaves of this plant are rich in N,N-DMT (N,N – dimethyl, tryptamine) and other tryptamines.

The combination of both plants indicates a profound knowledge of shamanic pharmacology. The psychoactive constituents of Ayahuasca – the B-carbolines show psychoactive effects when ingested orally only in extremely high dosage. B-carbolines show however, even in low dosage, effective monoamine oxidase inhibiting action. The viscerale inactivation of MAO generates that body-owned and orally ingested tryptamines, such as in Chakruna contained DMT, are actively absorbed and pass the blood-brain barrier (McKenna, Towers and Abbot, 1984). (59 Footnote: Harmin is also found in the seeds of the Syrian peganum harmala, which since pre-historic times had been used for sacramental and medicinal purposes in the Mediterranean area, the Indus Valley and Central Asia. It is probable that in these areas effects of the combination Harmin with DMT containing plants such as *Saumya desmodium gangeticum* were known and used (compare Calaway 1995). Footnote end.

The unique combination of the constituents give the brew its consciousness modifying effect, although with a low concentration of alkaloids (10-30 mg), whereas experiments in which pure alkaloids (Harmins, Harmalin or Tetrahydroharmin) were administered, a concentration of 300-500 mg of alkaloids were necessary to reach threshold effects (Pennes and Hoch, 1957, according to Mabit, Giove and Vega, 1996). The synergetic effect of the Ayahuasca concoction can rapidly induce an intensive trance (after a few minutes to half an hour). It lasts about four to six hours. If the ritual is properly effectuated, there will be no secondary effects. 60 Footnote: compared to the parental applied DMT, the effect of Ayahuasca is less intensive (compare McKenna et al. 1998). The effects begin gradually but last longer (compare Riba and Barbanoj, 1998 Footnote end).

For many Western scientists it is a mystery how this recipe was discovered. For Ott it is “one of the greatest pharmacognostic discoveries of prehistoric times” (Ott, 1984, p.48). Several researchers, who worked intensively on this subject, do not believe that trial and error sampling led to the discovery. Indigenous people declare that this recipe had been transmitted to them through the plant spirits by divine intervention (compare 10.1.2.)

As mentioned above, the effect of the liana is attributable to the MAO inhibiting action, which destroys the DMT. There are also the emetic “nauseating and laxative “secondary effects”.

The in the Chakruna contained DMT is responsible for the visions and is the most important constituent of the concoction. To be able to enjoy the psychoactive effects of Ayahuasca without these “secondary effects”, Pharmahuasca has been synthesized (Ott, 1994).

Traditional Amazonian medicine, however considers these “secondary effects” to be the main therapeutic factors when administering Ayahuasca to patients. This is why Ayahuasca is often called “Purga”, which means cleansing plant.

For the indigenous healer the liana is the more important constituent of the brew. They attribute its effect to the essence of the plant (madre de la planta), and not to the psychoactive constituent. With the ingestion the spirit reveals itself to the healer. For the shaman Ayahuasca is the teacher, who contains the visions and effectuates an energetic cleansing, whereas Chakruna bestows the visions with color. To talk in imagery, Ayahuasca is the text and Chakruna the lamp, which enables us to see and read the text and only then it becomes conscious.

### 11.3 Divers ritual usage

In the Amazonian cultures Ayahuasca is very much respected for its profound effects on human consciousness. It is always administered in a ritual context and accompanied by an experienced shaman. Without the contained protected space of the ritual, ingestion of Ayahuasca is considered to be dangerous. (Footnote 61: Fascinating reports of Ayahuasca experiences had as a consequence an Ayahuasca tourism of curious people to Amazonia. Numerous reports from travelers count with profound spiritual healing experiences (compare f.ex., Pinkson, 1993). However, many of the “pilgrims” undergo illusions or find themselves in dangerous situations, because they get caught from rapacious pseudo-shamans. They sometimes possess good quality Ayahuasca but are not initiated in constructive administering of this sacred medicine plant. It also occurs that highly toxic plant preparations, without psychoactive effects are sold very expensively footnote end). The plant and the ritual cannot be separated. A shaman explained it like this:

“The Ayahuasca ritual is like a channel directed towards the light – at the end of the channel. The shaman travels to the light where no dangers and demons are encountered anymore. But before one can get there, these demons and dark witches, which try to catch you and put a spell and fear on you have to be encountered ... This is why concentration and sacred songs are necessary, (Footnote 62: Arkana most probably derives from the Quechua word arkay which means to block, to lock (compare Luna 1986). It is used to designate objects or magic actions, which seal the individual, so that nothing bad can penetrate. The concept of Arkana is widely known in Amazonia. Diseases are developed by penetration of bad influences and the loss of the soul (compare Luna 1986) Footnote end) and call Arkana (protection) to chase a.m. dangers .... (IT3).

According to Luna (1986) about 72 different ethnic groups in Southern America use Ayahuasca today. They each developed own Ayahuasca ceremonies, connecting strongly with their mythologies. Plenty of literature can be found nowadays about the usage of Ayahuasca and a multitud of rituals are described (compare f.ex. Andritzki, 1989a, Baer, 1978, Dobkin, de Rios, 1972, Harner, 1973, Illus 1983, Lamb 1975, Luna 1986, Mac Rae, 1995, Rätsch, 1998, Reichel-Dolmatoff, 1975, Schultes and Hoffmann, 1980). It is impressive to encounter

similar elements in experiencing the mythic and ceremonial forms with the different cultures. However, different cultural customs are practiced with Ayahuasca.

In some cultures, such as the Columbian Tukanos, collective Ayahuasca ceremonies take place, several times a year. Then the entire tribe drinks the concoction, travels into the mythological world and gets to know the gods of the tribe (Reichel-Dolmatoff, 1975). From their point of view it is possible to anticipate time and death. The individual dies after ingesting Ayahuasca and his soul moves back into the original womb to connect with the gods, the first human beings and animals. Hence, the individual can understand his position in human society into which he was born.

“To be within the original womb, they believe that they are beyond the Milky way, whence came their ancestors in a canoe drawn by an anaconda snake with a man and a woman, the Tapicoa plant, the coca plant and the Ayahuasca plant” (Reichel-Dolmatoff, 1975).

These ceremonies also engender a strong socio-therapeutic function – they strengthen the group identity and harmony.

In many other Amazonian peoples (e.g. the Shipibo-Conibo) only a few, particularly trained, mainly male individuals – the shamans – drink Ayahuasca. They travel on behalf of the group to the other world. In this world they receive power and important knowledge to bring back to the group. These ceremonies are often held for diagnosing or healing diseases. Exceptionally group members, who are not initiated, drink Ayahuasca, for example in the case of a particularly complicated disease.

The Tukano tribe uses Ayahuasca in the same way, besides the seasonal festivities. Many other selva-groups probably practiced collective Ayahuasca ceremonies. The lack of sufficiently trained shamans however, terminated with these rituals (Langdon, 1979, according to Andritzky, 1995).

Rising urbanization made the usage of Ayahuasca expand to non-indigenous population. In many countries of the Amazon it is legal and part of their traditional medicine. (Footnote 63: In Brazil and Peru Ayahuasca usage is legal. In other countries of the Amazon legality is uncertain. Footnote end) Traditional aboriginal use had been incorporated into ritual practices of syncretic churches. However, ritual form and symbolism are still strongly rooted in the tradition. Ayahuasqueros, who were trained by an indigenous shaman, or have indigenous roots are considered as being particularly powerful (Luna, 1986).

The mestizos mostly use Ayahuasca for treating all kinds of illness. Dobkin de Rios did extensive research in Iquitos (Eastern Peru), [where mestizos supervise Ayahuasca use](#). Illness, which is believed to be magical in origin, or cultural syndroms (Footnote 64: cultural syndroms are diseases, which have to be understood only within their cultural context (compare Queckelberge, 1991, Pfleiderer, 1995) Footnote end) are treated more frequently, (Dobkin de Rios, 1984). Footnote 65: common diseases are: “Susto”, caused by an experience of horror, which engenders loss of the soul, “daño”, caused by a hex, which had been put on the person by a sorcerer, because of envy or revenge, “mal de ojo”, generated by envy, bad intentions or evil eye, and “pulsario”, strong abdominal and intestinal spasms, generated by repressed emotions, such as anger or sadness (compare Dobkin de Rios 1984 Footnote end). In urbane ceremonies mostly patients and shamans take Ayahuasca. This is a rather untypical setting for therapeutic use within aboriginal peoples. However, it is gradually expanding.

Within this mainly healing-oriented new tradition different syncretic churches arose during the last centuries. The biggest are Santo Daime and Uniao do Vegetal (UDV). There, Ayahuasca is used as a Sacrament. These churches also spread to US and Europe. Regular gatherings are held and participants of all ages drink Ayahuasca. With songs and dances collective trance is induced. The entire community takes part and can experience a strong cleansing and profound spiritual event. To drink Ayahuasca regularly is considered to be of great therapeutic value and healing. (Groisman and Sell, 1996).

In (12.2.3.3.) I describe a traditional Ayahuasca ceremony in Takiwasi. These ceremonies are similar to the above-mentioned mestizo healing ceremonies, where patient and therapist ingest the psychoactive liana. In the following I would like to explain important basic elements of these ceremonies as well as general characteristics of from Ayahuasca induced effects.

#### 11.4. Therapeutic tools of Ayahuasca ceremonies

The traditional Ayahuasca ceremony and its elements count with a thousand years of experience with the effects of the plant. It offers a safe space for profound trance, which can be generated with the ingestion. This safe space is important. Intoxication and visions can become so intense that participants may develop dangerous hallucinations, leading to panic attacks or mental destabilization, if not canalized (compare IT1). (Footnote 66: The traditional Amazonian medicine explains these fear engendering visions as follows: - outer factors such as interference of other participants or environment, influence of sorcery, ancestor spirits, demons and other supernatural beings, or a poorly prepared Ayahuasca concoction, - internal factors such as wrong behavior, disrespect of Ayahuasca or rules received in anterior visions, visual manifestation of illness, i.e. toxins in the body, incapacity to confront with the true self or being caught in its own contradictions. Footnote end) The shaman acts as a channel in the ceremony, which allows the group to contact and come back from the transcendental world within a safe space (compare IT1). An extensive training is required from the leader of an Ayahuasca session. J. Mabit describes as follows:

“The leader of the ceremony is required to have gone through profound initiations, to be free of personal problems and own spiritual maturity. This is very important. He needs to be conscious of his personal limitations ... The work with the own personality is of mayor importance, because interference with the patient’s personality can otherwise occur. The problem of transmission and counter-transmission is similar in psychoanalysis. However, the ritual provides a protection not to blend personal matters with the work on the patient. This skill is absolutely needed to be able to lead people into deep trance states ... Spiritual power and knowledge of the shaman exercise great influence on the quality of the session.” (IT1)

The fact that therapist as well as patient go into a state of trance, are against Western understanding of responsibly working with psychoactive substances. From an indigenous perspective, however this is required in order to powerfully lead and accompany the participants in their state of trance. Thus a “complementary sensibilization” (Andritzky, 1989a) in ASC is achieved, which represents an important therapeutic tool in Ayahuasca healing ceremonies.

As already mentioned above Ayahuasqueros learn in the training to handle and entirely control their ASC. They can receive very powerful visions with Ayahuasca without experiencing the symptoms of intoxication. Ayahuasqueros follow their visions and are able to return whenever the session requires so, or when a patient is in need of treatment or

support. They can focus their vision on diagnosis and healing of diseases. During their initiation they learned to use the body to “metabolize” and harmonize the energy of the patient (IT1). Furthermore, various techniques enable them to canalize the ASC of the participants of the Ayahuasca session. They are able to invigorate, weaken or end the ASC. Within this context Ikaros, Sopladas and Chupadas play also an important role, besides the interventions. An intervention of the therapist can be: to put a hand on the patient’s head or on a painful part of the body, or to pour water over the patient’s neck. Ayahuasqueros do not intervene every time, because so-called bad experiences can constitute an integral part of the healing.

Ikaros. The ikaro apparently derives from the Quechua word *ikaray*, which means, “blow smoke to heal”. Ikaro is the designation for sacred songs. The shaman works with these songs during the ceremony, where they are assigned primary significance.

“The songs are of primary importance during the Ayahuasca sessions, because all the visions of the Ayahuasca spirit manifest through them. The songs constitute a spark and a form-taking stimulus. They are shaping and controlling the mentally already existent cultural mythic pattern of the visions” (Andritzky, 1989a, p. 186).

Ino Moxo, who is a Peruvian Ayahuasquero describes the role of the ikaros in an Ayahuasca ceremony as follows:

“When one takes ayahuaska, one becomes like a crystal, said Ino Moxo. One becomes like a crystal exposed to all spirits that live in the air, both evil and good ones. It is for this reason we have icaros, icaros to protect ourselves, icaros to heal, songs to call forth a certain spirit, to counteract others ..” (Calvo, 1995, p. 208).

Ikaros can induce or modulate the appearing of certain visions. They can stimulate on different levels sub-conscious material. At the same time they can take on the role of a guide into the inner worlds and help integrating the visions. The songs connect constantly with reality. They constitute a map of orientation and center of information when the “psychonaut” is traveling in the world of visions. Their effect is similar to Indian mantras (compare Giove, 1993). A strong guidance with the ikaros makes an ayahuasquero even more powerful. The songs are “healing weapons” (*armas curativas*) for the shamans. They consist of wisdom and are the vehicle, the personal energy of the curandero, the symbol of his power (Giove, 1993, p.7, translated by the author).