

Destined for Shamanic Inspiration. An Integrative Study of Buryat (Neo)Shamans

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Introduction

Altered states of consciousness (ASCs) experienced from time to time by people of creative professions, adepts of different religious and magical-mystical cults, people taking hallucinogenic, narcotic, alcoholic drugs, and individuals with mental issues or diseases, attract more and more interest of researchers in various scientific areas. In this respect the research field of ethnology and folklore studies allows to study (in collaboration with neurophysiologists, psychiatrists, psychologists, etc.) adepts of various religious and magical-mystical practices (including shamanism), performers of epic songs, storytellers – to number several of them. At present this field includes, first of all, neo-shamans¹, folk healers and adepts of some neo-religious movements (Kharitonova et al. 2008). All of them quite knowingly resort to ASCs, many of them do this not out of mere curiosity, but feeling a need to experience these states.

Among above mentioned practitioners there are people who fall hostage to ASCs, because, on the one hand, their organisms can not function normally

1 In the context of Russia the term *neo-shaman* is used in relation to representatives of those peoples who have had well-developed shamanism until quite recently. These people, as a rule, resorted to the shamanic practice of their ethnic tradition indirectly in the context of “rebirth of shamanism” by attending courses of healing, magic, bioenergotherapy, or learning from any of the “new shamans”. The term *urban shaman* is used to refer to representatives of non-shamanic ethnic groups practicing in big Russian cities (for details see: Kharitonova 2006). In western anthropology there is a broader reading of the term *neo-shaman* (Johansen 2001; Townsend 2004).

without these psychophysiological and psychomental states, and – on the other – their role activities imply entering ASCs. These are epic singers and (neo)shamans. This paper presents an experimental integrative study of Buryat (neo)shamans. It was conducted in November 2003 (Republic of Buryatia and Aginsk Buryat autonomous region of Chita region) as a part of the interdisciplinary fieldwork with participation of an ethnologist, psychologist, ethnic psychotherapist (Buryat), and a neurophysiologist².

According to observations of the researchers of shamans, in a traditional society *shamans* are “chosen by the spirits” against their will (Basilov 1984), they are people “destined to shamanic inspiration” (Bogoraz-Tan 1910) who are doomed to carry “a heavy burden of the shamanic gift” (Shternberg 1936). Studies of modern societies where any of shamanic traditions is still in vigor prove that this evaluation of a personality that happened to play the role of a shaman stays unchanged today. (*Neo*)shamans and *folk healers involuntarily* start their *service* through the way of sufferings – for instance, *shamanic illness*.

“Shamanic Illness”

The concept of the “shamanic illness” remains essential for Russian (neo)shamans, although the term itself is pretty conventional and could be interpreted in different ways. It is worth expanding on both of its two

2 This study was conducted with support of the grant of Russian Foundation for Basic Research (project number 03-06-18003e), principal investigator – Kharitonova V.I., Cand.Sc. (Philology), Dr.Sc. (History). Similar studies were carried out by the Center for the Studies of Shamanism and Other Indigenous Spiritual Beliefs and Practices, Institute of Ethnology and Anthropology, Russian Academy of Sciences in 2000-2005 in the Altay Republic, Republic of Tyva, Khakassia, as well as Moscow region. Doctor Dagmar Eigner took part in the expedition to these regions in summer 2003. For results see: Kharitonova et al. 2006; Kharitonova, Ukrainzeva 2007; Ukrainzeva 2004; Meshcheryakova 2004; Meshcheryakova 2007; Sviderskaya 2008 and others. Neurophysiologic examination was conducted according to the program of N.E. Sviderskaya (Dr.Sc., Medicine) “Synchro-EEG”.

components. First, this condition is characteristic not only of people “chosen by the spirits”, shamans-to-be; similar sufferings could be seen in different cultures among people who go through a period of passage to become initiated into spiritual practices of magical-mystical character. Second, the word ‘illness’ is understood differently: for medical doctors usually it stands for a mental disease (Alimov 1961; Khokhlov 1965 and others); people knowledgeable about ancient traditions, including adepts of shamanism, often refer this condition to the word pain – physical pain and spiritual pain because of the initiation into super-knowledge (compare with: Halifax 1982; Hoppál 2000). This concept is largely changed in practices of modern (neo)shamans – today physiological sufferings, somatic illnesses, sometimes physical traumas, and even mere life conflicts and problems come to the fore (Kharitonova 2006, Pimenova 2007). In spite of this fact, shamanic debut of many candidates is still accompanied by serious psychosomatic and mental complications.

There are no reasons to question stories about these sufferings, if they make people change drastically their pretty well-off lives before the *shamanic calling*, e.g. break the families and careers. For instance, one of the studied shamans from the religious organization “Tengeri” (in the city of Ulan-Ude) before his shamanic activities used to be a vice-director at the Central market. Another shaman says that his way into shamanism came as a surprise to him, as he was a young man (year of birth – 1955) with higher technical education almost totally ignorant about this practice. Having become blind after a blow to the occipital lobe of his head in 1984, he became an invalid. The doctors were not able to help him; however, a Mongolian healer managed to partially restore his eye sight saying that this incident is nothing else but karma of shamans, and he needs to start up a shamanic practice to get cured (PMA 2006).

Modern people as well as people of the past do not want to change the fate of a common person for the hard life of a shaman dependant on needs of people around and orders of “spirits”. More than this, they do not want this for their children and grandchildren. Nevertheless, they believe that there is *will of spirits* hanging over them: after all they come to conclusion that they are destined to serve spirits and people through *shamanic inspiration*.

Shamanic states in the period of a candidate's passage correlate with *possession by spirits*, and is sometimes called "craziness" (from "to go crazy", i.e. to lose sanity). Refusal to go the way of a shaman usually leads to development of a mental or psychosomatic disease as a result of the progress of shamanic illness. If the person turns out to be capable of becoming a real shaman, they "get cured" at once.

Note that many researchers of shamans think that *shamanic illness* disappears when the shaman starts to practice rituals, although psychologists and psychiatrists have ambiguous evaluations of personality status of practicing shamans and healers (Adylov 1999; Meshcheryakova 2004; Meshcheryakova 2007). Professor I.V. Rodshtat, one of the well known Russian physiologists, who had studied specifics of the brain functioning and for many years had worked with people obtaining extra-abilities, including shamans, has given a detailed description of shamanic illness. He has connected senestopathy, which are characteristic for shamanic states, to symptomatology of the Kandinsky-Clérambault syndrome (schizophrenia), and with temporal lobe epilepsy as well. At the same time, he came to an optimistic conclusion that "even though the shamanic illness is irrelevant to the category of pathological processes, it seems to be using the same brain substratum for its development" (Rodshtat 2009: 450-451). I remind that C. Levi-Strauss, following S.M. Shirokogoroff, was of opinion that a shaman, who got out of his suffering, was repeating experiences of his shamanic initiation in his every shamanic séance (Levi-Strauss 2001), thereby not giving unhealthy manifestations any chance to take possession of him.

The old-age argument whether shamans and other adapts of magical-mystical practices are insane, or they are skilled hoaxers and quacks (Townsend 2000) has lost its relevance these days. However, some people still interpret *shamanic illness* as a predominantly cultural phenomenon that signals the person's wish and readiness to start up shamanic practice; some people see in *shamanic illness* serious psychoneurological transformations of personality status of a shaman-to-be.

Chosen By the Spirits

This goes to the question of how and why (whether at all) the condition of shamanic illness disappears when the person starts to perform rituals. It disappears because it becomes an element of the role play that is no longer needed (?); the practice of entering ASCs puts an end to psychoneurological seizures, that is why people with mental issues seek it using ASCs as a specific prophylactic means (?); the condition provoked by chasing of the spirits passes away as a result of establishing special relations with spirits (?)... There could be several explanations, because usually individuals involved in magical-mystical practices are very different, especially in their mental status.

The purpose of this work is not to describe all ways of leaving the state of *shamanic illness* of those persons *chosen by the spirits* and their transformation into adepts who *choose the spirits*. Rather, we will look at people who went through psychophysiological and psychomental transformations of the period of passage and started to practice rituals. The description of those people given at the beginning of the 20-th century by S.M. Shirokogoroff sounds very realistic (Shirokogoroff 1919): in psychoneurological sense these are the most powerful and sturdy personalities capable of entering ASCs (“entering trance”) and working in these states. Having experienced a psychoneurological crisis in the process of becoming a shaman (=personality growth), they come back to their *ethnomental norm* enriched by new knowledge and skills.

Overcoming the crisis needs to be followed by starting shamanic practice, as society controls those members who take on sacral roles. M. Eliade, for instance, wrote about the necessity of “recovery”: “Transformation of a new person to a shaman largely depends on their recovery” (Eliade 2002: 235). Note that as a rule in a traditional society with developed shamanism a person who had fits of “craziness” (Petri 1923) used to be attended by a strong and knowledgeable shaman who had to determine mental status of the client: in case of a mental or psychosomatic disease the shaman started to treat them, in case of *shamanic illness* – to teach them. In the process of education the

candidate went through spiritual initiation; besides they received social initiation with participation of tribe members.

The candidate needs not only to get rid of what is called *shamanic illness*, but in the process of education and initiations (in the Buryat tradition analyzed here there are several initiations – usually, more than ten), they have to master the right technique of entering ASCs and working there to become a shaman. They need to master the technique that is typical of their cultural tradition (it is related to the skills of managing brain activities), and at the same time learn as a professional the ritual practice they are familiar with from the very childhood.

Shamans function in the “culture of a ritual type” (Bayburin 1991), that is why in the last couple of decades, when traditional culture almost fully disappeared, modern (neo)shamans change their lives drastically and create a special cultural field around them ritualizing their cultural space, filling it with traditional and innovative symbols. The preserved background knowledge of folklore as well as their unique natural abilities help them do that. One has to agree with S.M. Shirokogoroff that it takes the most spiritually and physically sound society members to do what shamans do. However, for outsiders their “existence in two worlds” may appear as a life of people who are not fully mentally sane, or at least are different from common people.

So What - Are They Really Different?

In a sense, yes. To confirm this, let's look at the results of a neurophysiologic study of Buryat (neo)shamans (“Synchro-EEG” program of N.E. Sviderskaya) who use the technique of “spirit incorporation”, as opposed to techniques of “shamanic journey”, or “exorcism” present in other parts of Siberia and the North (for peculiarities of techniques and their distribution see: Kharitonova 2001; Johansen 2007).

During experimental work we conducted a neurophysiological study of people already practicing shamanic rituals. It was based on the idea that

shamans by the nature of their job need to have an ability to enter ASCs more easily. Moreover, most shamans who came to their mission through *shamanic illness* cannot live a normal life without entering these special states on a regular basis (see e.g. Shirokogoroff 1919 and others). These states, probably, function in this case as an additional way of psychic self-regulation. It should be noted that such modes of brainwork are not usual for the routine life of their countrymen. Usually, most people these days are totally unfamiliar with such experience. Thus, we can assume that shamans have certain biological predisposition toward a special way of perceiving reality. That is why we tried to reveal neurophysiological peculiarities of shamans related to their ability to enter ASCs more easily.

Using the method of electroencephalography (EEG) we studied peculiarities of electric activity of the brain of the Buryat people. We studied 16 shamans (knowing to various degrees the technique of 'spirit incorporation') and 15 locals who do not have shamanic abilities; the later constituted a control group. EEGs were recorded with 24 leads in subjects with closed eyes and measured in monopolar recording. Combined ear electrode was used as a reference. 60-80 second EEG recordings were performed with sampling frequency 127 Hz and band-pass filter 0.5-30 Hz. In the analysis of EEGs we assessed two indices of spatial organization of biopotentials: spatial synchronicity (SS) of biopotentials and spatial disorder (SD) of biopotentials. SS was assessed with the coefficient of cross-correlation between the activities of different cortical areas; SD was assessed with the multiple entropy test (Drevs et al. 1994). During the statistical analysis indices of SS and SD were averaged with 4 neighbor electrodes to form six main zones – frontal, parietotemporal, and occipital lobes of the left and right hemispheres. After Z deflection of SS and SD indices to lead them to normal distribution we assessed the importance of inter-group differences and changes of indices from case to case using Student's *t*-test for dependent and independent samples.

Based on the peculiarities of spatial organization of biopotentials one could judge about interactions between different nervous centers; these interactions in many ways define conditions for development of informational processes in the brain cortex. Correlation of SS and SD could characterize

contribution of biopotentials of linear and non-linear connections between electric processes of different cortical areas to spatial organization. Increase of SS level is explained as increase of expression of linear (i.e., quite simple and ordered in space and time) interactions that is majorly related to the influence of deep brain structures on cortex. Increase of SD reflects increase of complexity of spatial relations of biopotentials in this area (Drevs et al. 1994) that is related mainly to the processes in the brain cortex. It was shown that in case of moderate intellectual workload one could see increase of both indices, while increase in complexity of the task leads to decrease of SS and further increase of SD (Sviderskaya, Korolkova 1997). In other words, intense cognitive activity cannot be provided on the basis of linear relations between nervous centers. As the volume of processed information grows, non-linear relations between biopotentials that correspond to more complex and disordered neurodynamic processes become more important. Increase of SD followed by decrease of SS could be also interpreted as activation of compensation and adaptation mechanisms (Sviderskaya et al. 2003).

Comparison of EEGs recorded at rest revealed a series of differences in indices SS and SD between the control group and the group of shamans. Shamans have a clear decrease of SS in the left frontal lobe compared to the control group. According to SD-index, shamans have increased activity of frontal and parietotemporal lobes of the right hemisphere and decreased activity of the right occipital lobe.

As a rule, a wide-awake man in a regular state of consciousness reveals prevalence of activity in the frontal lobe of the left hemisphere and occipital lobe of the right hemisphere. As our studies demonstrated, peculiarities of the brain work of shamans even in the resting state – increased activity of the right frontal lobe with a decreased activity of the left frontal lobe and right occipital lobe – can indicate the fact that shamans have quite a different way of thinking. It is known that the focus of activity in the right hemisphere is related to individual predisposition to visual thinking, non-verbal intelligence and a cognitive style “synthesis”; the role of the right frontal lobe is showing to be dominant in providing heuristic, intuitive thinking (Pavlova, Romanenko 1988).

Simultaneous, or holistic style of processing information that is majorly actualized through mechanisms of the right hemisphere, implies simultaneous involvement of multiple neural elements and, as a result, allows to manage massive data with high speed. High filtering ability of these mechanisms is explained by the fact that they are not controlled by the consciousness and are actualized mainly without involving conceptual constructs (Sviderskaya 2002). This determines lower activity of the left frontal lobe among shamans that is closely related to the mechanisms of categorization and verbalization, and plays the key role in the processes of cognizing of experience, i.e. transforming knowledge in an abstract form understandable for other people (Pavlova, Romanenko 1988; Sviderskaya 2002). Apparently, decreased activity of the left frontal lobe creates optimal conditions for developing of intuitive processes.

Activation of the frontal lobes of the right hemisphere takes place in shamans mainly because of an increase in complex, non-linear interactions between biopotentials; probably, this creates conditions necessary for developing of specific informational processes in the brain cortex that facilitate intuitive thinking.

It could be concluded that the revealed differences in spatial organization of biopotentials could stem from prevalence of different brain mechanisms of information processing among representatives of the two groups under study. Namely, the control group tends more to use analytic mechanisms, while shamans use holistic, intuitive mechanisms.

Shamans Entering Altered States of Consciousness

We recorded EEGs of 11 shamans entering ASCs related to shamanic practice; in most cases it followed invoking guardian spirits, or spirits-patrons of the area, in three cases it accompanied diagnostics of the health state of somebody from the people present in the room.

While entering ASCs all eleven subjects showed in general similar changes of SD that allowed us to analyze averaged data for the group despite various specific nuances of ASCs (invoking spirits or health diagnostics).

In ASCs shamans have increased SS in the right parietotemporal lobe. According to the index SD, an increase of activity of parietotemporal lobes and right frontal lobes was registered.

It is known that parietotemporal lobes are closely related to memory mechanisms (Luria, 1973) and imagination (Crawford et al. 1996), the right parietotemporal lobe is involved in regulation of emotional states (Heller, Nitschke 1997). A series of articles (see e.g. Sviderskaya 2002) showed that activity of the right hemisphere dominates in ASCs; especially one could see increase of activity of central and temporal areas that corresponds to increase of awareness of unconscious, intuitive processes under decreased control – processes related to shifting of attention towards “inner world”, addressing individual experience.

Since in ASCs increase of SD level is observed – first of all, increase in areas involved in actualization of intuitive processes – we could assume that non-logical mechanisms of information processing are mostly realized through non-linear interactions between neural centers.

It is worth noting that increase of SD index in the right frontal and parietotemporal lobes that is seen in ASCs could be interpreted as increase of EEG characteristics already revealed in shamans at rest. It could be then deduced that the character of distribution of SS and SD background indices on cortex in shamanic practitioners reflects specific characteristics of the functional state of the brain that facilitates easier entrance into ASCs and optimal developing of intuitive processes.

Results of an Association Test: Shamans and Non-Shamans

We recorded EEGs of 8 shamans and 11 people from the control group while they performed an association test that helps assess vividness of imagination and verbal creativity. During the test the subject was given two words that are

pretty far from each other in their meaning, e.g. “night” – “cloak”, “clock” – “water”, “wolf” – “dust”, etc. According to the instruction, they were asked to find as many similar characteristics between these concepts, or associations that unite them, as they could. They had one minute to think it over. Therefore, the emphasis of the task was laid primarily on the quantity of the found characteristics; the instruction didn’t give any strong suggestions about criteria that should have lied at the basis of this search. That is why each subject could use the style of thinking that is more usual for them; they could solve the problem either with objective analysis of some of the objects’ properties, or make a comparison based on their personal experience and subjective emotional evaluations. Each participant was given 3-4 pairs of words. Then there was calculated an index of productivity that equals the ratio of total amount of associations of a person to the number of pairs suggested.

According to the association test results, the index of productivity is 2.6 in the control group, and 2.2 in the group of shamans. While the participants in the control group often based their answers on the analysis of particular properties of an object and tried to find similarities between its specific characteristics and details, the shamans found predominantly subjective associations of different nature that had situational or emotional and evaluative character.

Examples of the association test results showed by the shamans and the control group:

Words “wolf” – “dust”:

Similar characteristics found by a participant P.M. from the control group:

1. Both the wolf and dust have grey color.
2. Wolf hair is as soft and fluffy as dust.
3. Both the wolf and dust are bad: the wolf is a predator, dust is harmful to health.

Similar characteristics found by a female shaman Ts.O.:

1. When I was a kid, I was in a museum, and there was a stuffed wolf on display. An elderly woman who worked there shook off the dust from it.
2. Wolves as well as dogs sometimes roll in dust.

Words “clock” – “water”:

Similar characteristics found by a participant G.E. from the control group:

1. The clock runs, and water runs.
2. The clock could stop, and water could stop.
3. There is such thing as a water clock.

Similar characteristics found by a female shaman D.Ts.:

1. After lunch we will go swimming.

The comparison of SS and SD indices distribution on cortex of the control group and shamans while they performed the association test revealed different dynamics of spatial organization of biopotentials of members of these two groups. When shifting from the resting state to performing the association test the control group showed increased activity of the left frontal lobe according to SS-index. The SD level did not significantly change. The shamans demonstrated the opposite changes of SS-index compared to the controls: while doing the test the activity of the left frontal lobe decreased. SD level increased in the left occipital lobe.

Shamans and Creativity

Therefore, as opposed to the control group, shamans not only did not show activation of the left frontal lobe while performing the association test, but

presented further decrease of its activity. This fact may account for lower value of the index of productivity among shamans compared to non-shamans. As any fruitful creative process implies translation of the newly created knowledge into a form understandable for other people, it also requires involvement of mechanisms of awareness and verbalization related to activity of the anterior areas of the left hemisphere. Insufficient activity of these areas could hinder translation of the associations found in the test into the verbal form. It is not impossible that this fact explains why shamans use “translators” during rituals (the technique of spirit incorporation), as well as some storytellers use “elucidators”³.

The fact that shamans did not have activation of the left frontal lobe even during the verbal creativity test (i.e. activity that addresses this cortical lobe) means that peculiarities of their brainwork are pretty stable. Apparently, shamans have some difficulties with processing information with “left-brained” methods that are so usual for common people.

3 Possibly, not all of them have “elucidators”. Specific character of using ASCs by storytellers requires similar research with the “Synchro-EEG” program. At our request a psychiatrist E.S. Molchanova conducted a usual EEG-examination of three Kyrgyz manaschis. It confirmed that “professional manaschis have peculiar brain organization; this, on the one hand, serves as a prerequisite for developing of the talent and, on the other hand, is a peculiarity that separates them from common people. This peculiarity shapes manaschis’ destiny making them come back to ASCs experiences that give them relief. Such a brain organization does not reinforce stable attitudes towards life problems (if anything) and does not help keep good mental health” (Molchanova 2009: 422-423). It was proved that the process of storytelling of a manaschi is distinct in the visual-semantic (visual-verbal) type of synesthesia that requires simultaneous activity of both right and left hemispheres and is reached in the state of light trance (entering non-deep ASCs). These peculiarities account for differences between a shaman and a storyteller, while both of them have unique personalities. “Description of spontaneous appearance of images-words, musical commenting on what you see, staying in the world of vivid visual perceptions and rhythmic flow of speech – these are characteristics typical of a manaschi who sees what he talks about (and vice versa)” (Molchanova 2009: 424). E.S. Molchanova confirmed that “one cannot acquire this skill by learning the epos by heart” (Molchanova 2009: 424).

Pluses and Minuses of Shamans' Intuition

Thus, decreased activity of the left frontal lobe creates optimal conditions for the flow of intuitive processes. However, it is also known that this area plays an important role in shaping communication skills and social intellect (Dobrokhotova, Bragina 1994). There is an opinion that asymmetry of anterior cortical areas activity defines in many ways the type of reaction of a person to situations: dominance of the left hemisphere reflects functioning of the "system of achievement/approaching" that forms active reaction to a stimulus; while dominance of the right hemisphere is related to the work of the "system of avoiding/alienation" and, accordingly, a passive style of behavior (Davidson 1998; Davidson, Sutton 1995). In other words, in general dominance of the left frontal lobe is related to active interaction with the outer world and plays an important role not only in high verbal creativity, but also good social adaptation.

As it was mentioned before, shamans do really demonstrate difficulties with socialization (Kharitonova et al. 2008). Probably, for having sharpened intuition those chosen by the spirits have to pay the price of troubles in their everyday life and face misunderstandings on the part of their loved ones. Having a unique gift they lose out to common people on such trivial skills as the ability to get along with other people and handle life troubles with ease.

The Small Differences

They stand out not only because of the peculiarities of neurodynamic processes; psychologically, they also to a great extent stand out in the crowd – comparing with both insiders, and, even more so, outsiders (Kharitonova et al. 2006). A psychological test of (neo)shamans conducted in Buryatia and all Southern Siberia revealed quite unexpected peculiarities of their personalities, namely:

- 1) shamans most often have sanguine or phlegmatic temperaments; they could be both extro- and introverts, although they usually experience low levels of anxiety and emotional tension, they are emotionally stable;
- 2) shamans have well developed mechanisms of reducing mental tension, in spite of the fact that they have higher than average level of tension: it appears that shamanic practice acts as an independent, and not compensatory, type of activity;
- 3) shamans have poorly expressed individuality, stereotype and standard thinking;
- 4) the level of fantasy formation is unexpectedly low;
- 5) during rituals there are certain psychophysiological changes happening inside shamans' bodies that have situational character but are peculiar to this type of activity (Meshcheryakova 2006).

Note that in real life there are and there have always been shamans having different personalities, who in their practice have reached various stages of development that is reflected, among other things, in using ASCs. Besides, different shamanic techniques require different ways of entering ASCs that, accordingly, provoke different states. How and which technique is used depends on:

1. the tradition in which a (neo)shaman performs the practice;
2. the teacher who introduced a candidate into shamanism and initiated them into shamans;
3. personal abilities of an adept;
4. their psychophysiological state at the moment of the ritual;
5. peculiarities of each client;
6. the type of request made by a client.

Shamans using a drum to enter ASCs in the Buryatian tradition (in other traditions they may use a jew's harp and other instruments) reach shamanic inspiration necessary for their work. Certainly, well prepared (neo)shamans could enter the proper state without musical instruments or other attributes.

And this is because they are different - not only due to the fact that they are gifted with special abilities more than many other people. They are also different because they managed to keep their gift, and not to become sick, suicidal individuals, or outcasts because of this gift (Revunenkovna 2000); they managed to transform their shamanic illness to shamanic inspiration (that is slightly different from other types of creative inspiration) by means of learning, by psychoneurophysiological changes.

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The purpose of science is to study this "differentness" without prejudice, not labeling it as insanity or quackery. For ethnologists there is a special meaning in it: to try not to attribute everything they see in person during so called participant observation to cultural or medical aspects of somebody's functioning in society. The purpose of science is to understand the essence of what is happening to these people by means of integrative studies and to interpret sociocultural phenomena of shamanism more precisely.

Instead of this, on the one hand, sometimes we see mystical fears of researchers (especially local ones) who start to perform in an open or secret manner widely accepted "shamanic rituals"; together with this we see disappearing from their papers realistic assessment of the rituals and situations they observed. When researchers conduct the fieldwork and at the same time start to learn shamanic practices and even become initiated into shamans, the research interest, as a rule, gives way to the practice of "communication with spirits", and the intent of doing scientific research subsides. On the other hand, some scholars are still convinced that what really happens to shamans is impossible. This problem could be seen in discussions on the contentious issue of reality of ASCs in shamanic practice (Kharitonova 2007).

Unfortunately, the scientific view of peculiarities of shamanism shared by some researchers (first of all, ethnographers) is not only far from how it is understood by people involved in shamanic practice; the worldview of some scientists due to their strict logicized ("left-brained") thinking is contrary to the holistic perception of reality of (neo)shamans. Still, it is important to consider

not only this peculiarity when trying to have scientific precision in interpreting shamans.

The only way to a deep understanding of the phenomenon of shamanism is to approach it on a systemic and integrative level (Kogan 2004; Kogan, Kharitonova 2008), taking into account the data from different modern fields of science. However, up to now we have to sadly acknowledge that ethnologic science is separated from other disciplines, it lags behind modern scientific processes. This trait was well described almost a quarter of a century ago by Holger Kalweit, a psychologist, psychotherapist, and ethnologist, "Ethnologists have lost contact with modern science, but still cling to the worldview that was created at the turn of the century. Scientific theories of their society have left them behind. Together with classical ethnologies of Tylor and Frazer they are immersed in a dream about the material world built of bricks, and take pure pleasure in classical mechanical physics. Their tragic invalidity consists in the following: they outlived themselves and turned out to be enclosed in a three-dimensional cube mocked at with sympathy by a physicist as if they were a fossil of modern science" (Kalweit 1987).

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