

Final Paper

Barry Klein, PhD student, General Psychology

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Walden University

The 5D-ASC Test for Non-Ordinary States of Consciousness

Background and Purpose

Altered, or non-ordinary, states of consciousness (ASC) are subjective experiences noticeably distinct from ordinary waking consciousness. Such states are of limited duration, although “flashbacks” may emerge under certain conditions. They are often self-induced, as with meditation, fasting, hypnosis, or psychedelics, but may appear spontaneously from emergencies, traumas, or strong emotional influences. Much of the literature bespeaks the possible application of the better understanding of ASC toward improving treatments for psychiatric disorders (Studerus, Gamma, & Vollenweider, 2010).

The current 5D-ASC test is an extension of the OAV instrument, which, in turn, is based on Dittrich’s APZ (“Abnormer Psychischer Zustaende” -- Abnormal Mental States) questionnaire, and the two revisions mentioned are widely used for self-reporting subjective experiences of ASC. “OAV” stands for the German equivalents of the original three dimensions used: Oceanic Boundlessness (OB), Dread or Anxiety of Ego-death (DED or AED), and Visionary Restructuralization (VR). One article (MacLean, Johnson, & Griffiths, 2011) gives these groupings as *OSE*, *AIA*, and *VUS*, respectively.

In the most recent version of the test (5D-ASC), additional components include Auditory Alterations (AA) and Reduction of Vigilance (RV). These two versions of the Dittrich questionnaire have been used all over the world in at least 70 studies, mainly to report on psychedelic drugs, especially psilocybin, ketamine, MDMA, THC, and DMT (Pistoia, Mura, Govoni, Fini, & Sara, 2010), but also including studies dealing with various induction methods and psychosis (Vaitl et al., 2005).

History and Description of the 5D-ASC Test

The three dimensions of study are Oceanic Boundlessness (OBN), Visionary Restructuralization (VRS), and “Dread of Ego-Dissolution” (DED). The OBN scale measures properties of states associated with mysticism and religion; the DED scale surveys cognitive disturbances, negative depersonalization, paranoia, and loss of control; the VRS scale measures hallucinations of all kinds, and changes in the meanings of percepts and symbols.

Responses to individual questions are grouped into eleven categories: Experience of Unity, Spiritual Experience, Blissful State, Insightfulness, Disembodiment, Impairment of Control and Cognition, Anxiety, Complex Imagery, Elementary Imagery, Synesthesia, and Changed Meaning of Percepts. A subset of 65 questions are tabulated, but there may be more. Covariant statistics are then applied for comparing these categories (Studerus, Gamma, & Vollenweider).

Psychometric Qualities of the 5D-ASC Test

The 5D-ASC questionnaire is a visual analogue self-rating scale consisting of 94 items, assessing five primary dimensions and one global dimension of ASC. The main factors of the instrument are: 1) OB, which concerns euphoric or exalted states of non-self or being at one with everything, often accompanied by time distortion or sense of timelessness. 2) AED comprises thought disorder, anxiety, arousal, and loss of self-control. 3) VR gauges changes in meaning and perception; these questions are clustered on *basic illusions and hallucinations, background hallucinations, synaesthesia, altered meaning of percepts, aided memory, and facilitated imagination*. (4) The AA scale measures auditory illusions and auditory (pseudo-)

hallucinations. (5) Finally, the RV component relates to states of drowsiness, reduced alertness, and diminished cognitive function (Studerus, Kometer, Hasler, & Vollenweider, 2010).

The Studerus, Kometer, Hasler, and Vollenweider research showed the OB, AED, and VR factors to be reliable and valid for a useful range of various altered states; however, the AA and RV dimensions seemed to occur only in specific settings. For this reason, a global score is summed for the OB, AED, and VR dimensions (making this score equivalent to the preceding OAV). The administration time needed for assessing peak effects varied from 60 to 270 min after intake of psilocybin. Subjects were consistently instructed to evaluate their entire experience from the time they were given the substance up to the end of their particular test.

Side effects proved minimal, as assessed by the use of the von Zerssen List of Complaints, which is a self-rating scale. This is a survey of 65 typical complaints of discomfort in body or mind, and produced a useful global score for subjects in six separate studies, when administered 24 hours after the initial dosage.

MacLean, Johnson, and Griffiths used the original ASZ version of the OAV/5D-ASC instrument, and were therefore limited to the first three dimensions, but their methodology would apply to the later versions as well. They combined data from two double-blind studies using psilocybin, although the two were different in that the first study utilized single doses whereas the second used multiple doses. These studies sought data on personality changes in psilocybin users, grouped on types of mystical experiences they reported in Griffiths' States-of-Consciousness Questionnaire (SOCQ). Hypothesizing that psilocybin-induced mystical experiences would lead to increases in the Openness dimension, the researchers used a MANOVA methodology to analyze changes among Openness, Neuroticism, Extroversion,

Conscientiousness, and Agreeableness. They then used regression analysis to determine that the predictive power of the SOCQ exceeded that of the four scales (mysticism and the three ASZ dimensions).

Standardization and Validity

An OAV/5D-ASC validation study demonstrated that the instrument successfully covered several psychometric properties such as discriminations of particular items and reliabilities of simple structure and scale values. Between those two versions tested, there were high correlations among the OB scale, the VR scale, and the DED/AED scales; this result indicated that similar constructs were being measured between the original APZ and the resulting OAV/5D-ASC, using linear equations for comparability (Studerus, Gamma, & Vollenweider).

For statistical analysis, eight tests were designed with within-subject formats. Significant differences, among the tests, in setting, procedure, and test management, were accounted for by using a hierarchical structure: subjects were aggregated within the studies, and repeated measurements were nested within given subjects, with mixed-effect representations used for differences in dosage for each subject and for attrition of subjects over the course of the research (Studerus, Kometer, Hasler, & Vollenweider).

Reliability

The three forms of the APZ/OAV/5D-ASC have been reliably proven for distinguishing the subjective effects of various induction methods and responses to drug dosages, and also to map the responses to psychobiological instruments and neurological instruments including fMRI, PET scans, and EEGs (Boly et al., 2008; Studerus, Gamma, & Vollenweider).

Studerus, Kometer, Hasler, and Vollenweider used Akaike's Information Criterion values to determine suitable correlations of random results, with a weighting procedure to correct for different variances between groups. The researchers plotted graphs of residuals against projected data and random effects, and used one-tailed Dunnett contrasts for analyzing statistically significant treatment effects.

Uses of the Test

An obvious benefit of the 5D-ASC instrument was that it highlighted the specific psychological rewards that subjects were seeking in their overall drug use and, as a consequence, they significantly curtailed their use of addictive drugs such as alcohol, nicotine, and cannabis following the experiment (Studerus, Kometer, Hasler, & Vollenweider). The test also clarified the effects that given dosages of hallucinogen had on subjects, and showed that risk of harmful psychological effects (i.e., flashbacks or prolonged disorientation) was minimal; 8% of the subjects reported some disturbance following the psilocybin experiment, and the only subject who needed further treatment had omitted his propensity for distress during the pre-screening).

One paper researching beneficial cardiovascular effects of MDMA (Vollenweider, Gamma, Liechti, & Huber, 1998) used the earlier version of the 5D-ASC test (APZ/OAV), along with Janke and Debus' Adjective Mood Rating Scale (EWL), as a measure of emotions, thought disorders, and self-in-environment, in ASC, which proved reliable whether or not the state was induced by drugs. Although the use of the earlier revision limited scores to the three subscales: OB ('OSE' in that report), VR ('VUS'), and AED ('AIA'), with 66 questions, their results would still apply as if the first three subscales of the 5D-ASC test had been used, since that later revision became available only after the date of the research cited. The authors point out that, in

subsequent studies by the author of the instrument, Dittrich (in 1985 and 1994), the 5D-ASC methodology proved independent of induction method and other etiological factors.

Another study (Griffiths, Richards, McCann, & Jesse, 2006) used the original version of the 5D-ASC (the APZ test), having 72 questions instead of the latter's 66 but, again, giving equivalent results for the first three subtests. That paper's hypothesis was whether psilocybin induction could engender mystical experiences in volunteers whose background included spiritual and meditational disciplines, but not psychedelic substances. The substantiated expectation was that the ability of the psychoactive compound to foster mystical experiences would permit rigorous research into the causes and consequences of such experiences.

A Critique of the Test

Throughout the research evaluated in this current paper, the issues of reliability and consistency lay not with the OAV/5D-ASC test instrument, but mostly with the disparate methodologies, subject groups, and settings used (MacLean, Johnson, & Griffiths; Studerus, Kometer, Hasler, and Vollenweider). From one study to the next, settings were different, number of doses varied, and subjects were grouped in numerous different ways: some by what kinds of experiences they had had previously, others by whether or not they had any experience with psychedelics. The researchers I report on here used various methods for accounting for these differences but, due to the paucity of normative data in this field, one should regard these 'balancing' strategies with suspicion.

Strengths and Weaknesses

Smaller-scale experiments sometimes showed significant levels of anxiety or other disturbances following their psychedelic treatment (Studerus, Kometer, Hasler, & Vollenweider).

This can be caused by differences in administration or in the particular sample population used, but such issues can be difficult to isolate. Another issue is that the study of psychedelic states of consciousness is, although not really new, a marginal field, mostly due to governmental restrictions (Kohler-Hausmann, 2010), and therefore having limited background data against which to establish norms.

For these reasons, the data from the 5D-ASC should be followed up and supplemented with interviews and other tests until research on the effects of psychedelics has become broadened and more standardized. This criticism is aimed more at methodologies used among researchers rather than at the OAV/5D-ASC family of test instruments, as these have been shown to be quite usable in the research which has been done thus far, and there are no replacements for them which are as standardized and thorough as these are.

Psychometric Issues

As stated above, at present time the pool against which to establish norms is still limited enough that “fudge factor” are used, as in the adjustments made in Studerus, Kometer, Hasler, and Vollenweider. In addition, the conditions under which the 5D-ASC is administered have not yet been standardized enough so that data can be reliably compared from one study to another. Furthermore, screening data shows that people who have had favorable psychedelic experiences are the ones most likely to participate in these studies, thereby perturbing the data from the very start due to bias in the subjects themselves.

Another issue that the researchers found was that, in measuring the percentage of subjects whose responses were very strong, the cut-off values had to be somewhat arbitrary because the

criteria have not been universally established. Similarly, their follow-up questionnaire had no known values for reliability and validity (Studerus, Kometer, Hasler, & Vollenweider).

Ethical and Legal Considerations

The welfare of subjects was engendered by prescreening, follow-up interviews, and observation done during the psychedelic sessions, done with the written consent of the participants. However, not all of the subjects were scrupulously truthful in their screening statements, giving rise to one case of ensuing psychological disturbance (Studerus, Kometer, Hasler, & Vollenweider). Furthermore, subjects who were not favorably biased toward the experience, mainly being those who had not yet had a psychedelic experience, could not have known what to expect, and therefore could not properly have given informed consent (AERA, 1999, 5.5, 8.2, 8.4).

In our course textbook, Gregory (2011, pp. 26-29) pointed out that virtually all of the test publishers, in addition to the various oversight panels of government and the APA, are very clear that test-givers should do no harm to their subjects, and that the test takers should be fully informed to give consent for the examination and its conditions. Because this is not truly possible in experimental conditions such as those for which the OAV/5D-ASC is applicable, extra care must be used in screening, administration, and follow-up.

Proposed Use of this Test

Dittrich's original hypothesis was that virtually any ASCs would prove to have mapable common features (Studerus, Gamma, & Vollenweider). This is what my own research proposals endeavor to expand upon and refine.

Purpose

Dittrich's tests, whose most recent version is the 5D-ASC instrument, have been shown to be reliable and valid, as far as that goes. Using this and other tests of non-ordinary states, I expect to show that there is some mapable order to transcendental states of consciousness, and even to psychopathological states like schizophrenia, addictiveness, and autism. The resulting map should correlate specific features and qualities of given states, regardless of method of induction for achieving those states.

Benefits and Usefulness

Having such a map could not only fulfill Dittrich's hope for his test, but extend its usefulness to achieving specific state-features such as optimal learning, high productivity, and positive thoughts and attitudes in normal people, as well as being able to shift a schizophrenic patient into a rational state, or enabling an autistic person to communicate and compete (Peterson, Garnett, Kelly, & Attwood, 2009).

The literature on psychedelic usage and measurement indicates promising research into the treatment of addictions, PTSD, depression, and even physical disorders like cardiopathologies. I expect that my resulting map can make similar benefits available without requiring administration of drugs; this would happen because the focus would be on where, in a subject's psychic makeup, the desired features are located, irrespective of how such states have been induced in the past.

Challenges

The 5D-ASC and other tests of ASC have too much focus on superficial or external features such as blissfulness, anxiety, impairment of cognition and control, hypnagogia, and

disembodiment. If I cannot use existing test instruments which supplement for the additional detail my research will require, I may have to design a supplementary test with sufficient depth and acknowledgement of the psychic structures involved. Candidate tests are enumerated in the Usage of Results section, below.

The greatest challenge in administering the test is to account for the high non-uniformity of test settings. This is because the sample population is generally made up of volunteers from transformational workshops, spiritual retreats, vision quests, the Internet, and college classes. In some studies, clinic populations have been used. Usage of psychedelics among subjects ranges from never, to daily, and even multiple doses in a single session. A wide variety of non-drug inductions must also be taken into account.

Several of the studies cited in this paper provide numerous standardized methodologies for correcting for all of these differences, so I expect to make use of both the qualitative and quantitative approaches they report on (Boly et al.; Griffiths, Richards, McCann, & Jesse; Studerus, Gamma, & Vollenweider; Studerus, Kometer, Hasler, & Vollenweider; Vollenweider, Gamma, Liechti, & Huber).

Usage of the Results

Aside from the psychological and medical benefits outlined above, my personal vision is to develop a quantifiable, repeatable, structured method for achieving Higher States of Consciousness (HSC), including mystical, shamanic, and sorceric states, based on the consciousness map I would derive from studies using the 5D-ASC instrument along with supplementary tests like the short version of the Adjective Word List (*EWL-60-S*: 60 mental-state adjectives in 15 subscales) (Studerus, Gamma, & Vollenweider), plus the Addiction

Research Center Inventory (ARCI) of the effect of hallucinogens (49 T/F items in five subscales); and a States of Consciousness questionnaire having 100 questions, forty-three of which make up Pahnke-Richards' Mystical Experiences questionnaire using a six-point answering scale (Griffiths, Richards, McCann, & Jesse).

Conclusions

The 5D-ASC revision of the APZ-OAV test is probably the most well-standardized and normed of the still-limited inventory of measures for altered states of consciousness, mystical experiences, and self-healing modalities. As thorough as it is for most purposes, it does not go into enough depth and detail for some applications, so it is recommended to supplement its results with any of several other, sufficiently normed scales which are available. Additionally, methodologies used in the test's administration should account for a wide variety of dissimilarities in background of subjects, context of settings, dosage or induction method, and number and duration of dosages and sessions.

With the continuing rejuvenation of this field of study, I believe we can expect to see improvements in assessment and treatment of many psychological disorders as well as medical disorders which are caused or exacerbated by one's psychological state. In addition, resulting tools and methods are expected to enhance people's general well-being by giving them greater understanding of, and control over, their subconscious processes.

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