Composer / researcher:

Dimitri Voudouris

Composed:

[2018 - 2019]

Composition:

Onirophoreas

(Episodes: 1.1 – 1.6)

Artificial speech, singing synthesis with environments,
Natural speech with environments, bells, African hand-drum,
shakers, rain-stick, computer assisted processing

Concert Performance:

6.1 audio active speaker monitors

(to be performed at high volume and total darkness)

Duration:

22 min 03 sec


JQ(74)
(11) session July 1995
ZX 9r

Procedures in the diagnosis of JQ-74:

TARA *(Psychiatric Hospital*) renders specialised services to patients with serious mental illness. In the 1990's I was part of a group of medical professionals who's task was to assess that the correct methods of diagnosis were conducted and that the correct drugs, dosages were administered to the patients.

Patient (*I will refer to by file number)* **JQ-74** born in 1929, a compiled case study of hand written and audio recordings of the patients condition existed (*ascertaining the diagnosis, progress in therapy and drug administration*) made in September 1993. A prolonged history of drug addiction, migraine headaches leading to sleep disorders was initially diagnosed with sleep paralysis in association with narcolepsy, cataplexy and hypnologic hallucinations *(the pathophysiology of this condition is closely related to the normal hypotonia that occurs during REM sleep)*, the subject was admitted to the facility in the earlier part of 1993. Sleep paralysis is a condition in which someone lying in the supine position, drops off to sleep or just upon waking realize that they are unable to speak or walk loosing a few seconds or moments or longer, revealing tendencies to mistakenly perceive connections and meaning between unrelated things a condition known as a *pophenia* this is common in the beginning stages of schizophrenia and drug addiction problems. Further diagnoses showed schizophrenic symptoms (hallucinations, paranoid delusions, racing thoughts, apathy, lack of emotion, poor social functioning were present).

Physiology of schizophrenia:

Schizophrenia is a complex multilayered disorder associated with both genetic and environmental risk factors. Patients with schizophrenia have abnormal dopaminergic functioning, which can affect the efficacy of antipsychotic drugs. Areas of physiologic abnormality that appear to contribute to dopamine abnormality include the glutamate system , the serotonin system, and the acetylcholine system . Some of these systems may also play a role in the impairment of cognitive functioning, which adds to impaired functioning, and may contribute to negative symptoms, which are major contributors to poor functioning and decreased quality of life in patients with schizophrenia.

Application of strategic pathological elements in the creation of Onirophoreas:

Pareidolia / Apophenia are pathological conditions in chronic schizophrenia. The elements related to these conditions were carefully applied in the creation of certain environments. Onirophoreas shows ephialtic infestation in the audio hallucinations of **JQ-74**, mental and verbal transitions into male, female, childlike states as these voices form numerous permutations affecting pre-linguistic utterances and verbal expression, moments namely of: frustration, anger, joy, laughter, amazement, confusion, questioning, whispers, singing, chanting, tangential speech or even alogia on different levels (*all words can be classified on their orthographic and phonetic similarity with meaningful words and can be pronounced according to a language's phonotactics*). Words flicker in and out of existence, sometimes a word's meaning is dissolved; at other times, unexpected combinations cause new words to spring into being. Permutations alter the comprehensibility of the text, a continuum of sense, nonsense occurs. In psychotherapy the subject is the narrator that takes up complete form, part or remains objective in these type of hallucinatory observations and conversations (through non fictional or fictional language/s). This condition is experienced by the host in stages (this can be seen from signs of language change, changes in comprehensibility).

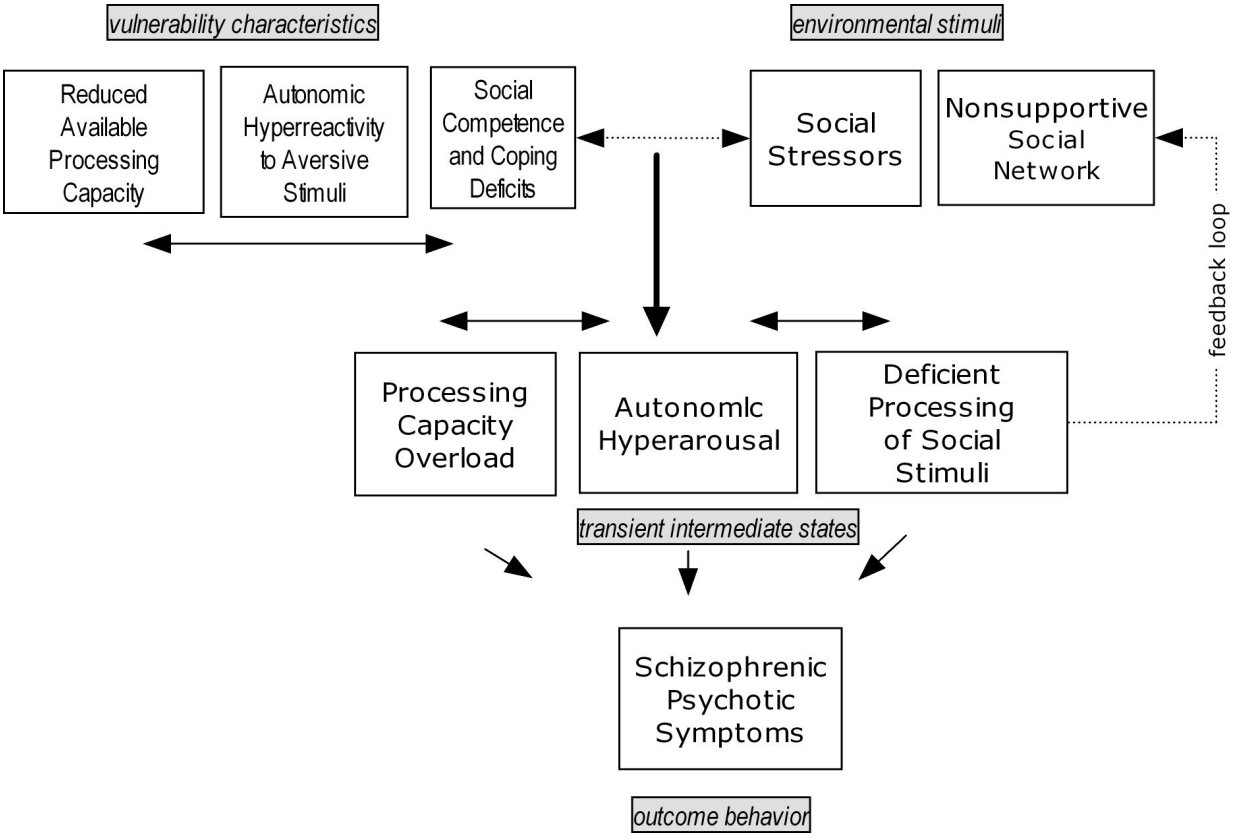

fig 1: Model designed at UCLA which is based on a tentative, interactive heuristic vulnerability/stress for the development of schizophrenic psychotic episodes. ***by Keith H. Nuechterlein and Michael E. Dawson***

Creation of voices were made through the use of Ivona (Speech to Go) and MBROLA a speech synthesis software, Praat - software package for the scientific analysis of speech in phonetics, Csound and Reaktor modular synthesis creating fictional languages used in spoken and lyrical (phonetic) form with an emphasis on accents, utterances. Appropriate environments were created to complement specific words and phrases. Natural voices through change of pitch and meaning are used as language fillers which could not be created by artificial language. Words or phrases formed are placed in a back drop of contrasting environments.

Composition model:

Onirophoreas - *Greek* - *"όνειρο-φορέας"* meaning dream-bearer. The psychometric analysis from the audio recordings provided the foundation of establishing a composition model which aims to disclose the active cycle of 36 schizophrenic episodes provided between the (*8th* - *16th*) recorded sessions, from the onset of schizophrenia to the total loss of identity. Precise occurrences were included in Onirophoreas as was revealed and experienced through narration.

1. Schizophrenic episodes

- Capture momentary events from (audio hallucinations) such as pre-linguistic utterances, unique verbal expressions and gestures.
- Deal with different versions of the same story.

2. Similarities and differences

The work focuses on the patient's inability to hold their train of thought, resulting in crossover thought patterns. Onirophoreas is split into 6 phases (1.1 – 1.6). To each phase we assign six unique episodes producing various acoustic possibilities and outcomes in differences and similarities e.g. we do not need any disorder now or disorder, do we need now? or now, we do need disorder or we need disorder now etc. The example shows similarities within the subject design but variations in group content.

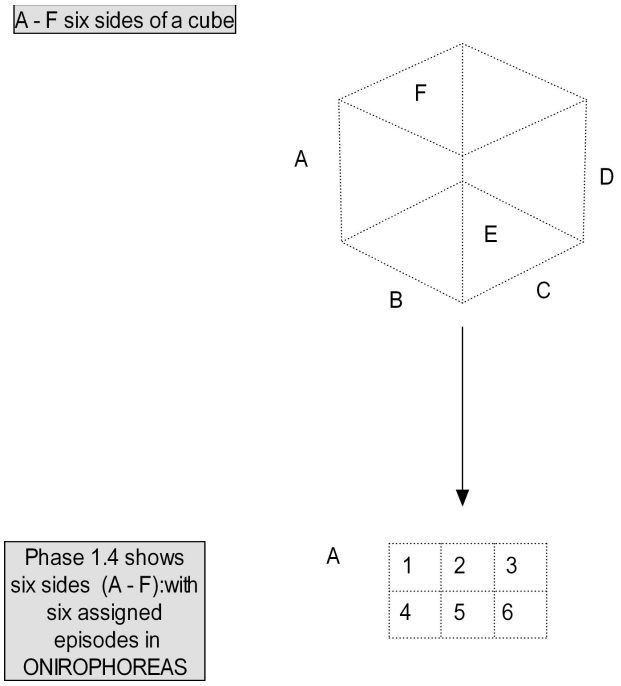

fig 2

Similar pattern variations of the content is revealed in the audio recordings. ***Fig2;*** phase 1.4 exposes 6 sides *(A-F)* of a audio cube, each of the 6 sides have similar thought patterns (of schizophrenic episodes) as experienced by the patient. Equal representation of the 6 episodes (6 to the power or 6 or (6x6) = 36) , 36 possibilities occur in each of 6 sides *(A-F)* of a cube and are demonstrated in linearity. The positioning of phase 1.4, episode 2 changes position in each cell block and is found in A1b, B1a, C3b, D3a,E2b,F2a of cube. The changing position of episode 2 offers unique variations, different encounters of the same episode to the listener *e.g. The judge hears different versions of the same story , which influence the final judgement.*

	A			B			C			D			E			F	
	a	**b**		**a**	**b**		**a**	**b**		**a**	**b**		**a**	**b**		**a**	**b**
1	1	2	**1**	2	3	**1**	3	4	**1**	4	5	**1**	5	6	**1**	6	1
2	3	4	**2**	4	5	**2**	5	6	**2**	6	1	**2**	1	2	**2**	2	3
3	5	6	**3**	6	1	**3**	1	2	**3**	2	3	**3**	3	4	**3**	4	5

fig 3 *– Phase 1.4 with (6 episodes)*

In ***fig 3*** to each of the 36 cells are assigned with an audio effect or a bundle six audio effects; multi band compressor, EQ, echo, level / loudness normaliser (dB), natural verb, voice attenuator, all with different adjustment levels per cell.

Phase	Episodes
1;1	6
1;2	6
1;3	6
1;4	6
1;5	6
1;6	6

fig 4 *-The 36 episodes assigned to different phases in the composition*

3. Mechanisms in implementing the model of vulnerability/stress of psychotic episodes and selection of orderly and random procedures

The reaction time of crossover patterns used referred to - selectivity, intensity, span, and duration of focusing stimuli, reflecting separate aspects of symptomatic and cognitive dysfunction in schizophrenic episodes. The guidance of the reaction time made it possible to have various orders of selection orderly and random from the psychometric analysis of the patient.

Selection of events that had quantitative, qualitative properties, duration, distraction factors including loose associations (a thought disorder in which a series of ideas are presented with loosely apparent or completely in-apparent logical connections). Attempting to return to the original thought pattern in the discussion would be problematic resulting in apathy and confusion.

Uninterrupted and interrupted duration determines the order of execution. Presence or absence of distractions determines the final quantitative and qualitative structure of the sound created . The selection of audio files in the absence of distraction is orderly, random selection of audio files occurs (if there is lack of cognition in the presence of distractions) resulting in scattered complex thought patterns through random processing. The random selection of audio files was aided by the computer using *simple random sampling procedure.*

Model for development of schizophrenic psychotic episodes	Composition module
Reduced available processing capacity, autonomic hyper reactivity to aversive stimuli, social competence and coping deficits – collectively these vulnerability characteristics depend on the patient personal susceptibility, failing resistance, length of exposure produce a conducive state were alogia , avolition, moments of aphasia and tangential speech could be a reality.	*Artificial, natural speech are important tools in describing the episodes or phases in question by creating detailed moments of anxiety, anger, frustration, alogia (the meaning of words dissolved; at other times, unexpected combinations cause new words to spring into being).*
Social stress, non supportive social network are environmental indicators the importance these contrasting environments relate and emerge from the behaviour of the individual these are personally afflicted or can emerge as suggested from other sources	*The ever changing environmental conditions have strong influences on the mental condition of the patient. The sudden or gradual change that environments (loudness, change in content, contrasts, density, duration) reflect different levels of pressure imposed on the individual which determines the resistance to cope.*
In the intermediate stages the processing capacity overload, autonomic hyper arousal and deficient processing of social stimuli indicate that communication occurs between patient and the hallucination/s. The patient's identity is exposed to different levels of schizophrenia and is partially or completely compromised this is considered as outcome behaviour.	*The complexities of loss, partial or complete identity is measured through inability to communicate, failing resistance, environmental factors, drug resistance, treatment failure, disability factors. Schizophrenia is a condition which mimics the motion of protozoa.*

Fig 5 *: Model of schizophrenic episodes versus composition model*

4. Separation and pattern matching

Listening to the audio narration I noticed that separation on environments from the original source, cross matching them with other voice/s or environments played a key role in the patients inability to select, discuss topics, resulting in grammatical deficits with a relative sparing of lexical memory which impair processing . Selecting and matching the appropriate voice with the environment and tagging emotions to those patterns seemed problematic *(We don't talk when the right hemisphere is dominant during dreaming in REM sleep, although talking whilst in slow-wave sleep is common. During a psychotic episode, if the person were in the REM state awake, there would still be some logical activity and thinking taking place in the left hemisphere. REM state is not anticipating any input from the left hemisphere, it has to interpret those thoughts metaphorically and comes up with the image of alien voices, which can seem to be commenting on the person's every move, or haranguing them or giving 'instructions'.)*

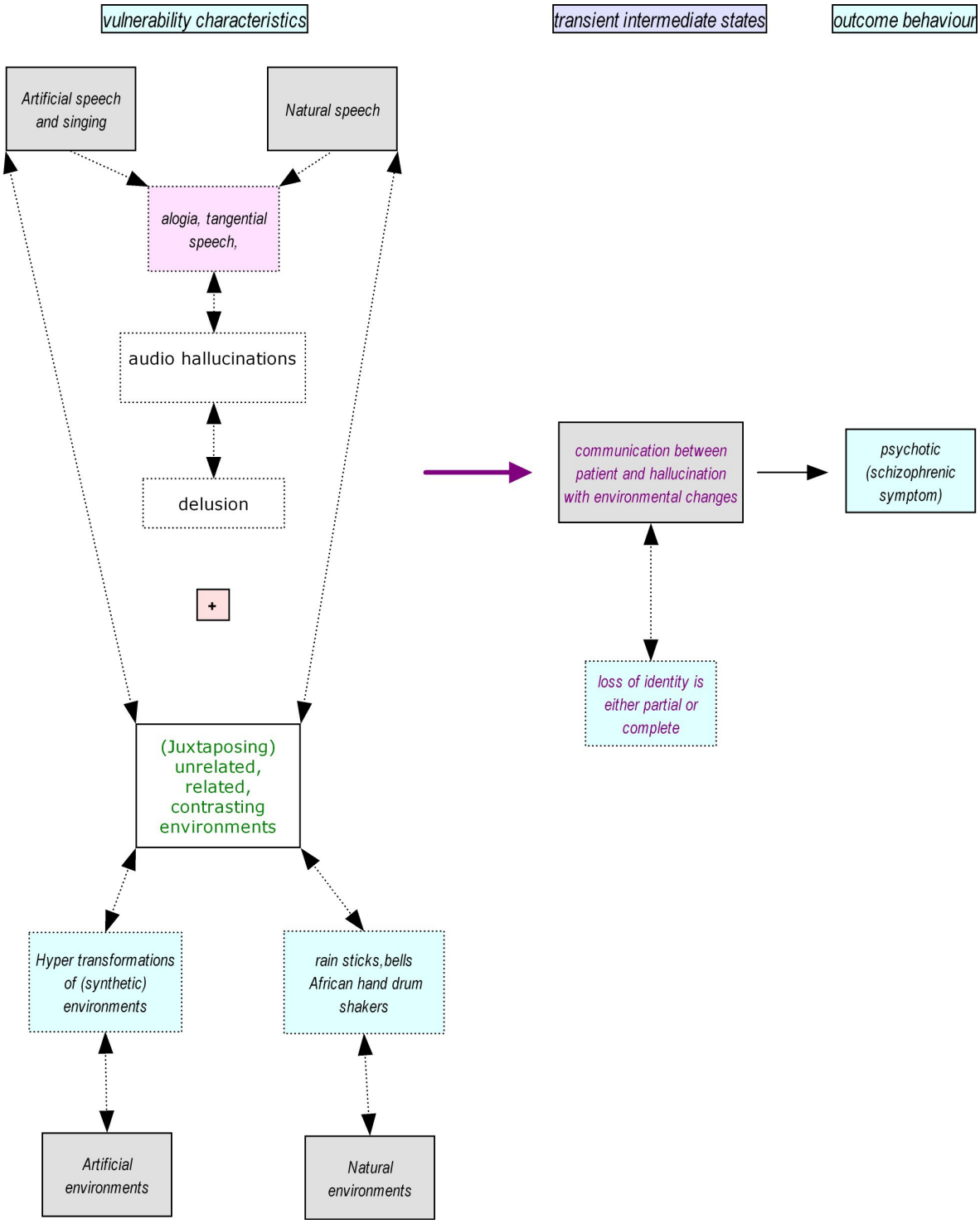

fig 6: *Implementing the model of* vulnerability/stress for the development *psychotic episodes in the construction of ONIROPHREAS*

Simple random sampling:

Simple random sampling, offers a fair and equal chance (through probability) in selection of each audio samples.

1. Creating a simple random sample

To create a simple random sample, there are six steps: a) define the population of audio samples; b) choose the sample size; c) list the audio sample population; d) assign numbers to the units; e) find random numbers; f) select your sample.

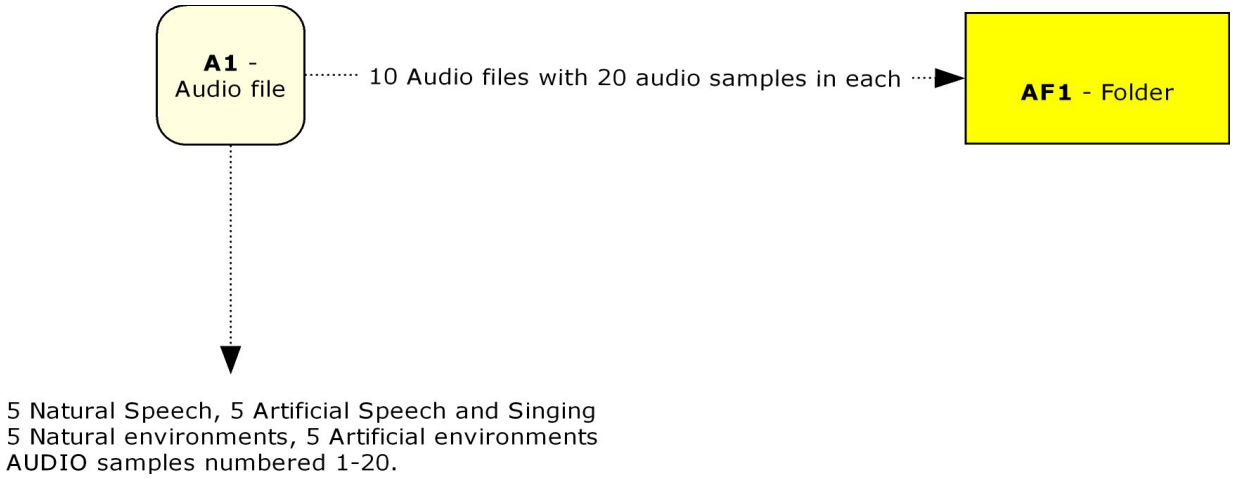

fig 7: *Arrangement of audio samples*

Audio files (A1 - A10) each contain 20 unique audio samples of equal duration per file. Folder (AF1) has 10 audio files with 20 audio samples representing 200 audio samples in total which are asigned to a particular time interval e.g. (6min350sec to 7min042sec). The total number of audio samples and audio files might vary in quantity at other time intervals in Onirophoreas.

Arificial Voice	Natural Voice	Arificial Environment	Natural Environment
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20

fig 8: *Column description and numeric arrangement of 20 audio samples (of audio file A1)*

Random Integer Generator

This form allows you to generate random integers. The randomness comes from atmospheric noise, which for many purposes is better than the pseudo-random number algorithms typically used in computer programs.

Part 1: The Integers

Generate 100 random integers (maximum 10,000).

Each integer should have a value between 1 and 100 (both inclusive; limits ±1,000,000,000).

Format in 5 column(s).

Part 2: Go!

Be patient! It may take a little while to generate your numbers...

Get Numbers | Reset Form | Switch to Advanced Mode

Need more numbers than this form supports? Check out our File Generation Service.

Note: The numbers generated with this form will be picked independently of each other (like rolls of a die) and may therefore contain duplicates. There is also the Sequence Generator, which generates randomized sequences (like raffle tickets drawn from a hat) and where each number can only occur once.

fig 9: *Random Integer Generator*
(https://www.random.org/integers/)

Concert Performance

The acoustical and structural components of the composition trigger visual stimuli in the brain (without the help of the visual media) in which information in short-term memory becomes conscious only if it is consistent with predictions about reality. Reality functions as a standard, developed from information in long-term memory about similar events and experiences. An individual's limited mental capacities may cause him or her to acknowledge only the more easily processed affective components of music, though the structural aspects also have an impact. - (ART) Adaptive Resonance Theory proposed ***by Stephen Grossberg and Gail Carpenter (1995)***

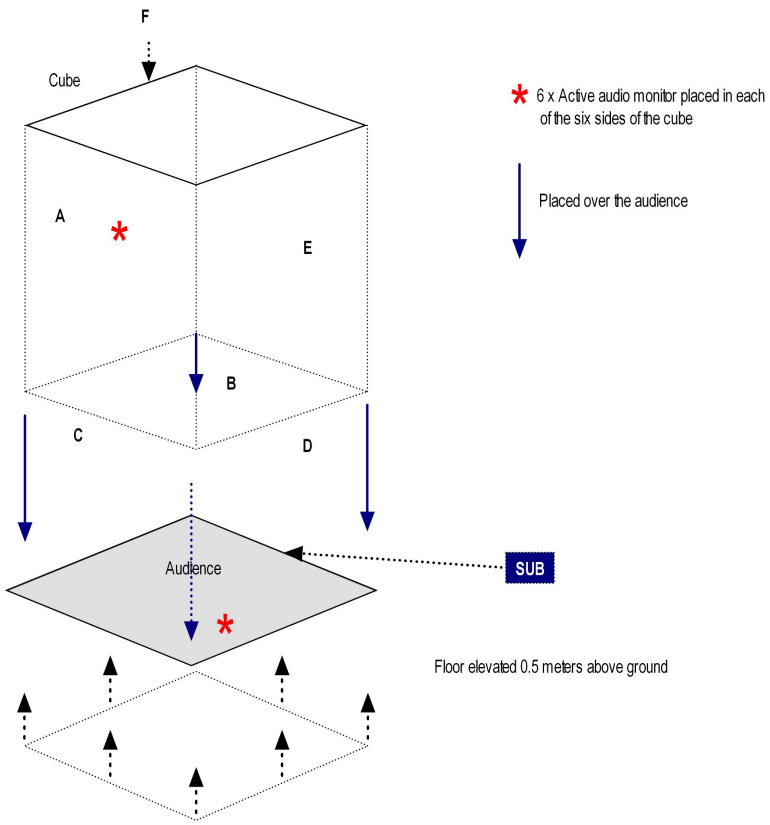

fig 10: *the acoustic cube*

The acoustic cube was designed with reference to Onirophoreas for the audience to experience the six phases of the hallucinogenic encounter dispersed over 6 speakers.

Equipment:

1. 6 x audio active speaker monitors – placed in positions A-F of audio cube.
2. 1 x subwoofer
3. 1 x mixer and Sound Projectionist

or

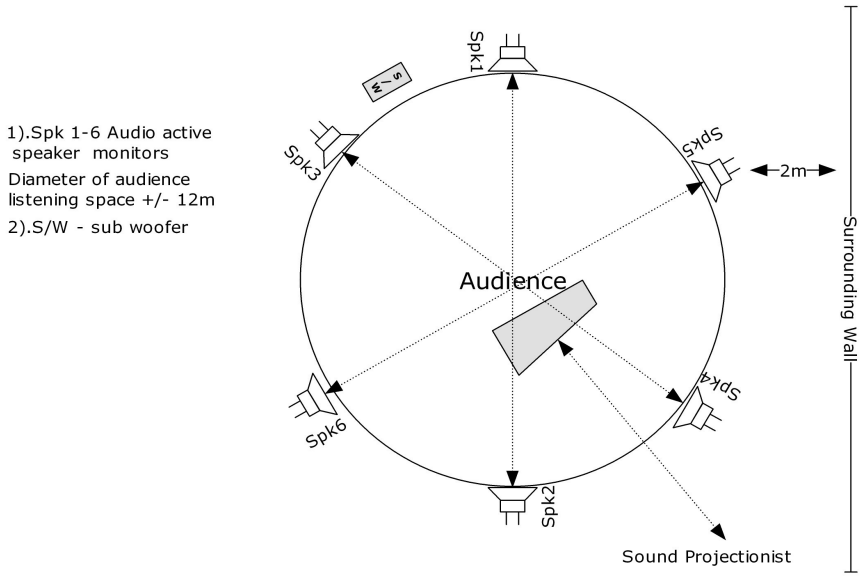

fig 10 **- ONIROPHOREAS** - *Concert Performance*

Equipment:

- 6 x audio active speaker monitors – placed in a circular path surrounding audience
- 1 x subwoofer
- 1 x mixer
- Sound Projectionist

Performance:

To be conducted in total darkness. Minimal light for the sound projectionist (with a cloth placed over the mixer and working space to dim the radience of light)

References:

1] McLean, K. C., & Fournier, M. A. (2007). The content and processes of autobiographical reasoning in narrative identity. Journal of Research in Personality, 40, 1219–1231.
2] A Heuristic Vulnerability/Stress Model of Schizophrenic Episodes - by Keith H. Nuechterlein and Michael E. Dawson, VOL. 10, NO. 2,1984.
3] Reaction time and attention in schizophrenia: a critical evaluation of the data and theories -Keith H. Nuechterlein, VOL. 3, No. 3, 1977.
4] Attentional performance in schizophrenic patients: An Eye tracking study - M.Sc. Géraldine Jean-Charles,Prof Dr. Chantal MartinSoelch - Cognition Day 2015.
5] Addis, D. R., & Tipett, L. J. (2008). The contributions of autobiographical memory to the content and continuity of identity. A social-cognitive neuroscience approach. In F. Sani (Ed.), Self-continuity: Individual and collective perspectives (pp. 71–84). New York: Psychology Press.
6] Danion, J. M., Cuervo, C., Piolino, P., Huron, C., Riutort, M., Peretti, C. S., et al (2005). Conscious recollection in autobiographical memory: An investigation in schizophrenia. Consciousness and Cognition, 14, 535–547.
7] Lysaker, P. H., France, C. M., Hunter, N. L., & Davis, L. W. (2005). Personal narratives of illness in schizophrenia: Associations with neurocognition and symptoms. Psychiatry, 68, 140–151.
8] Understanding the Physiology of Schizophrenia [CME] - The Journal of Clinical Psychiatry · March 2013, Brian Kirkpatrick University of Nevada, Reno, https://www.researchgate.net/publication/236125986
9] Theory And Problems of Statistics – Murray R.Spiegel