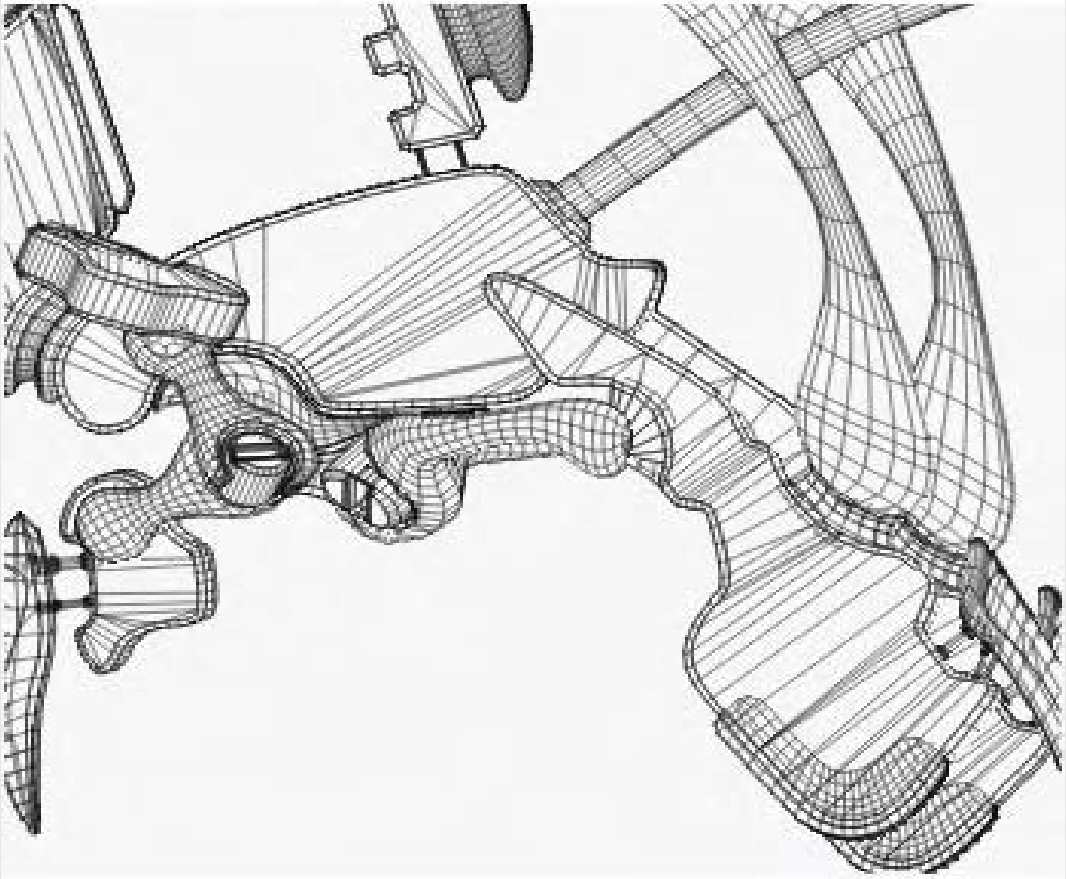
ΞΩΡΑΑΚ



Παρ
1 - 2

Composer/ Researcher:

Dimitri Voudouris

Annum:

2010

Composition:

ΞΩΡΑΑΚ

Παρ.1

Παρ.2

Duration:

31 min 26 sec

for

Concert Performance

Electronic Music for 6 channel diffusion

for

Musical and Physical Theatre Performance

Dancers, objects, audience,mobiles,
sound projectionists,
light technician,
electronic music for 6 channel diffusion

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Biological Membrane Transport

Introduction

Biological membranes are composed of lipid, protein and carbohydrate that exist in a fluid state. Biological membranes are the structures that define and control the composition of the space that they enclose. All membranes exist as dynamic structures whose composition changes throughout the life of a cell. In addition to the outer membrane that results in the formation of a typical cell (this membrane is often referred to as the plasma membrane), cells contain intracellular membranes that serve distinct functions in the formation of the various intracellular organelles, e.g. the nucleus and the mitochondria.

Transport through membrane

The fluid inside the cells of the body, called intracellular fluid,is very different from that outside the cells, called extracellular fluid. The extracellular fluid circulates in the spaces between the cells and also mixes freely with the fluid of the blood through the capillary walls. It is the extracellular fluid that supplies the cells with nutrients and other substances needed for cellular function, they must be transported through the cell membrane. The differences between intracellular and extracellular fluids are extremely important to the life of a cell. Substances are transported through the cell membrane by two major processes, diffusion and active transport. Diffusion means movement of substances in a random fashion caused by the normal kinetic motion of matter,whereas active transport means movement of substances as a result of chemical processes that impart energy to cause the movement.

Diffusion

. Ions diffuse in exactly the same manner as whole molecules, and even suspended colloid particles diffuse in a similar manner, except that because of their very large sizes they diffuse far less rapidly than molecular substances.

1] The greater the concentration difference,the greater is the rate of diffusion.
2] The less the molecular radius the greater is the rate of diffusion.
3] The shorter the distance the greater is the rate.
4] The greater the cross-section of the chamber in which diffusion is taking place, the greater is the rate of diffusion.
5] The greater the temperature the greater is the molecular motion and also the greater is the rate of diffusion.

Composition

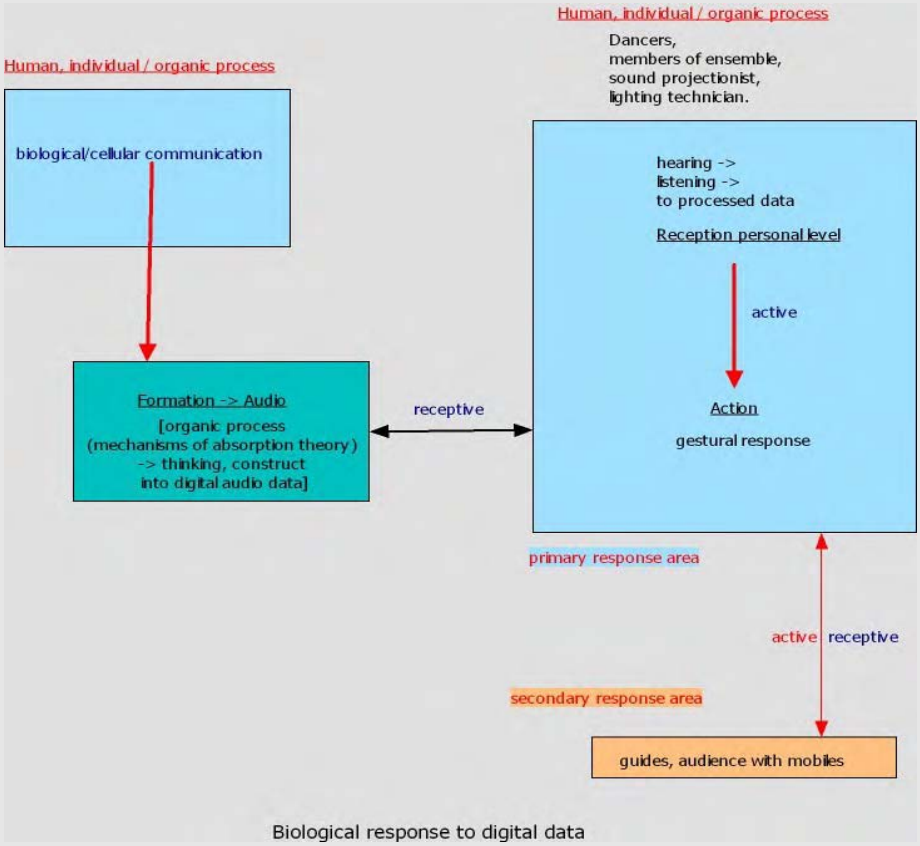
In the construction of **Παρ.1+2** ***[Parameters 1 + 2]*** the two sections were derived from language and singing synthesis, the way we as human beings recognise language and process it into logical meaning, similarly in other processes beyond our understanding there is communication through a specific coded language were the code gets translated and activated. E.g. the communication of particle A with an enzyme C1 → to produce particle B which through a chain of events results in the transport of particle B through a particular language code or pattern to cross the biological membrane [each particle communicates through similar sound patterns]. The composition was constructed using patterns obtained from biological models of membrane transition. The mechanisms of particle migration were applied to computer data. Six mechanisms were isolated studied and sound was assigned to each particular event.

Observations of the audio processed was made with tracing mobility and obstacle formations resulting in the process of migration [accumulation, clustering and active release] with the ability of the performing artists to respond to the information given. **ΞΩΡΑΑΚ** is designed for music theatre which in its execution is a purely autonomous processes, communicating biologically at a cellular and digital level. A communication process which allows for sound collisions to occur - collapse and fail to communicate, they automatically regain momentum, reunite and successfully re-emerge, only to be threatened by other more powerful forces of diffusion allowing various structures to pass through the communication barriers and others not. The dancers are a *receptive and active* communication link [primary area of response], were as the audience [with mobiles], music ensemble and performer – sound projectionist, light technician are in a *receptive and active* communication link [secondary area of response] [fig: 1].

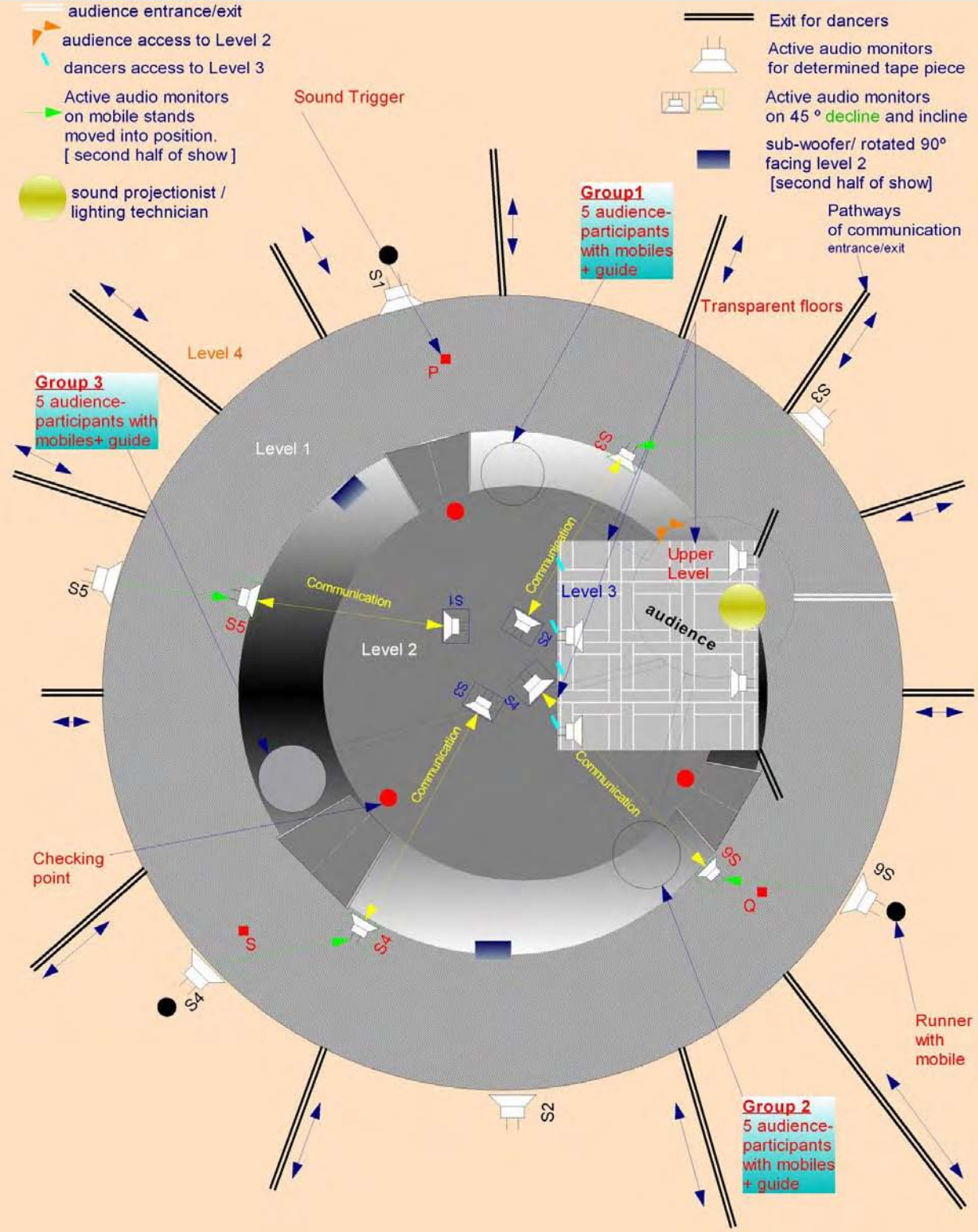
Response to the information released concentrated in the following three areas:

1] Formation = mechanisms of absorption theory → audio.
2] Reception = reaction to hearing and listening to processed data [sound] → reception personal level.
3] Action = taken by biological system/s in response to the data → physical response to information.

The processes realized in **ONTA** followed a comparison between the city and the human body were further extended in **ΞΩΡΑΑΚ** by capturing and following the inseparable patterns and pathways of communication between the two different environments. **ΞΩΡΑΑΚ** is multiple thinking pattern with respect to time.



[fig:1]



[fig:2]

ΞΩΡΑΑΚ

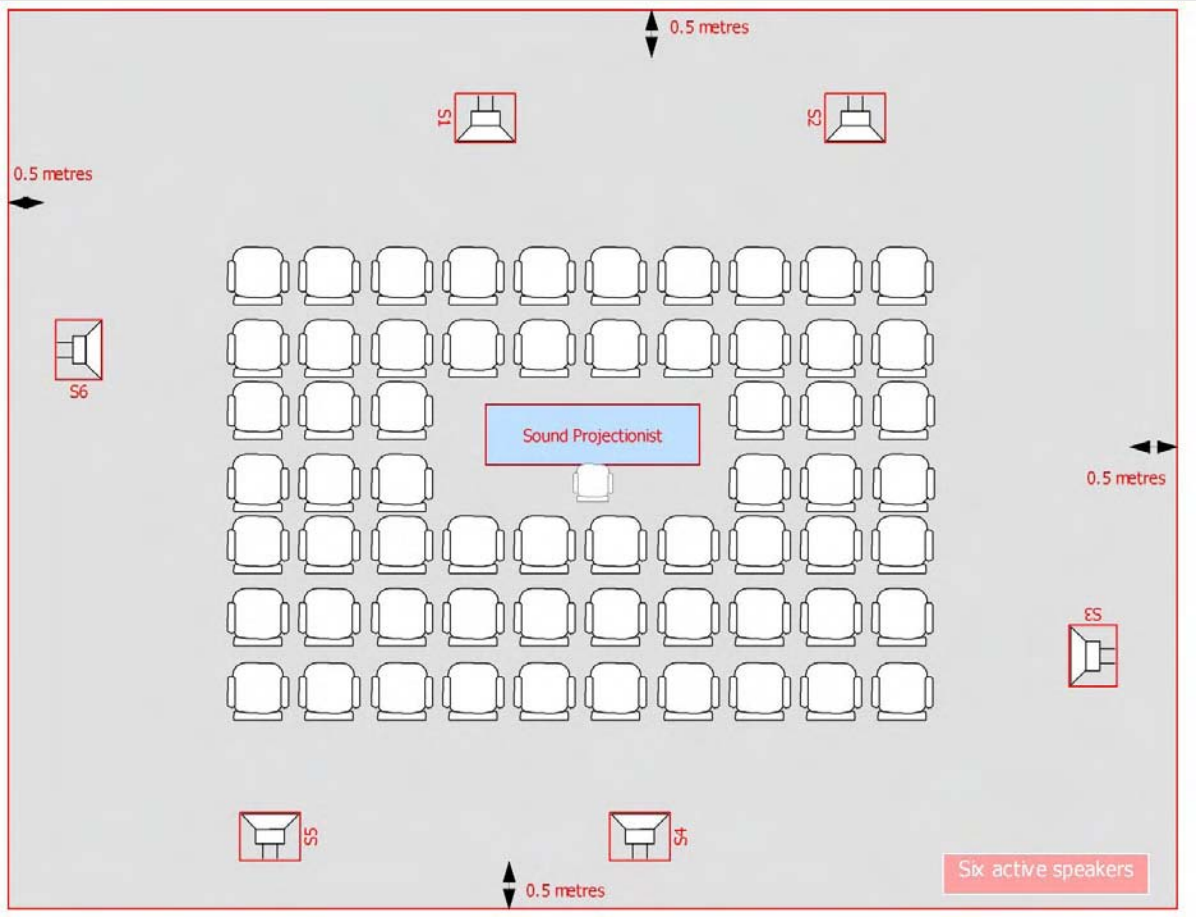
Stage level 1,2,3,4

Concert Performance

ΞΩΡΑΑΚ

Παρ.1, Παρ.2

fig:3



Six active sound monitors are deployed in the listening space.

Lighting technician

The lights are to be turned off during performance of this part of **ΞΩΡΑΑΚ: Παρ 1+2 .**

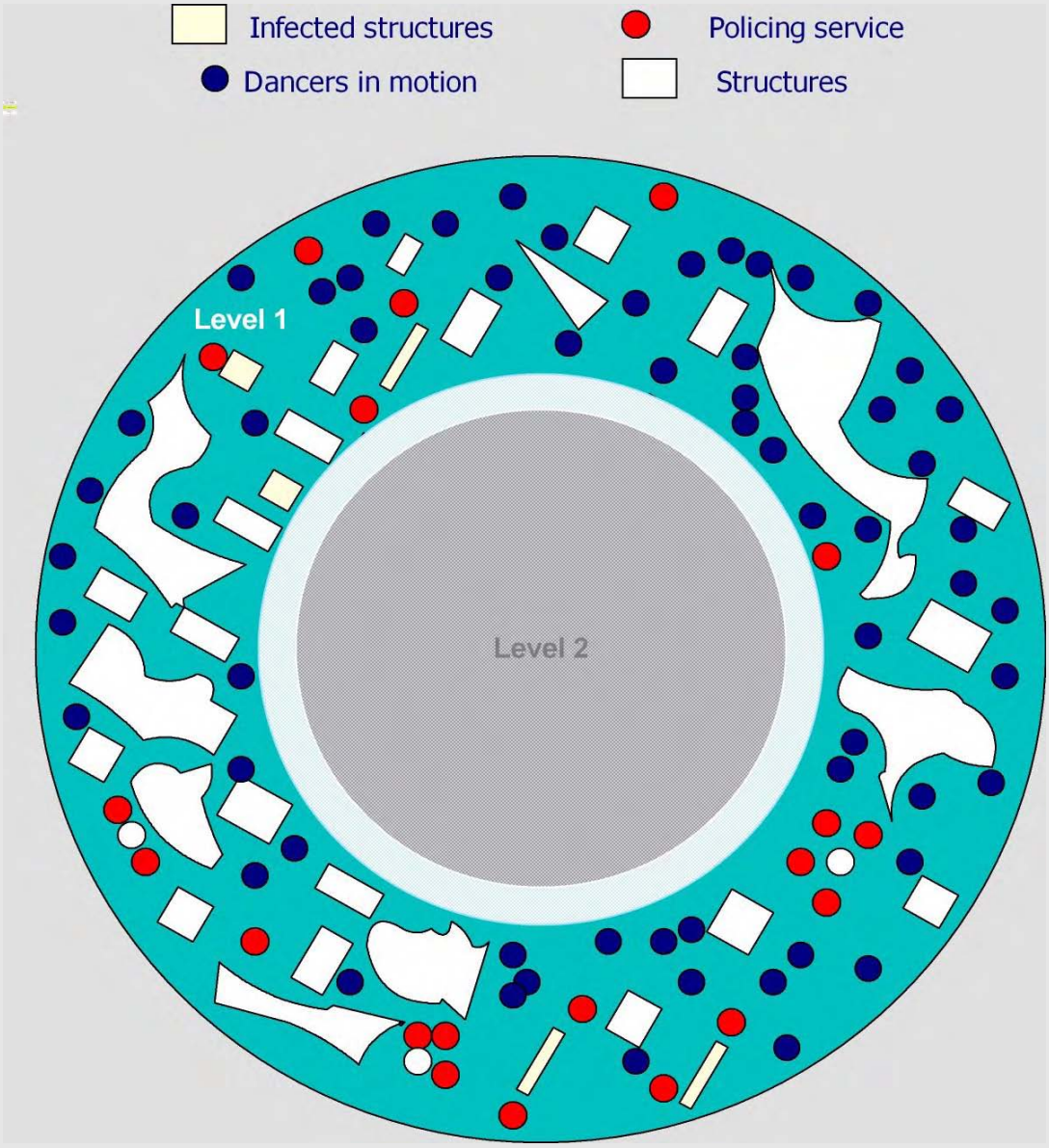
Sound projectionist

Check the acoustics of space and project sound accordingly

Sound Mixer

fig 4: **Behringer X2442USB mixer**

Theatrical Performance



[fig: 5]

Stage level 1

ΞΩΡΑΑΚ
lighting and position of dancers

Specific areas in the work need external assistance that is were the audience decisively engages in the contribution of various access codes necessary for dancers to advance to the next level. The six mechanisms of transition together with the audio work are to be studied and memorized by the dancers, sound projectionist, light technician. The ensemble members and the performer are exposed only to the audio work.

Guidelines for choreographer and stage manager *for* – stage level 1

Audience:

1] Audience must be guided along and explained instructions 30min to 60min before performance.
2] Audience will be divided into 3 groups of 5, with one guide in position.
3] The guide is to select and change members of the audience, as he feels fit.
4] Each group of audience to select one access code from twenty provided on mobile, the selection to be used must be submitted to the guide [A code can only be used once].
5] The guides will receive an sms from dancer that needs to access Level 2 via one of three gates. He will respond by sending an sms to the dancer confirming the code chosen either by a YES or NO.
6] The codes received via the sms system from dancers will be made available to the 3 groups of audience as in *fig: 10* via a mobile network system.
7] The answer YES or NO sent by the guide to the dancer will automatically be made available to the policing agents.
8] A member from each audience group to keep time on stop watch provided:

a] 10 sec allowance for **dancers** to access gate of stage level 2.
b] 10 sec allowance for **dancer** to access gate after obtaining a YES signal.
c] 30 sec to communicate with audience after receiving the mobile from runner.
d] Dancers in the vicinity of deactivated speaker- to rotate, engage in fast gesture movements *fig: 11* and utter words supplied by audience on reading boards-this happens when trigger is activated and sound of speaker stops, the speaker will stop play for 50 sec.
e] The triggering of a sub-harmonic sound from the music will allow 10 sec access, for more than one dancer to reach the gate of the next level. The Group of audience panels keeps time.

9] Disqualification will adhere, accompanied by a “Roar” from audience Panel if the requirements in 8] are not met.

Dancers:

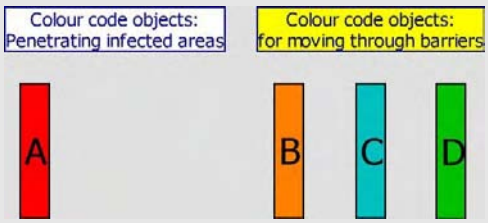
Dress code

Faceless, uni-coloured body suits.

Kinetic Behaviour

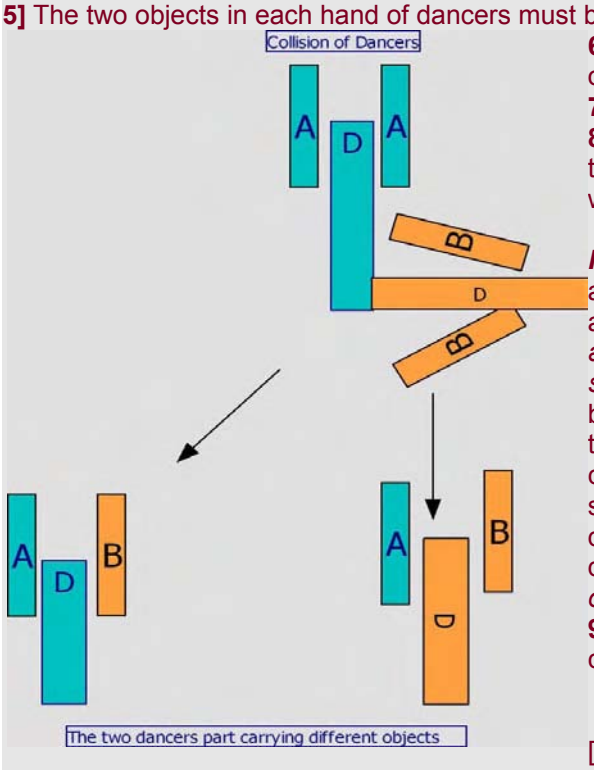
1] I*n the blue space - fig 5* - the motion, direction and speed of the dancers is determined by the nature of the collision: a moving dancer A, bounces against a stationary dancer B, the collision forces repel dancer B, momentarily adding some of the energy of motion to dancer B. Consequently, dancer B gains kinetic energy of motion while dancer A slows down, losing some of the kinetic energy. This continual movement through collision of the dancers is called diffusion.

Function of objects



[fig:6]

1] 20% of dancers carry one object.
2] Each dancer wanting to transcend into a structural space will need to gain two objects.
3] When dancers collide with one another, they exchange one object. [The decision rests upon the dancer to either take or leave object].
4] The object is handed over and received, in the exact similar way [*dancer B collecting an object from dancer A → who is carrying an object in the right hand in inside hand position → hands over object → collected by recipient in the right hand and is handled in the inside hand position*].
5] The two objects in each hand of dancers must be of the same colour before attempting a transition.

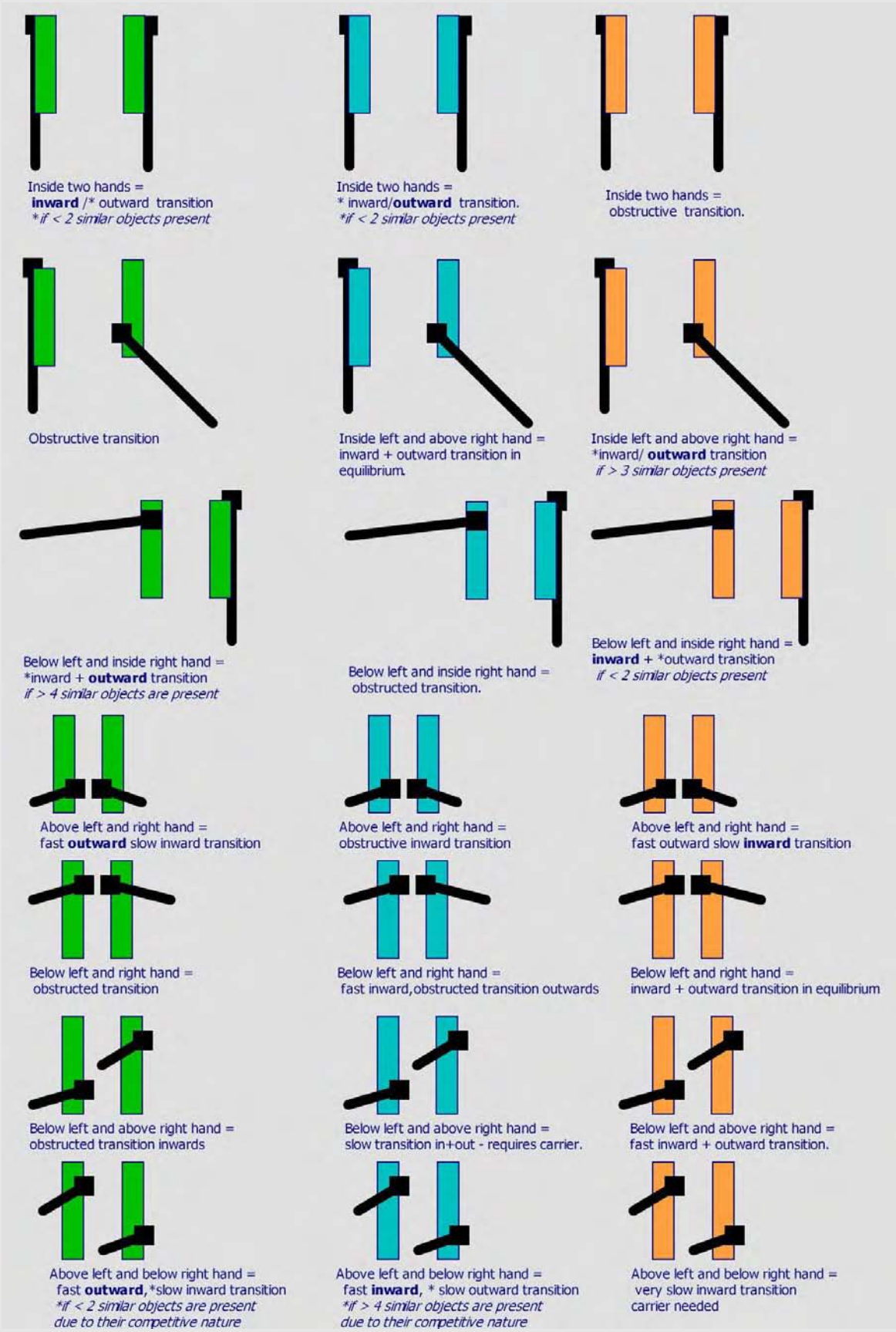


6] Objects possess a language code that can be accepted or rejected by the barrier the dancer is crossing.
7] The code acceptance could be changed *at lib* in barrier.
8] The barrier consists of 4 or more dancers holding hands together, who lose their objects to the policing service when involved in the barrier formation.

Rules of code alterations:
a] The acceptance code could be changed by accepting access to another set of colours [*this is to control influx and out-flux, and to stop destabilizing forces from entering space*].
b] This must be a unanimous decision taken by all dancers that are in barrier position of each structure.
c] Change of code could only happen if influx of dancers is such were the structure could not accommodate any more dancers or detection of destabilizing agents present.
d] The access code *in,* may differ from the access code *out,* of structure.
9] The holding position of objects by dancer never changes.

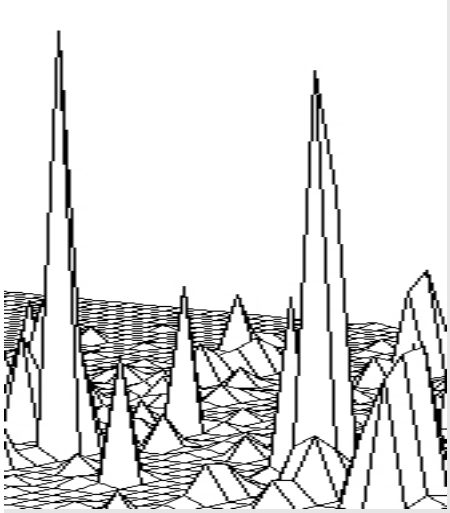
[fig:7]

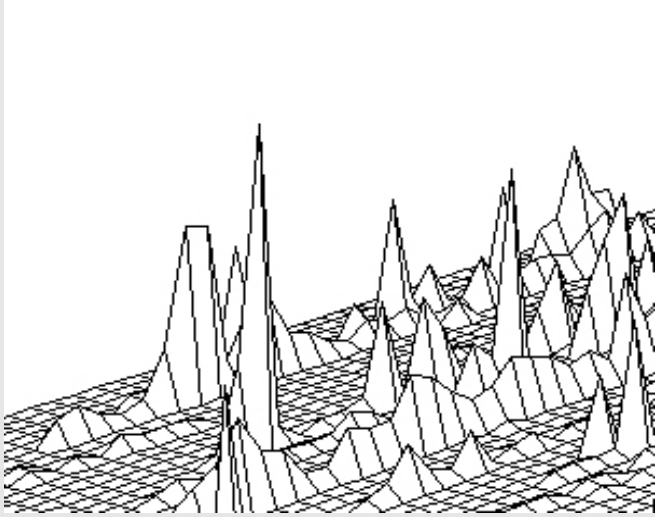
10] A different colour combination from other dancers can be obtained.
11] One *red object* holder is a dancer that belongs to the policing service of this particular community. The object is not handed over in collision.
Functions of policing service:
a] Restoring order within a community.
b] To remove dancer off the floor when he/she is disqualified.
c] To caution disputes, restore order in community.
d]To remove objects from dancers when forming a barrier around a structure.
e] Deactivating destabilizing agents.
12] The holding instructions of the objects are illustrated below *fig: 8*.
13] The dancers must be in continual active motion throughout the music duration of Level 1.
14] Dancers in obstruction within structure – cannot transcend outwards.
15] Objects are confiscated by the policing service from dancers whose code is obstructed and are not trying to possess different objects from other dancers.
16] When the dancers transcend outwards they may loose or drop their objects by colliding with the free flowing traffic motion.
17] The dancers would have to obtain two objects to exercise the same task again.


Inside two hands =
inward /* outward transition
*if < 2 similar objects present
Inside two hands =
* inward/**outward** transition.
*if < 2 similar objects present
Inside two hands =
obstructive transition.
Obstructive transition
Inside left and above right hand =
inward + outward transition in
equilibrium.
Inside left and above right hand =
*inward/ **outward** transition
if > 3 similar objects present
Below left and inside right hand =
*inward + **outward** transition
if > 4 similar objects are present
Below left and inside right hand =
obstructed transition.
Below left and inside right hand =
inward + *outward transition
if < 2 similar objects present
Above left and right hand =
fast **outward** slow inward transition
Above left and right hand =
obstructive inward transition
Above left and right hand =
fast outward slow **inward** transition
Below left and right hand =
obstructed transition
Below left and right hand =
fast inward, obstructed transition outwards
Below left and right hand =
inward + outward transition in equilibrium
Below left and above right hand =
obstructed transition inwards
Below left and above right hand =
slow transition in+out - requires carrier.
Below left and above right hand =
fast inward + outward transition.
Above left and below right hand =
fast **outward**, *slow inward transition
*if < 2 similar objects are present
due to their competitive nature
Above left and below right hand =
fast **inward**, * slow outward transition
*if > 4 similar objects are present
due to their competitive nature
Above left and below right hand =
very slow inward transition
carrier needed

[fig:8]

Structures and elevations





[fig:9]

1] Each structure is represented by white light illumination.
2] In the beginning two white light illuminations occur as a result of two structure formations.
3] Each structure *depending on its size* has a minimum of 4 dancers, *holding hands*.

4] ***Kinetic motion of structures:***

a] A structure moves by slow motion.
b] An inward indentation occurs if transition is taking place in structure.

5] As structure gets congested due to influx being greater than the out-flux of dancers the response is upward extension: This results in dancers climbing on top of each other forming various erective structural possibilities. *Fig:9,* it's at this critical state of events that transition *into* the structure maybe stopped or allowed to carry on by the barrier dancers.
6] Above each structure is a white sheet that is elevated as the structure grows taller.

Elevation and touching the white sheet:

a] The white sheet travels with each structure and is located above each structure.
b] The structure becomes unstable as it grows and gets taller with the dancers trying to reach and touch the white sheet above them.
c] The dancers are conditioned to touch the white sheet.
d] A dancer touching the white sheet would dislodge it, allowing it to collapse and cover the growing structure, resulting in the possible collapse of the structure.
e] If the structure collapses due to *covering of the white sheet* the structure is disqualified and the policing service escorts the dancers off the stage [level 1].
20] If collapsing structure is *not due to touching the white sheet* but is mainly due to the formation of an unstable structure the policing service will not act.
Collapsing:
a] On collapsing the dancers begin to form new breakaway structures.
b] On collapsing → if the dancers collapse into existing structure they are not allowed to breakaway only when they are outside the borders of the existing structure.
c] On collapsing outward a minimum of 4 dancers are needed to join hands together in the formation of a simple structure. [That is if no collision occurs, that could trigger the searching of objects *all over again* thus denying the formation of a new structure.]
d] A dancer coming from a collapsed structure *outwards* who collides with an external dancer is not allowed to access the same structure he/she originated from, it would be a different structure.
21] The climbing of the *white* sheet stops as the structure collapses, marking the next groups target area.

Agents of destabilization

1] Present within the functioning community are destabilizing forces [agents] which threaten the existing construction of structures, their aim is to destabilize the activity of completion.
2] They are dressed in similar uniforms to the rest of the dancers and go through a similar process in obtaining objects to access a structure.
3] The only way that can be detected is when they enter the illumination channels on the way to level 2.

4] ***Destabilization is caused in more than one way:***

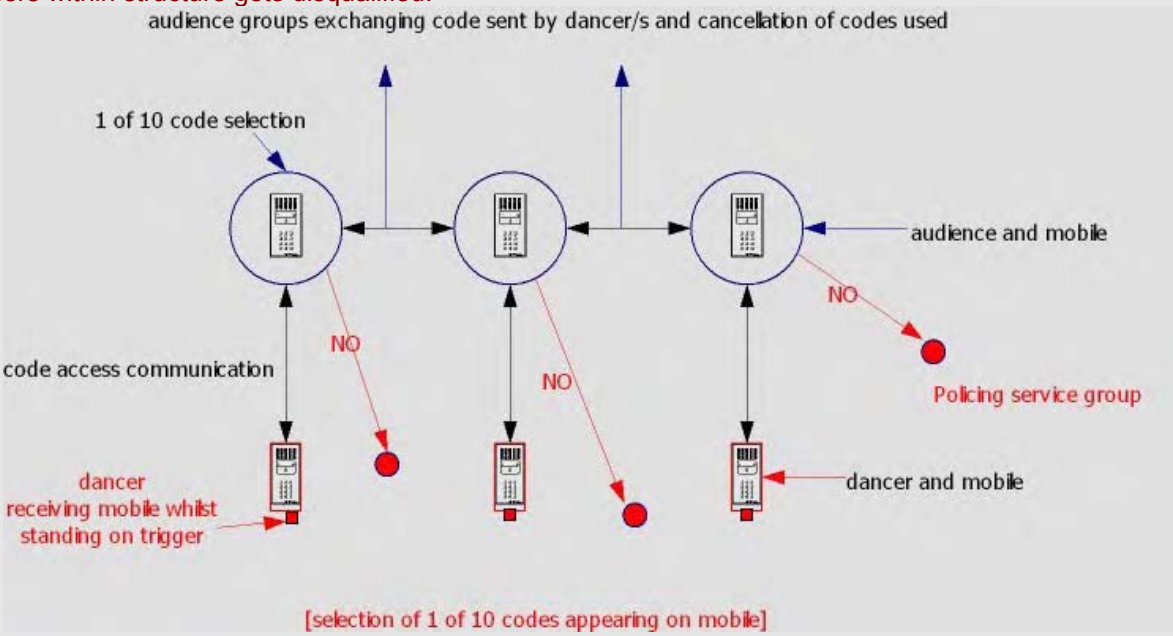
a] The agent stops in front of the structure and stares at the dancer *in the barrier that is guarding the access into the structure.*
b] The dancer in the barrier when making contact with the eyes of the agent freezes drops his/her hands next to his/her waste and then projects the hands directly in-front him/her, holding the head of the agent. This action exposes the structure and makes it more vulnerable.
c] The dancer in the barrier makes an about turn not letting its grip of the agent go → the agent is within the structure.
d] The structure attempts to empty from dancers when agent is on the outside.
e] When agent is in the structure everything freezes.

Carrier

1] A carrier is a dancer who is activated [*with a backward head nod*] from the dancers guiding the barrier and helps to aid the transition in and out the structure of certain dancers that are holding objects in a particular way.

Triggers and mobiles

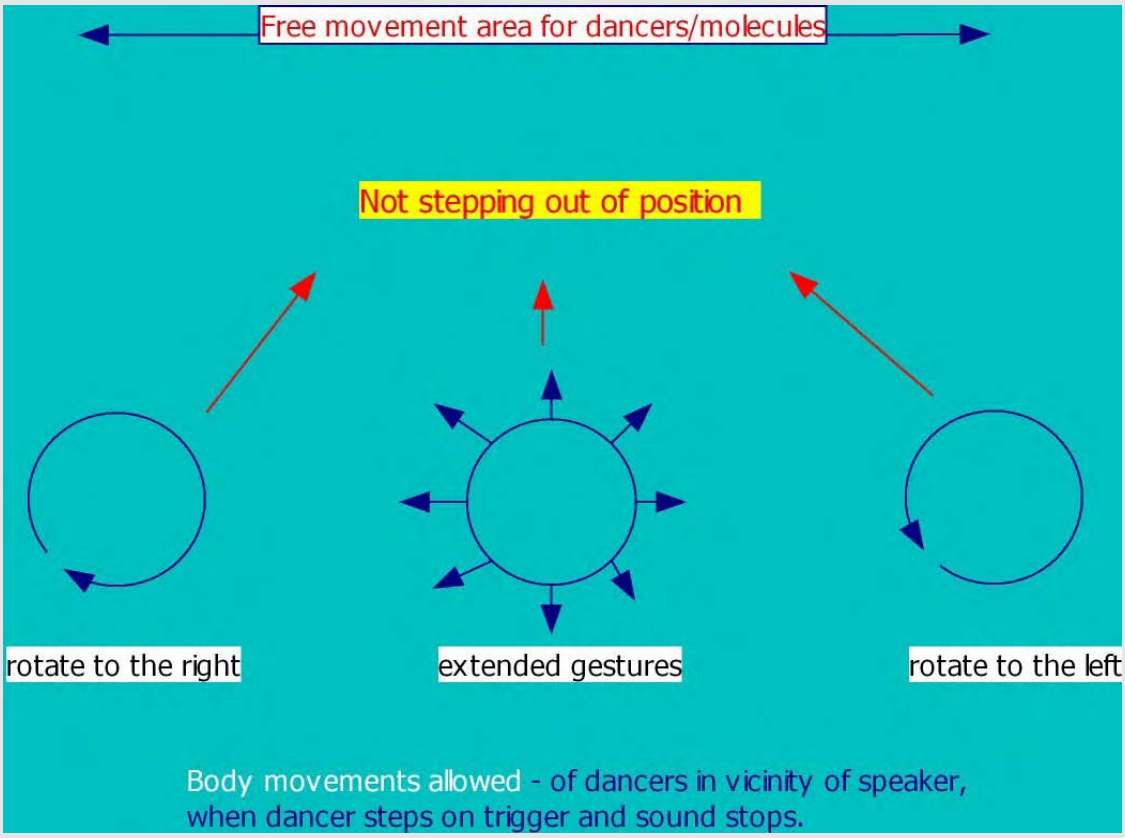
1] The dancer will without knowing stand on the trigger which should cut out the sound to speaker opposite the gate to Level 2 [E.g. trigger **p** → speaker **S1**] *fig: 2* **when** this happens the dancer will be approached by runner and will be given a mobile with the access codes, once he has selected a code the dancer communicates [*via sms*] with the Audience Panel located near the gate he/she needs to access. He/she will wait for the audience to respond. Releasing foot from trigger restores the sound in speaker.
2] On obtaining a NO for an answer from the audience the policing service would also have received the NO answer they would approach the dancer encircle him/her and escort him/her off the set.
3] If dancer within an existing structure steps on trigger [the dancers within the structure stop → freeze and conduct actions indicated *fig 11*], the dancer would have to abide to rules above, if he succeeds to access the code → the complete structure can proceed to Level 2, however if he/she fails the whole community of dancers within structure gets disqualified.



[fig:10]

Disqualification

1] Dancers alternating the handing over of objects due to a collision.
2] Dancers have 30sec to communicate [from the time mobile is handed over to them by runner].
3] If dancer receives a YES signal from audience he will be allowed 10 sec to move into the next level.
4] If the time gap is breached and sms-ing more than one selected code provided to audience the dancer will be disqualified → disqualification would be accompanied by a " loud roar" from audience in the access panels.
5] In the case of a destabilizing dancer that impregnates the system by accessing the code and is given free-way to proceed to Level 2 communication will be by the light technician → which generates a specific coloured light on the gliding surface. Detection of this nature allows for dancers to be checked, on detection of destabilizing agent to be alerted and act to quarantine the dancer.



[Fig: 11]

Choreographer and dancers

Overpowering the opponent → Dancers are engaged in a struggle, through collisions, obtaining the correct colour code of objects to access an area and be part of a structure whilst abiding to the rules and principles of maintaining order in their specific society, doing so advances them to the next level.
The composition is highly complex in that the dancers need to have a certain clear knowledge of pitch changes in the music to be able to execute the work as well as having a clear understanding of continuous flow in motion and to abide to the rules of do and don'ts. The choreographer is to study the six mechanisms and audio work and all other necessities in order to execute the work. The Choreographer and dancers need at all times be engaged with the light technician, sound projectionist, sound engineer.

Light Technician

To generate the appropriate light following activities between each event i.e. capturing motion, the activity of the white sheet, inward → outward transitions, policing service, triggering etc. Each light sequence needs to flow into one another abiding to the rules of biological diffusion. The light technician is to study the six mechanisms and audio work and to all other necessities in order to execute the work. Involvement with the sound projectionist/s and engineers, dancers, choreographers is of vital importance

Sound Projectionist/s + sound engineer/s

To project the sound over the six speakers the sound projectionist/s + engineer/s must be involved with the entire procedure of things happening i.e. to be involved with lighting technician in the synchronization of the sound and light, studying the six mechanisms and the audio work, involvement in the rehearsals with the dancers and choreographer, making suggestions were applicable.

End

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[ΞΩΡΑΑΚ]

[Παρ.3]

will follow →