

Kilgore

for electric guitar, drum-pads and two joy-stick controlled games

marko ciciliani 2017/18

Kilgore for electric guitar, drum-pads and two game-stick controlled games

composed and designed in 2017/18
by Marko Ciciliani

Written for the duo *The Third Guy* (Primož Sukić – electric guitar and Ruben Orio – drum pads) and commissioned by the SKE Fund in Austria.
The premiere of sections 1-3 took place on January 19, 2018 at Q-O2/iMAL in Brussels. The complete version was premiered on March 6, 2018 at the IEM in Graz.

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This work consists of five sections. The entire piece is performed with two computer games, that are operated by each of the musicians. Sections 2) and 4) are performed with the computer game alone, using a traditional joy-stick. The shorter remaining sections are titled **PreLudus**, **InterPaidia** and **PostLudus**. They are performed on an electric guitar and drum pads, while the computer game is running animations.

Details on the Setup

Each performer is running a version of the same game. The sound is produced with a program to be executed in SuperCollider. In SuperCollider the following extensions have to be installed:

- miSCellaneous Lib;
- MCLDUgens;
- SLUgens;

The three softwares (SuperCollider and the two games) are communicating with each other via OSC. Two laptops have to be used. For the communication it is recommended to use an wired UDP connection rather than a wireless local network. With the latter the risk is too high that sensitive data might get lost.

Once the games are started, the ip numbers have to be filled in on which SuperCollider is running. If SuperCollider is running on the same computer, the address 127.0.0.1 has to be filled in, otherwise the ip number. Also the correct port number have to be filled in, which is 6969 for player0 and 6970 for player1.

The two games should be run on two separate laptops, each connected to a video projector that shows the game in full-screen mode. The projections can be positioned next to each other on a screen, or they can also be more distant from each other, but still close enough that they are in the same visual field.

Sound is output through 4 speakers in either a quadrophonic arrangement, or with a pair positioned relatively narrow and to the musicians on stage and the other pair in a wider position flanking the audience.

The two speakers on the left side refer to Player0, the two on the right side to Player1

Each player controls his/her game with a game controller.

Kilgore takes place in a virtual 3D landscape which surrounds a lake in a canyon. In the lake there is an island with a house on it. Each player moves through the landscape with an invisible avatar, seeing the virtual surrounding from a first-person-perspective. Although the events taking place in the two games affect each other, each player is moving around in his/her own environment. The two players cannot meet.

The next page shows a map of the entire environment. 7 important areas are marked on the map, which will be referred to at various points. The section *Territory* is performed only on the landscape surrounding the large lake. Section *House* mainly takes place in the house (7.) on the island in the large lake.



1. Start area 1
2. Start area 2
3. Trigger zone at small lake
4. Trigger zone at large lake
5. Small Lake
6. Large Lake
7. House

Fig. 8: map of the entire landscape in which Kilgore takes place

In the sections *Territory* and *House* the performers do not use their instruments but game controllers in order to navigate through the environment. The game controller offers basic navigational control for the avatars and some special functions. They are shown underneath:



Fig.9:the game controllers and the configurations of the joysticks and keys

The electric guitar should use the following tuning:

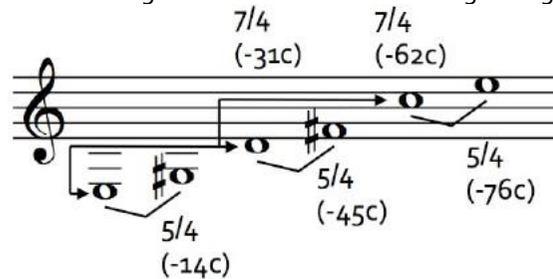


Fig. 1: tuning of the guitar

The tuning is based on two intervals in just intonation, a minor second in the harmonic proportions $7/4$, which results in a seventh which is 31 cents lower than the one in equally tempered tuning, and a major third in the harmonic proportions $5/4$, which is 14 cents lower than the one in the equally tempered tuning.

Since the intervals are stacked onto each other, the deviation from the equally tempered tuning increases with the higher strings. String 6 (e^{''}) is almost a half tone lower (76 cents) than the regular tuning.

1. PraeLudus

PraeLudus is started by pressing **key 4** on either of the game controllers. The video game shows the landscape in which the next sections are going to take place, from a camera circulating from bird's eye perspective across the entire terrain. Simultaneously a soundtrack is being played.

The musicians are ignoring the projection generated by the game and have to be construct musical phrases that are played alternately.

- The guitarist plays the phrases as **melodies**,
- the percussionist as **rhythmic phrases**.

Each player has a *Change-Direction-Signal*.

- With the guitarist this consist of **playing a chord with open strings** at the beginning of a new phrase, instead of just playing a single tone.
- The percussionist uses a dedicated pad that plays a sustained synthesized tone.

Each player can access a pedal which emits an *Error-Signal*. The *Error-Signal* is always applied when a player notices that the other player made an error in the playing of the phrase.

- The *Error-Signal* consists of a short fragment of an old synthetic recording of the *Walkürenritt* by Richard Wagner.



Fig.2: two different views during *PraeLudus*

Construction of the Phrases

In an alternating fashion the players are starting so called *Phrase-Cycles*. The first player is determined by chance.

The *Phrase-Cycle* consist of phrases that are constructed with a *Baselength* and a *Growlength* both expressed in 16th notes. Several phrases built with the *Baselength* and a *Growlength* together form the *Phrase-Cycle*.

Baselength and *Growlength* each have a minimum duration of **1 x 16th note** and a maximum duration of **13 x 16th notes**. The tempo should be between quarter = 64-82 and kept consistent during the entire section.

When starting a new *Phrase-Cycle* the first player chooses a *Baselength* and a *Growlength* for the next phrase. The chosen durations remain valid for the entire *Phrase-Cycle*. He/She announces first the *Baselength* by playing a phrase for the selected length and then, after a pause of the same duration as the chosen *Baselength*, the *Growlength* for the other selected length.

After another pause lasting as long as the *Growlength*, the second player plays a musical phrase lasting the duration of the *Baselength* plus the duration of the *Growlength*.

Then the first player responds seamlessly with a musical phrase that consists of the duration of the *Baselength* plus **twice** the duration of the *Growlength*.

Then the second player responds seamlessly with a musical phrase that consists of the duration of the *Baselength* plus **three times** the duration of the *Growlength*. Etc.

When starting a response, each player has the possibility to play the *Change-Direction-Signal* as the first sound of the next phrase, which indicates that now, the number of *Growlengths* is now **shrinking** instead of **growing**. So if the previous phrase consisted of the duration of the *Baselength* plus three times the duration of the *Growlength*, then the phrase that was just started will last the duration of the *Baselength* plus **two times** the duration of the *Growlength*.

If a shrinking mode is in progress, and the phrase only lasts the duration of the *Baselength* plus the duration of a single *Growlength* consequently the next phrase will only last the duration of the *Baselength*. That single *Baselength* phrase should be played by both players in unison. The next player then announces a new *Baselength* and *Growlength* for the following *Phrase-Cycle*.

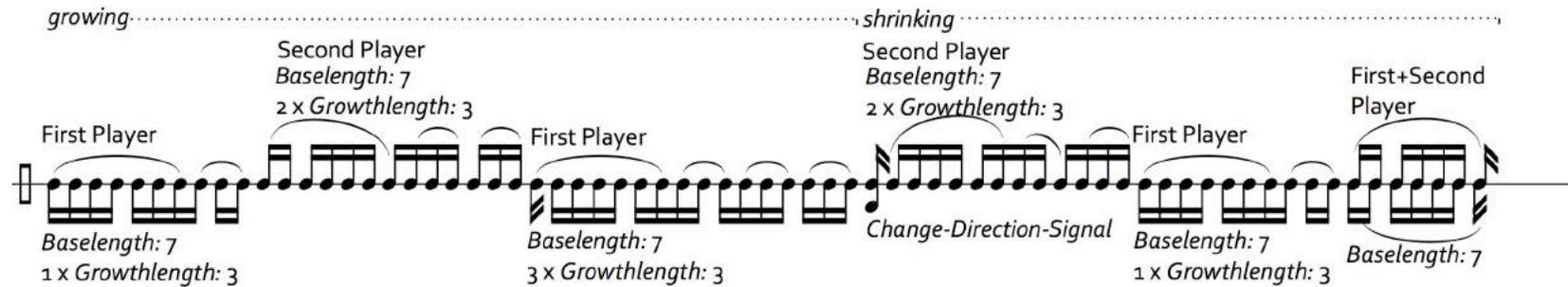


Fig.3: schematic example of the construction of different phrase lengths in a *Phrase-Cycle*

A *Phrase-Cycle* can be interrupted by both players when they detected that the other player made an error in the construction and/or playing of a phrase. In that case the player who detected the opponent's mistake triggers the *Error-Signal*.

Musical shaping of the Phrases

Phrases can be played in two modes: *catenative* or *dotted*.

In the ***catenative mode*** all 16th notes are played. Thereby the first note of the subphrases – the notes forming the *Baselength* and the *Growthlength* – has to be made recognizable. This can be done for example by accentuating it dynamically, by marking it with consequently with the same sound, or by using iterative phrasings. See Fig.2 for examples

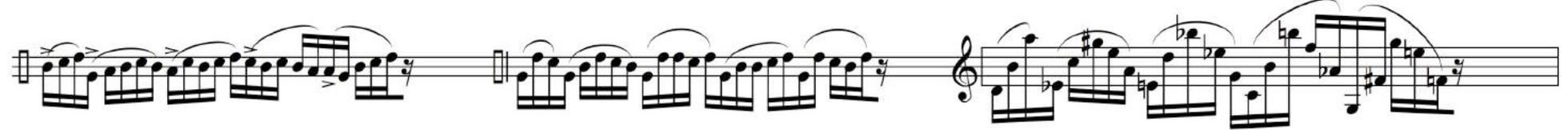


Fig.4: different sort of marking the sub-phrases in a phrase: dynamic marking, marking with the same sound, iterative phrasing. Each time with *Baselength:3, Growthlength:5*

In the ***dotted mode*** the sub-phrases are divided in punctuated phrases. The punctuations have to clearly mark the beginnings of the sub-phrases, as for example by applying the following subdivisions:



Fig.5: punctuations of groups of 3, 4 and 5 x 16th notes

When the length of a *Baselength* or *Growthlength* is larger, it might be necessary to subdivide the units, as for example in the following fashion:

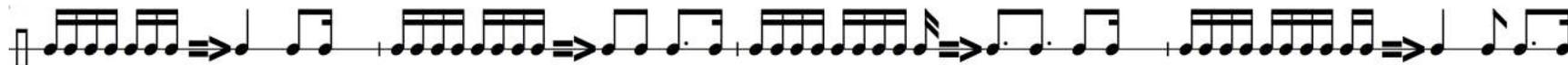


Fig.6: subdivisions and punctuations of groups of 7, 8, 9 and 10 x 16th notes

Dotted and *Catenative mode* can be freely combined during a single phrase!
Announcements of new *Base-* and *Growthlengths* by a player always have to be played in *catenative mode*.

Applying number swapping as a musical variation

Each player can also use a *Swap-Number-Signal* and thereby introduce a swapping of the durations of the *Baselength* and *Growthlength* which is effective immediately.

The *Swap-Number-Signal* is applied as follows. While the other player is playing a phrase the musician who wants to perform the number swap joins the other player while he/she plays the last sub-phrase. The joining-in during the last sub-phrase is thus the *Swap-Number-Signal*, which always has to be played in *catenative mode*.

The player who introduced the swap then immediately plays the next phrase with the number swapping applied. Please note that numerically shrinking and growth processes are unaffected by the number swaps. Consequently, the numbers have to be applied to the newly arranged sub-phrases.

Here's an example how this might play out:

The diagram shows two staves of musical notation. The top staff begins with a phrase of notes. Above it, a bracket indicates a *Baselength: 3* and *3 x Growthlength: 7*. A vertical dashed line marks the end of this phrase, labeled "number swap!". The bottom staff begins with a rest, followed by a *Swap-Number-Signal* (a dotted line with a vertical tick). After the signal, the bottom staff plays a phrase of notes. Above it, a bracket indicates a *Baselength: 7* and *4 x Growthlength: 3*. The phrase on the bottom staff is shorter than the phrase on the top staff.

Fig.7: example of a number swap. Please note that despite the growth of the phrase, the phrase after the number swap is shorter than the previous one, which results from the *Growthlength* which is much shorter after the swap.

2. Territory

This is the first of two sections that are performed by navigating in a 3D environment alike to a computer game that at the same time functions as score and instrument.

After performing *PraeLudus* the musicians start a transition to *Territory* by pressing **key 4** on either of the two game controllers. The flight over the landscape that was going on during *PraeLudus* is faded out and a new image is faded in. During the transition, the musicians should take the game controller and get ready for *Territory*. The performance of this sections follows a number of challenges and tasks that have to be fulfilled by the musicians.

The newly faded in image shows the same landscape as previously, but now from the first-person perspective of the performer's avatar. The musicians can now use the game controllers to navigate the avatar.

At the beginning of the game the two avatars are in the positions that are marked with number 1 and 2 on the map. Which player finds him/herself in which position is determined by chance.



Fig.10:the view from the two starting positions in section *Territory*.

With the beginning of this section a red object falls down from the sky. After landing it bounces around before coming to a halt (it is possible that the object bounces off the edge of the environment. In that case a new object will be generated automatically). The object also produces a steady pitch with a mellow timbre, which occasionally starts pulsating. Its amplitude changes with the distance to the performer.

2.1 Challenge 1

The performers have to locate the object and navigate to it. The red object also emits a red light, which makes it easier to locate it, as it colors its immediate surrounding. At any point the musicians can use **key 8** on the controller in order to change the visual perspective from first-person to top-down. This often makes it easier to navigate in the environment and to spot objects. Changing the perspective also changes any sound that is currently being produced by distorting the spectrum and transposing it upwards. The key can therefore also be used for its musical quality.

Once the musicians have found the red object, they have to collide with it, which is going to make it dissolve and produce a different pitch with a more prominent timbre. The musician who found the object first gets a trophy as reward. Nevertheless, the beginning of the piece should not be performed hastily. It should also offer an introduction to the audience by exploring the area and the sounds that are present (a sound is also generated by the avatar once it starts moving).

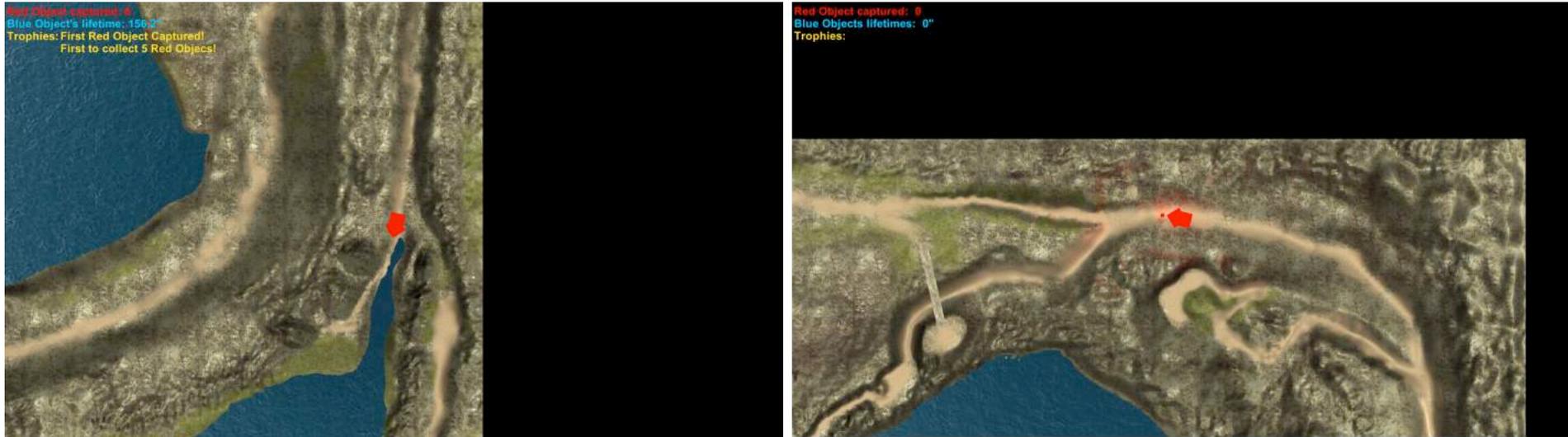


Fig.11: two examples of top-view perspectives

2.2 Challenge 2

Once the first red object has been dissolved six new red objects fall from the sky in relatively short time intervals. The pitches they produce together, once they have come to a halt, form a cluster chord.

The task of the performers is the same as before: locate the objects, navigate to them and make them pop by colliding with them. With each pop a new pitch is formed, resulting in a new chord. Now the challenge is to collect altogether 5 objects.

Once a player has collected 5 red objects, he/she gains a trophy. From this point on, the tasks of the two players divide in two separate strands. They are from now on referred to as **player A** for the player who first gained 5 red objects, and **player B** for the other player.

2.3 Player B, after Challenge 2

Player B has to continue to collect red objects, in order to progress to the next state of the game. However, as a 'penalty' for not having been the first one to collect 5 objects, 5 additional objects have to be collected from the moment on when Player A popped the 5th object.

Example: if player B already collected 4 objects at the moment when player A found the 5th object, player B will now have to collect a total of 9 objects (the 4 that were already collected, plus 5 'penalty' objects). For this purpose, 7 additional red objects will fall from the sky in short time intervals after player A popped the 5th object. This happens only in Player B's environment, not in the one of Player A who already fulfilled the duty of collecting red objects.

Once player B found the required number of red objects, the next state of the game has been reached, which is marked by a chordal change.



Fig.12: a single red object lying on the ground and several red objects falling from the sky

2.4 Player A + B, after Challenge 2

From the moment on when the 5th red object has been found, a new functionality is introduced with player A. Whenever player A jumps, a blue object falls from the sky in the environment of player A, and two blue objects fall in the environment of player B. They always falls in the immediate proximity of wherever the player is.

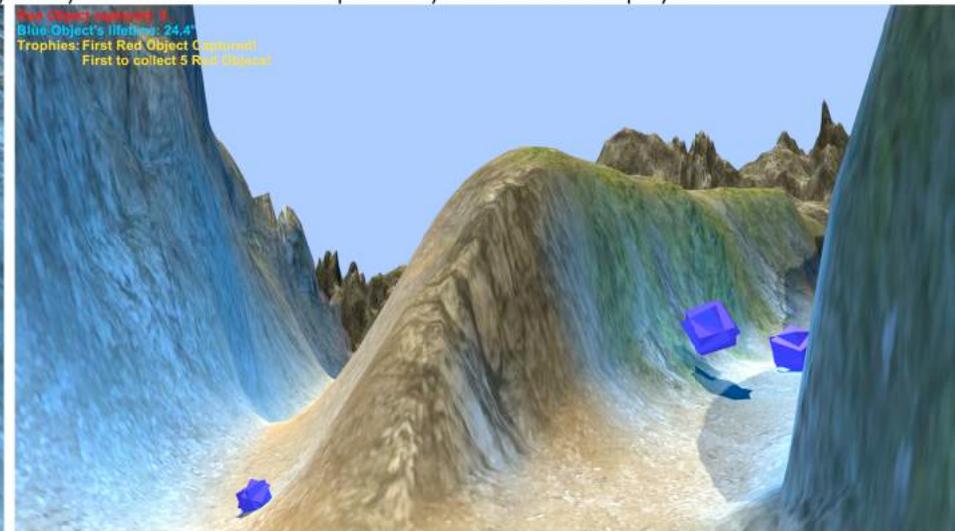
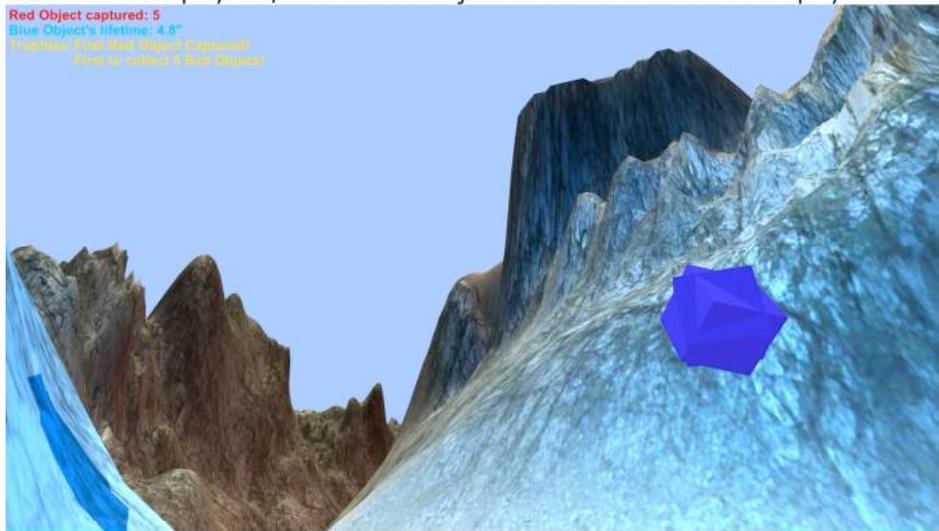


Fig.13: a single blue object and several blue objects bouncing in the landscape

The blue objects have a very different behavior than the red objects:

- once they hit the ground they start to produce a feedback sound. The feedback frequency changes, as the object rotates.
- Whenever the blue object stops moving, it shrinks and rapidly disappears. It does not pop upon collision as the red object does.
- It emits a blue light.

The performers are encouraged to engage with the blue objects by kicking them around and thereby to prolong their lifetime. The lifetime is measured and stored as a positive credit for each of the players.

By receiving two objects upon a jump by player A, rather than one, player B gets an advantage as an opportunity to remedy for not gaining the trophy for being the first one to find 5 red objects. Player A should keep this in mind when deciding to jump.

2.5 Player A, after Challenge 2

Since player A was the first one to have collected 5 red objects, a special trigger zone has been unlocked, marked as position 3 on the map, just next to the small lake. Find your way to the small lake. As a 'reward' for having found the 5 objects, chord changes are occurring at regular intervals, depending on the speed of motion. Also a rhythmic layer is played which changes with every jump that player A performs.

Once player A reached the small lake, he/she should get to the trigger area. Once this area has been reached, the surface of the lake will transform to a screen on which a film of the Wochenschau from May 30 1941 is shown. Also a soundfile of a synthetic version of Richard Wagner's "Ritt der Walküren" starts playing, which is rapidly transformed. As the film and the soundfile play, the water level of the lake decreases and hence the size of the film surface.

Once the lake is empty, the soundfile of Richard Wagner's "Ritt der Walküren" – very distorted by now – stops playing. A large hole at the bottom of the lake has now become visible through which the water ran out. Next to it is a bronze-colored object, of the same kind as the red and blue objects, but larger. This unlocks **Challenge 3** for both players.

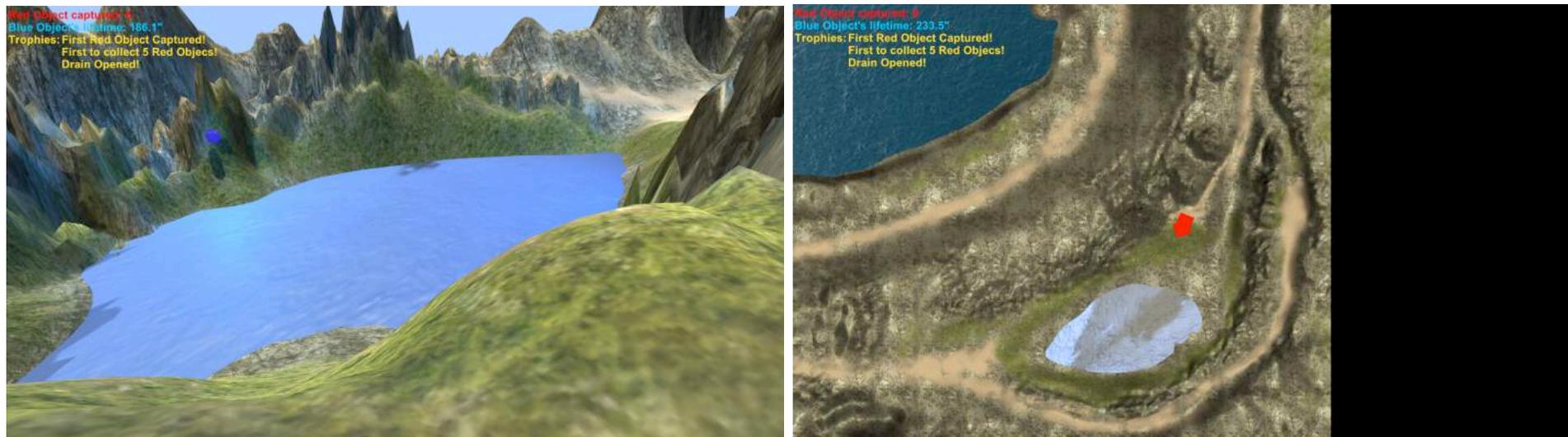


Fig.14: the small lake from first-person and top-down perspective

2.6 Player A, Challenge 3

Player A has to approach the bronze colored object and kick it around. After having been touched for the first time, it starts to produce a feedback-like sound, although a different one than the ones generated by the blue objects. Again the frequencies change as the object is turned around.

Each time player A collides with the object it slightly shrinks in size. Player A has to engage with it for long enough so that it becomes sufficiently small to be pushed into the water drain. Once it disappears in the water drain, its sound stops. For Player A the section *Territory* stops here.

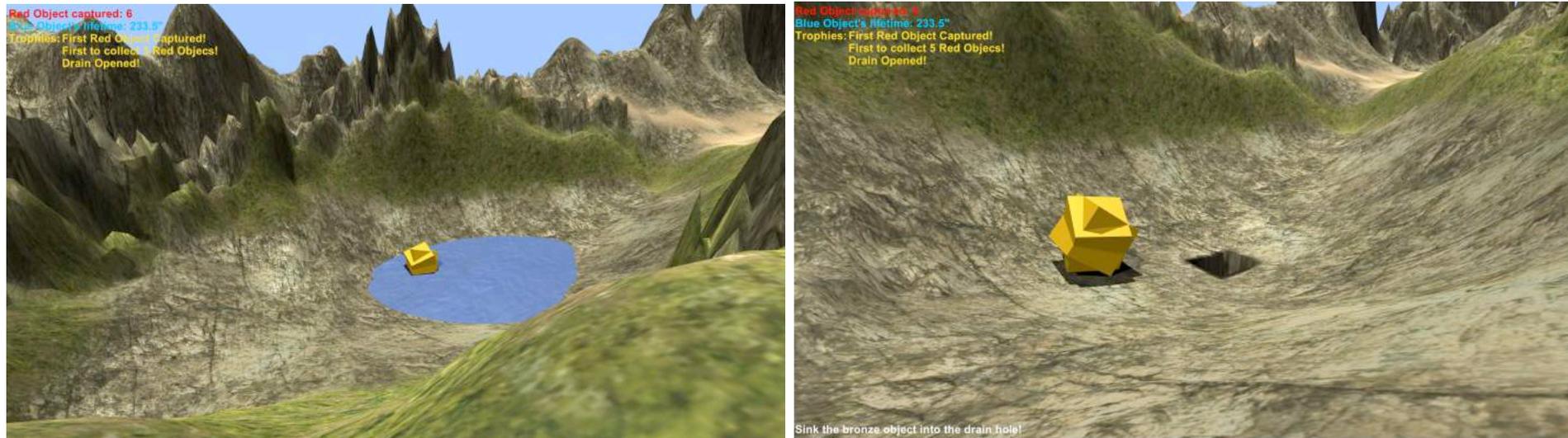


Fig.15:the bronze object becoming visible and the bronze object next to the drain hole

2.7 Player B, Challenge 3

Once the small lake disappeared (see *Player A, after Challenge 2* above) a trigger area is unlocked next to the large lake, marked as position 4 on the map. Already after player A found the 5th red object (*Challenge 2*) player B can slowly start orienting towards the large lake.

Three conditions must have been met in order to activate the trigger zone next to the large lake:

- player B must have found the required number of red objects;
- player A must have started the film on the small lake and the film must have finished.

Activating the trigger is the last activity in section *Territory* for player B. The triggering leads to two events:

- a soundtrack starts playing, which belongs to the next section: *InterPaidia*
- a stone bridge comes out of the water of the large lake, creating a connection between the terrain and the island.

2.8 Transition to *InterPaidia*

Once player A sunk the bronze object in the water-drain **and** player B engaged the trigger which makes the soundtrack of *InterPaidia* start and the bridge surface, either of the players can press **key 3** on their game controller. The image of player A's and B's landscapes will fade out and the image of an automated camera will come in.

3. InterPaidia

The automated camera on the screens is similar to the one which was running during *PraeLudus*. This time the camera moves across the lake to the house on the island, into it, through the living room where it slows down at a TV set which shows the same film that was previously running on the lake, then up the stairs and out through the balcony, surrounding the house and returning to the start position. During this motion dusk sets in and night falls.



Fig.15: Various images from *Interpaidia* in chronological order

For the musicians, there are no strict rule sets for *InterPaidia*. The percussionist does not play during *InterPaidia*.

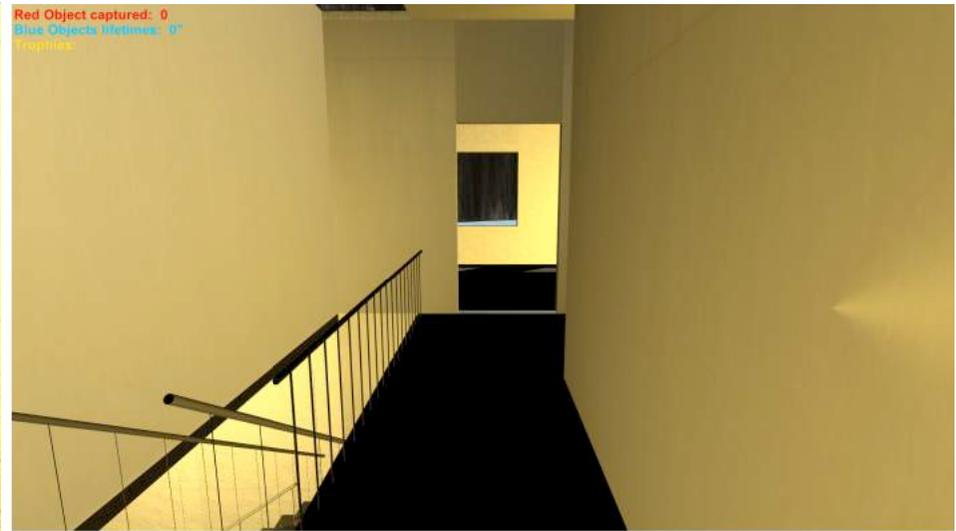


Fig.16: more images from *InterPaidia*, here also the settling dusk can be seen

The guitar player takes the guitar, moves with it close to the guitar amplifier and produces feedbacks, at frequencies that correspond to the soundtrack which is running in the background. On one hand, the feedbacks should add to the harmonies of the soundtrack. On the other hand they turn the digitally simulated feedbacks of the blue objects into a live event. Digitally simulated feedbacks are again going to play a role in the section *House*.

In terms of balance, the feedbacks should be balanced with the level of the soundtrack; they should not overpower it.

In total, *InterPaidia* should last between 2 and 3 minutes, measured from the moment when the automated camera started to move.

4. House

Two configurations on the game controller change for section *House*. The key for speed boost now triggers feedbacks, while the key 2 triggers a so called 'kicking ball' (see 4.5). Please refer to *Fig.9* for the layout of the keys.

The Top View has slightly changed in *House* as well: it does not merely show the player's perspective and the environment from a bird's eye's view, but here the house is displayed in a destroyed state with various chunks in various positions. During the section *House* the house will indeed go through transformations and end up in a destroyed state. Contrary to section *Territory*, here the Top View also offers a glimpse to the future, to the end state of the house.

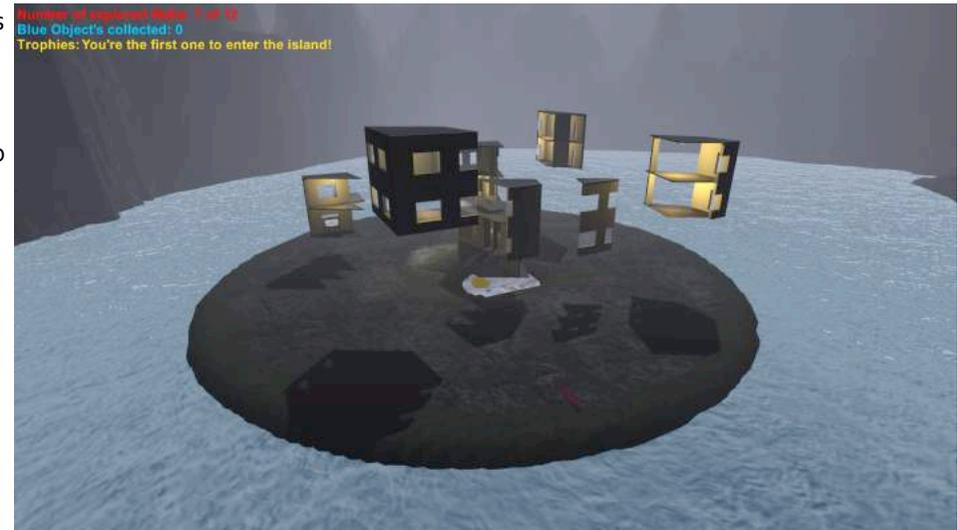


Fig.17: the Top-View in House

4.1 Reaching the Island

This section is taking place in a nighttime scenery. The first assignment for both players is to cross the bridge and to reach the island. As soon as one of the two players enters the bridge, a pitch starts to sound. The performers have to jump from one stone to the next. With every step the pitch changes and thus forms a melody. Since both musicians are controlling the same sustaining pitch, their timing of the jumps will have an influence on the melodic character of the melody. The jumps should thus be performed with musical awareness.

The pan position also responds to who performed the last jump. The sound always jumps to the loudspeakers associated with the player who performed the last jump.

4.2 Unlocking the Door

Once the musicians arrived on the island a harmonic texture will start playing and the view of the avatars will be directed towards the bridge which will now sink again under the water surface. During this time, the avatar can not be navigated. As soon as the bridge sunk, the avatar can be moved freely again.



Fig.18: the starting position of *House* and the view once the island has been reached

The next task is to enter the house. However, when approaching the entrance, the performers will realize that the door is locked.

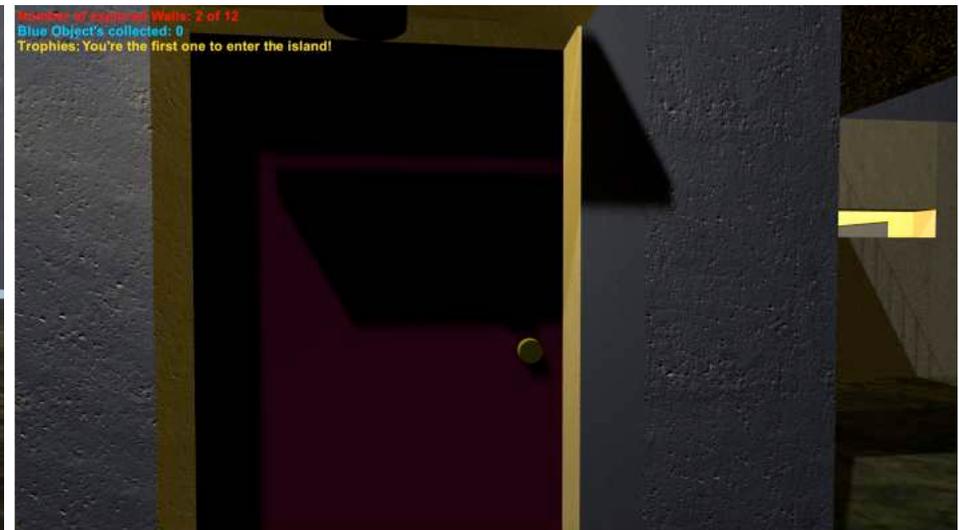


Fig.19: the locked door of the house. If the entrance is approached, the light above the door turns off

In order to unlock it, the performers have to rub with the avatars along the outside walls of the house, which will generate a granulated noisy sound. 12 different wall segments have to be touched in order to unlock the door. This means that the performers will have to move around the house. While moving around the house, each player should also look for a surf-board that is lying at the edge of the island. Once the surf-board has been found, it should be approached in order to trigger an additional harmonic-layer.

After 12 segments have been touched the door will open automatically when the performers move directly in front of it.

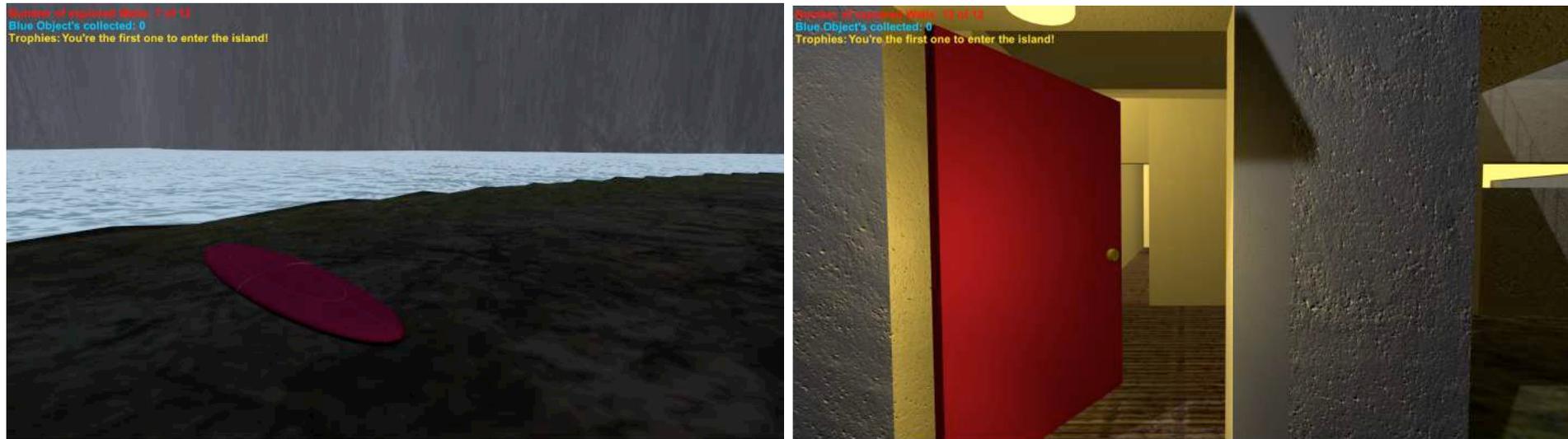


Fig.20: the surf-board and the door opening up, after it was unlocked

4.3 Inside the House

Once a performer moves past the hall inside the house, a pulsating sound is triggered. This pulse is synchronized with a flashing ceiling lamp in one of the rooms in the house. It is the performer's task to locate that light and to enter that room.

Hint: the faster the pulse, the smaller the room where it emanates from.

4.4 Extinguishing the Flashing Light

Once a room has been entered where the ceiling light is flashing, the performer has to activate the feedback-button. By facing different directions while holding the feedback button, different feedback frequencies can be generated. After several seconds of feedbacking, a granulated sustained sound starts to swell and a crack in the corresponding section of the house starts to open up. As the opening up of the crack comes to a halt, the sustained sound and the flashing stops, the light stays off and a new pulse occurs, emanating from a different room. Now the performer has to look for the room where the new pulse is coming from and perform the same actions as previously.



Fig.21: view of different cracks opening up in the house during the pulsations

4.5 The 'Kicking-Ball'

With every pulse that has been successfully stopped, the performer gets a credit of one kicking-ball. This ball can be 'kicked off' by the performer at any point, in the direction that is faced. The ball will produce a pitch which will change every time it hits a wall. Hence, the ball is a melody generator. The ball keeps bouncing and will only disappear once it

left the house. The performer can enforce this by changing to the 'top-view'. During the top view the house can be seen from a remote position torn into different pieces. Since there are wide cracks between the different splinters of the house, it is likely that the kicking-ball will bounce out of the house and thereby disappear.



Fig. 22: a red ball bouncing around in the house, the second image shows how it leaves the building through a crack in the wall

4.6 Interacting with Small Blue Objects

The section with the flashing lights, as described in 4.4, ends when all rooms have been engaged with the pulses and cleansed from it by the performers with the feedbacks. The various rooms in the building are divided amongst the players. For example, if in the game of player 1 the living room starts to flash and the flashing is subsequently stopped by applying feedbacks, the light in the corresponding room in the game of player O will also be turned off and the room will not be activated again with flashes.

A total of 9 rooms will pulsate in this section. By the end of this section there will be several large cracks in the building. Also it will be relatively dark, as all ceiling lamps have been turned off.

Once all 9 have been liberated of the pulses, small blue objects will start falling off the ceiling. The performers have to interact with them. After having touched them several times, the objects will explode and disappear. During this process, the cracks of the building will start to tilt.

Once a player managed to make 10 objects explode, she or he is the winner of the section.



Fig.23: small blue objects that dropped off the ceilings

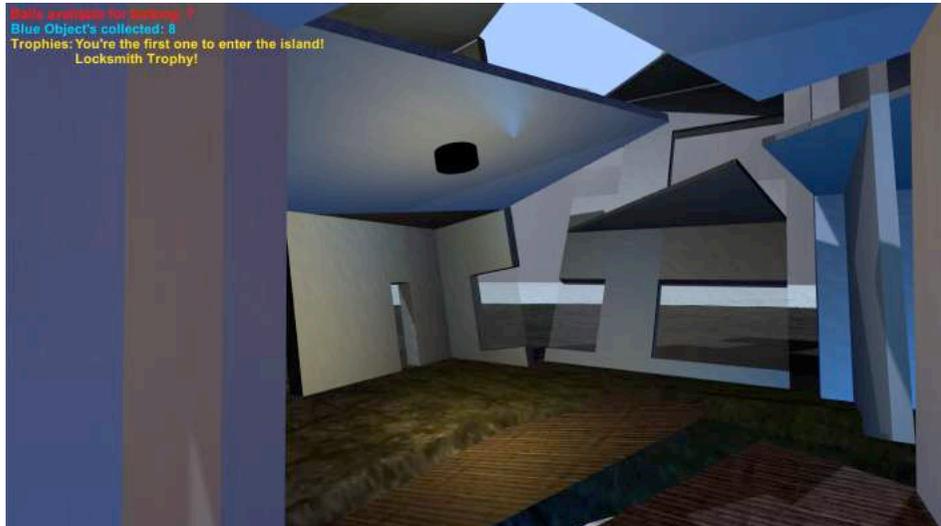


Fig.24: state of the house after the cracks have tilted

4.7 Winner Section

Once the winner condition has been achieved a number of automated events unfold:

- with the winner, the cracks of the building move outwards and thereby reveal a circular area underneath the building that shows another film fragment, similar as what took place towards the end of the section "Territory", when a film was displayed on the small lake. The film displayed this time is an excerpt from D.W. Griffith's *Birth of a Nation* from 1915, which led to the rebirth of the Ku Klux Klan.
- the winner is locked in a position above the building, looking down on it from a bird's eye perspective.
- the loser is locked in a position in the living room. The cracks move inwards so that the avatar is captured immobile in the house.
- with the winner, another bronze object ascends from the film canvas. In parallel the avatar descends back down to the floor level of the house.



Fig.25: the bronze object ascending from the film canvas

4.8 Finale

Similarly as in the section "Territory" the winner's task is to interact with the bronze object and to sink it. The object can alternatively be sunk in a hole that appears close next to the film canvas, or in the large lake. However, the object has to be small enough to fit into the hole or disappear completely underneath the lake's water surface, in order to invoke the winner condition.

Once the winner condition has been achieved, the performers move on to the next section: *PostLudus*

5. PostLudus

During this section the view of an automated camera is displayed, as in *PraeLudus* and *InterPaidia*. However, this time the is only displayed on the screen that is associated with the winner. The other screen slowly fades to black.

The film shows a presumed first-person perspective of an avatar that is standing on the surf-board and surfing across the lake. The scene ends with the surf board approaching the coast of the main territory, but then the surf-board is airborne and ascends above the lake until the entire environment disappears in a foggy cloud.

In this section the musicians are playing their instruments again. Like in *PraeLudus* they are building musical phrases. Exactly the same rules apply as in *PraeLudus*, but with the following changes:

- instead of playing alternatingly, both musicians play in unison.
- Between every phrase a pause is inserted. Alternatingly the musicians cue the new tempo, which should be different every time.
- If a musician makes a mistake while playing the unison, the same *error-signal* has to be triggered as in *PraeLudus*
- after a mistake, a longer pause has to be inserted before the next phrase structure is started. During this pause, the guitarist plays feedbacks, similar to the manner he/she did it in *Interpaidia*

Contrary to *PraeLudus* and *InterPaidia* the duration of this section is fixed. The musicians should roughly end playing when the surf-board starts to ascend into the sky.



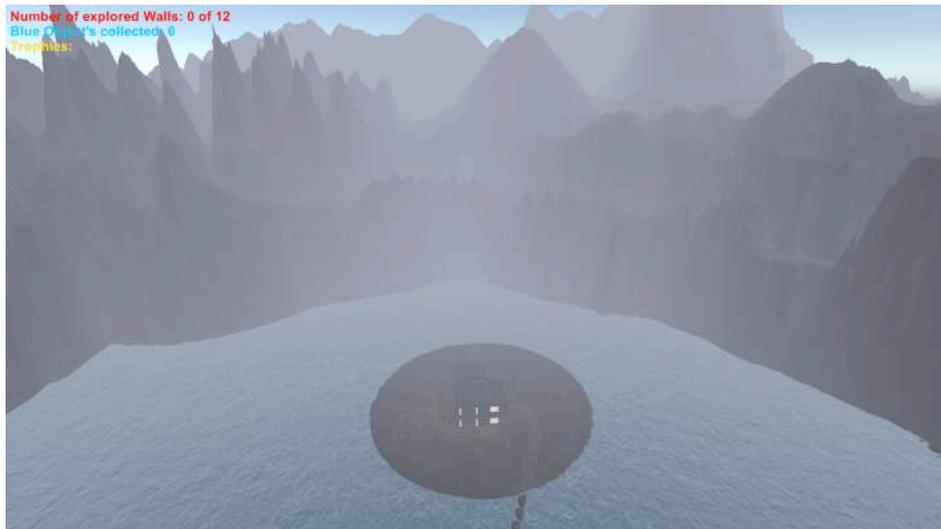


Fig.z6:various images from *PostLudus* with the surf-board floating across the lake and at the end ascending into sky

