Jonathan Weinel

Introduction

Quake Delirium[1] is a specially designed software patch which enhances the video game *Quake*[2] in order to create a uniquely modified version, with graphics, audio and game parameters altered towards a more individual aesthetic for each user. The project is part of my wider research regarding compositional techniques to elicit *altered states of consciousness* (ASCs). For the purposes of this article, 'altered states of consciousness' refers contextually to enhancing audio and graphical parameters of a video game in such a way as to reflect perceptual features of dreamlike, intoxicated or hallucinogenic experiences. The goal is to add a new level of interaction to existing video games and virtual worlds, by facilitating digital hallucinations and simulated temporal shifts of consciousness.

The conceived ideal realisation of this project was to construct a 'Universal Game Remix Device' that would be suitable for use with many different video games, as a way to 'remix'[3] the virtual experiences towards altered consciousness aesthetics. Technical limitations regarding the feasibility of creating a Universal Game Remix Device led to the development of *Quake Delirium*, a *Max/MSP*[4] patch[5] which works only with the game *Quake* while running the *Fitzquake*[6] modification. *Quake Delirium* can be considered as a video game 'hack'[7] which demonstrates the proof of concept.

In the course of this article I shall demonstrate how altered states of consciousness can be portrayed in video games, either in unique cases or across multiple games by creating the hypothesised Universal Game Remix Device. More broadly, through this discussion I hope to stimulate thought on ways in which interactive artworks and video games could be remixed, and how the potential for projects of this kind could be furthered substantially by the development of a new software protocol which allows artists using *Max/MSP/Jitter*[8] and *Pure Data*[9] to exchange video game information data and signals.

ASCs in Video Games

There are existing examples of video games which convey altered states of consciousness, which form a background for this study. These can be divided into two categories:

1. Games which feature literally portrayed dreams, intoxication or hallucinogenic experiences.
2. Games which feature graphical or thematic content which audiences may consider to reflect states of dream, intoxication or hallucination, but without any direct or literal reference to these states.

Games which feature literally portrayed dreams, intoxication or hallucinogenic experiences

Games in this category may show a character taking an intoxicating substance which causes auditory or perceptual changes within the game, to reflect the intoxicated state of the character. A specific example occurs in *Grand Theft Auto III*[10], in which the character can pick up an item which looks like a pharmaceutical pill. Upon doing so he becomes intoxicated, experiencing a distortion of time perception which is reflected by a slow-motion effect in the game. Another example occurs in the adventure/puzzle game *Fantasy World Dizzy*[11] in which the character Dizzy (a cartoon egg-man) can drink a bottle of alcoholic spirits, and proceeds to roll around spontaneously for a few minutes until the effects wear off. Some other examples include:

1 Jonathan Weinel, Quake Delirium, 2010. High quality video demonstration and PC (Windows) software http://www.jonweinel.com/. Cycling '74 Project 48: Quake Delirium http://cycling74.com/2010/03/03/project48-quake-delirium/. Low quality demonstration video http://www.youtube.com/watch?v=9ueXduUEMQM. Accessed: 9/4/2010.

2 *Quake*, id Software, 1996. PC (Windows) CD-ROM.

3 The term 'remix' here refers to changing the video game to create a new version from the original elements, and is analogous to the use of the term as it is applied to describe the alternative versions of a song in popular music.

4 *Max/MSP* (http://cycling74.com/. Accessed: 9/4/2010.) is a graphical programming language for sound.

5 In this article 'patch' refers to a piece of software created in *Max/MSP* or in the program *Pure Data* (see note 9 below).

6 John Fitz, *Fitzquake 0.85*. http://www.celephais.net/fitzquake/. Accessed: 9/4/2010. *Fitzquake* is a modification for the game *Quake* which improves the graphics and compatibility for use with modern computers.

7 'Hack' refers to the re-configuration of a system to produce results not intended by the original author. In this case the work hack is also used to reflect that the modification is inelegant and not intended as a permanent solution or for widespread use.

8 The 'Jitter' component adds the facility to process video with *Max/MSP*.

9 Pure Data (http://crca.ucsd.edu/~msp/. Accessed: 9/4/2010.) is a graphical programming language for sound and multimedia created by Miller Puckette.

10 *Grand Theft Auto III*, Rockstar Games, 2001. PC (Windows) CD-ROM.

11 *Fantasy World Dizzy*, Codemasters, 1989. Atari ST.

• *Death Rally*[12]: One can collect magic mushrooms[13], which briefly cause a wave/ripple distortion effect to occur on the screen. A comical "wow" speech sound is heard.

• *Duke Nukem 3D*[14]: The character can take steroids which cause him/her to run much faster than usual for a short duration. A fast heartbeat sound is heard.

• *Grand Theft Auto: Vice City*[15]: The character can become intoxicated on alcoholic fumes, reflected in the game by a swaying camera and a glowing brightness effect.

• *LSD: Dream Emulator*[16]: The game is based upon a dream diary, and portrays surrealistic 3D environments in order to convey these dream states. Psychedelic electronic dance music supports the mood.

• *American McGee's Alice*[19]: based on Lewis Carroll's novel *Alice's Adventures in Wonderland* (Carol, 1992), the game has a dreamlike and surreal narrative similar to the novel.

• *Super Mario Brothers*[20]: features a red mushroom which the character can eat causing him to double in height. There is no specific indication that the mushroom is hallucinogenic, though it does bear a strong resemblance to the Amanita Muscaria mushroom, which has historically been used as psychoactive drug in various cultures such as the Shamanic practices of Siberia (Schultes et al, 2001).

• *Yoshi's Island*[21]: within a brightly coloured fantasy land, the character can trigger a rippling effect on-screen where the colour hue also cycles and the music slows down.

Games which feature graphical or thematic content which audiences may consider to reflect states of dream, intoxication or hallucination, but without any direct or literal reference to these states

Games in this second and more subjective category may be interpreted by some audiences as psychedelic, despite the absence of any overt references to hallucinogens. Notable examples are the games produced by Jeff Minter which utilise his light synthesiser programs. Games such as *Space Giraffe*[17] incorporate the light synthesis techniques which Minter has developed since the late 1980s, with programmes such as *Trip-A-Tron*[18] on the Atari ST. There are no references to hallucinogens within most of Jeff Minter's games. However the colourful patterns produced by the light synthesisers incorporated in his games are often referred to as 'psychedelic' due to the colourful patterns they produce, which are evocative of the effects of hallucinogens such as LSD. It is perhaps arguable that the dynamic virtual worlds and environments portrayed in video games are inherently hallucinatory in a general sense. However going beyond this interpretation, some games evidently bear the comparison more readily than others; Jeff Minter's explosions of pin-point dots of light are clearly more aligned with psychedelic culture than a football management game. Other examples in this category include:

From the examples given, it is possible to identify two methods by which the games elicit altered states of consciousness. The first is to use a temporal change to the 'game perception'; that is the way the game world is displayed to the player on-screen. Shifting the game perception of the game world can be achieved by changing graphical effects or speed for a limited time. Games such as *Grand Theft Auto III* and *Death Rally* demonstrate this method. In *Death Rally*, a rippling effect occurs on screen which changes the game perception, while audio and visual cues (the cartoon of the magic mushroom you collect and the "wow" speech sample) support the analogy. The temporal nature of the effect is crucial to its dramatic impact, as it disrupts the way the player has become accustomed to experiencing the game world.

The second method is to elicit ASCs by making the global aesthetics or narrative of the game surreal, illogical or hallucinatory in a more general sense. *American McGee's Alice* and *LSD: Dream Emulator* are examples of this method. These games feature surreal motifs on a sustained basis throughout, lending them a dreamlike or hallucinatory style. The aesthetics or narratives of these games become aligned with characteristics associated with ASC experiences in the real-world.

It is also possible for games to use both methods. *Yoshi's Island* is a brightly coloured surrealistic landscape we could

---

12 *Death Rally*, Apogee, 1996. PC (DOS) CD-ROM.

13 'Magic mushrooms' refers to naturally occurring Psilocybin mushrooms which produce hallucinogenic effects when consumed.

14 *Duke Nukem 3D*, 3D Realms, 1996. PC (Windows) CD-ROM.

15 *Grand Theft Auto: Vice City*, Rockstar Games, 2003. PC (Windows) CD-ROM.

16 *LSD: Dream Emulator*, Asmik Ace Entertainment, 1998. Playstation.

17 *Space Giraffe*, Llamasoft, 2008. Xbox 360 (XBLA).

18 *Trip-A-Tron*, Llamasoft, 1988. Atari ST.

19 *American McGee's Alice*, Electronic Arts, 2000. PC (Windows) CD-ROM.

20 *Super Mario Brothers*, Nintendo, 1987. Nintendo Entertainments System.

21 *Super Mario World 2: Yoshi's Island*, Nintendo, 1995. Super NES.

describe as hallucinatory. Within a certain level of *Yoshi's Island* a temporal effect can be triggered which also changes the game perception. Note that the creators of this game may not have intended it to reflect ASCs. Nonetheless we can say that it does so, on the basis of a comparison of the end product with the way ASCs are portrayed in other games; the ripple effect in *Yoshi's Island* is similar to that in *Death Rally.* Moreover, with the addition of shifting colour hues and surreal motifs we can say that, if anything, *Yoshi's Island* is more psychedelic than *Death Rally*.

Across the temporal and global methods used in the games surveyed, several specific examples of features to elicit ASCs can be identified. These are:

- Perspective distortions, rippling screen, or drunkenly swaying camera.
- Colour and brightness distortions, changing the colour hue or increasing brightness.
- Surreal graphical motifs, themes or narratives.
- Brightly coloured patterns and particle effects.
- Time distortions, slowing down or increasing the speed of the game.
- Auditory effects and/or music that match the above.

Project Aim

The aim of this study was to find ways to enhance and remix existing video games to incorporate these ASC features. It was envisioned that this could be achieved by creating an external device which could process multiple video games and games consoles.

The reason why I wanted to work with existing games for this project, rather than creating a new interactive artwork was twofold. Firstly, it would be possible to remix a rich cultural history of video games. The popularity of *chiptune*[22] music evidences the cultural significance of retro computer and video game aesthetics as works of art. While music which explores these aesthetics is well represented by chiptune, the visual aspects of retro computer and video games are less commonly explored in new artworks. Secondly, it was hoped that by creating an enhancement for

existing video games, the games would retain their original compelling interest and appeal, allowing me to explore the addition of ASC effects in this context. To this end it should be noted that a significant aspect of this endeavour was maintaining the playability of the existing game, rather than creating an interactive experience abstracted from the original game. Since it was envisioned that perceptual distortions placed upon the graphical display would make the gameplay[23] more difficult, methods such as slowing down game speed were also considered as ways to maintain a balance of gameplay.

Influential Video Game Hacks

1. Street Fighter (an improvisational ballet).
The stimulus and precedent for *Quake Delirium* came from two similar projects already in existence. The first of these projects, by Yonatan Niv, Zachary Seldess and Andy Graydon, is entitled *Street Fighter (an improvisational ballet)*[24]. This project utilises a patch created in *Max/MSP/Jitter* software to process the video signal and game controller data of *Street Fighter 2*[25], outputting altered graphics and original audio. Control data received from the gamepads is used to trigger video processing, audio samples and sound processing algorithms. The result is a remix of the original game, which turns it into an abstract improvisational ballet pastiche in which the players control dancers instead of fighters. The software exploits the players' response to the integral timings and physics of the game, to create original music, resulting in an unusual juxtaposition of the game visuals with original audio. Figure 1 details the operation of the system as a flowchart[26].
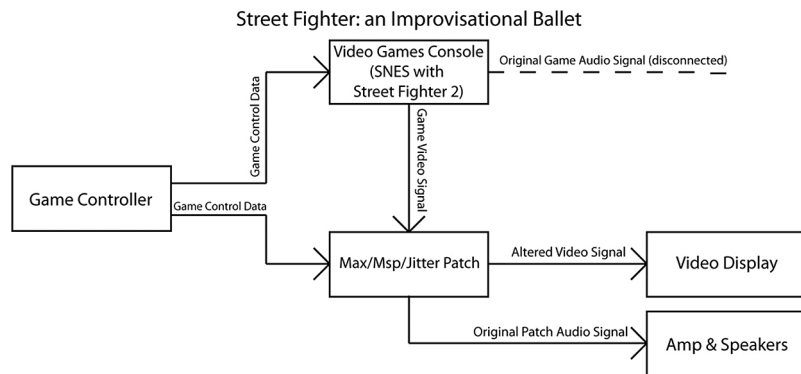
Fig. 1 Flowchart detailing the operation of the system in *Street Fighter (an improvisational ballet)*

---

[22] *Chiptune* refers to a genre of music based upon the synthesis techniques of computer and video game sound chips, or sounds which reflect this style aesthetically.

[23] 'Gameplay' refers to the players' interactive involvement with the game, and - particularly for this article - is used to describe the level of skill/difficulty experienced by the player.

[24] Yonatan Niv, Zachary Seldess and Andy Graydon. *Street Fighter (an improvisational ballet)*. 2006. http://www.zacharyseldess.com/works.html. Accessed: 9/4/2010.

[25] *Street Fighter 2*, Capcom, 1992. Super NES.

[26] Please note that while I believe the flowchart to be correct, I was unable to contact the author to verify its accuracy.

2. q3apd.

The second project of particular relevance is *q3apd*, by Julian Oliver and Steven Pickles[27]. This project is a modification for the game *Quake III Arena*[28], which allows the user to expose spatial information from the game environment within *Pure Data*, where it can be used in real-time as control data for sound synthesis. The demonstration video from the *q3apd* installation at the LoveBytes 2006 festival[29] shows the modification combined with a *Pure Data* patch which creates synthesised sounds and noises in accordance with game events and the spatial location of game entities. Figure 2 shows the *q3apd* system as a flowchart.
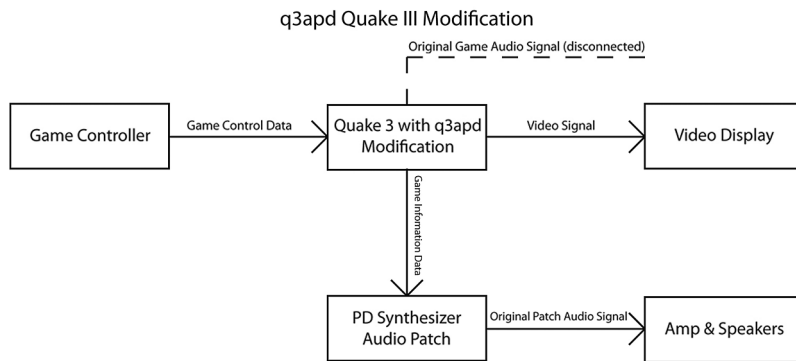

Fig. 2 Flowchart detailing the operation of the system in *q3apd*

Both projects demonstrate how software such as *Max/MSP* and *Pure Data* can be used to manipulate a video game to create an artistic reinterpretation or remix. The intention of my study was to use a similar approach to produce the ASC enhancement features described previously. Referring to the list of features for ASC enhancement in video games above, many of these effects can be achieved by graphical post-processing of the audio and video signals from the game. *Street Fighter (an improvisational ballet)* shows how this can be achieved with the video signal by using a *Max/MSP/Jitter* patch. In order to maintain a correspondence between the ASC effects and game events, the patch must also receive game information data in some way. *q3apd* shows how this can be achieved. However it should also be noted that some features from my list, such as slowing down or speeding up game speed, would require the addition of game information data being sent from the patch to the game to control such game parameters. This is not featured in either project. Adding this flow of game information data from the patch to the

video game was one of the ways in which I intended to advance the ideas of the *Street Fighter (an improvisational ballet)* and *q3apd.*

Universal Game Remix Device

1. Ideal model.

The original idea for this project was to produce a Universal Game Remix Device suitable for multiple video games and gaming systems, which would create an altered state of consciousness effect on many different games and games consoles. Figure 3 shows an idealised design for how the Universal Game Remix Device could theoretically work as a system. The Universal Game Remix Device would process the game audio and video signals. This would allow effects such as graphical and auditory perceptual distortions to be applied, enabling temporally the features for ASC enhancement in video games described previously. Additional graphical and audio artefacts could also be introduced from the device, by mixing original signals with those from the video game. This would allow original surrealistic or hallucinogenic visual patterns and sonic material to be introduced. A two-way flow of game information data between the Universal Game Remix Device and the video games console would facilitate effects such as changing game speed, in order to produce time distortion ASC effects and maintain balanced gameplay.
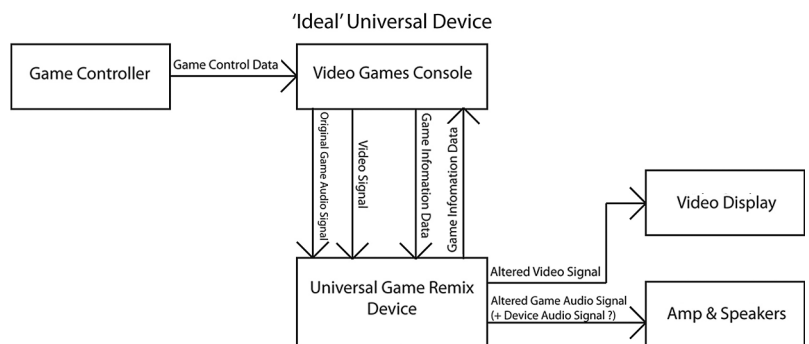
Fig. 3 Ideal Universal Game Remix Device

The idealised Universal Game Remix Device shown in figure 3 is technically problematic because it requires a flow of game information data from the device to the video games console. Without this feature, there is no way to control

---

27 Julian Oliver and Steven Pickles, *q3apd*, 2003. http://www.selectparks.net/archive/q3apd.htm. Accessed: 9/4/2010.

28 *Quake III Arena*, id Software, 1999. PC (Windows) CD-ROM.

29 High and low quality video links to the LoveBytes 2006 demonstration video of *q3apd* can be found at http://www.selectparks.net/~julian/q3apd/. Accessed: 9/4/2010.

integral aspects of the game such as game speed[30]. I propose that this flow could be provided by introducing a software protocol which would allow artists working with Max/MSP and Pure Data to create artistic manipulations and remixes of existing games. The equivalent would be *ReWire*[31] support for video games, or games consoles which support sending and receiving MIDI control data for certain game parameters, such as game speed. The hypothetical protocol could provide a common means by which video, audio and game data could be exchanged between the video game and external applications. In particular this would provide an accessible solution for visual and sonic artists to remix existing video games to create new interactive artworks. This would facilitate the introduction of ASC enhancements to video games, but would also have many other far-reaching possibilities. Although the ASC features I have described could be programmed into individual games, the software protocol which I propose would be advantageous because of its flexibility and accessibility for working with multiple video games.

2. Realistic model.

Since the idealised Universal Games Remix Device would be difficult to implement without the introduction of proposed software protocol described above, I created an alternative design which would be more feasible. Figure 4 shows the realistic design for a Universal Games Remix Device which could be constructed with available technology. This version of the device processes audio and video signals in real-time, to create the specified features of ASC enhancement which do not require changes to internal game parameters. Although this design has drawbacks when compared with the ideal system, it has the advantage of theoretical compatibility with any audio or video source.
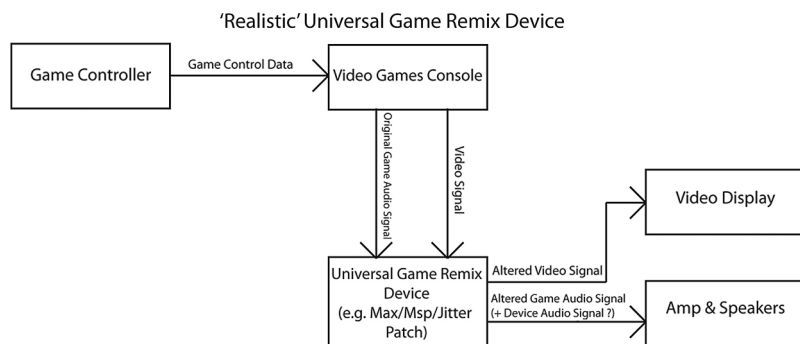
I began attempting to create this design in *Max/MSP/Jitter*. Unfortunately, I discovered very quickly that using the hardware available to me at the time, it was impossible to create the desired effects in real-time without latency problems and dropped frames occurring in the video. Precise timing is important in order to ensure that the video games remain playable. Therefore, the idea of creating a Universal Game Remix Device was abandoned for this study in favour of *Quake Delirium*, which would demonstrate many of the concepts discussed only in the case of a single video game. Nonetheless it can be noted that with improved technology in the future, it should be possible to construct the 'realistic' Universal Game Remix Device.

Quake Delirium

Quake Delirium is a proof of concept which demonstrates how an external patch can process an existing video game to create ASC enhancements. The patch shows how this can be achieved artistically by introducing temporal effects which can be remixed with a physical controller. Additionally, it shows how these can be implemented into a system by using a two-way flow of game information data, facilitating the control of game parameters from the patch.

I chose the game *Quake* since it offers a high level of internal customisation. The *Fitzquake* modification updates the game so that it can utilise the improved graphics and higher resolutions of modern computer graphics cards. There are several modifications similar to *Fitzquake* such as *Dark Places*[32] which were also trialled. *Fitzquake* was mainly chosen due to compatibility and useful *cvars*[33].

1. Two way flow of game information data. Figure 5 is a flowchart showing how *Quake Delirium* works as a system. Note that a two-way flow of game information data between the patch and the game was achieved. The patch receives game information data in text form from the game's log file (e.g. "entered level", "picked up health"). The patch then controls game parameters by sending virtual keystrokes which are mapped to *cvar* bindings to control parameters such as game

'Realistic' Universal Game Remix Device

Fig. 4 Realistic Universal Game Remix Device

[30] Note that there may be ways to hack a games console to create the effect of slowing down the game. For example some video games controllers have an automatic rapid fire pause on/off control, which can be used to slow the game down. Another way could be to control the internal clock rate of the console by circuit bending. Although methods like this could theoretically be used to adjust the game speed, they would most likely be inconsistent and qualitatively dissatisfactory.

[31] *ReWire* is a software protocol which enables multiple audio applications to work together. It facilitates control over timing and synchronisation, and the ability to send audio signals between applications. Typically there is a *ReWire* host which mixes the final audio signal, and a *ReWire* slave which sends audio signals to the host. Some aspects such as timing can be controlled from the host or the slave.

[32] *Dark Places*. http://icculus.org/twilight/darkplaces/. Accessed: 9/4/2010. *Dark Places* is a modification of the game *Quake* which improves the graphics and compatibility for use with modern computers.

[33] *cvars* are commands in *Quake* that can be used to change parameters during the game. These can include graphical features such as gamma or colour hue, and game features such as game speed or skill/difficulty.

speed or gamma. The *cvar* bindings are received and interpreted by the game in the way intended by introducing special *cfg*[34] files to the game directory. These methods are inelegant, but achieve a playable hack of the game to demonstrate the concepts discussed.
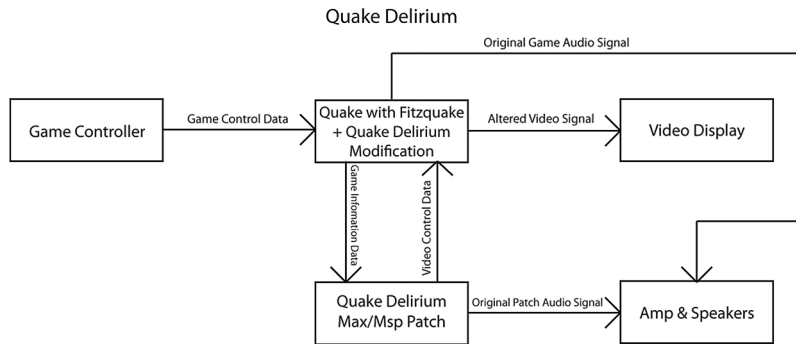
Quake Delirium

Fig. 5 *Quake Delirium* flowchart

Although the system shown in figure 5 is satisfactory, the main omission is the ability to process the original game audio signal in the patch. This is because there was no acceptable way to route the sound from the game through the patch in the same computer.[35]. Note that the general inelegance of the system implementation and the inability to route audio through the patch, are problems which could be solved with the proposed software protocol or *ReWire* equivalent which I suggested previously.

2. Temporal automation of ASC effects.

The user panel of the *Quake Delirium* patch is shown in figure 6. The central 'Quake Remix' device sends keystrokes to the game, which control its parameters. The relative values of each chosen game parameter are translated into slider and dial controls in the patch. A MIDI controller can be mapped to these controls. The following game parameters can then be controlled and mixed in real-time by moving physical sliders and dials:

1. FOV (field of vision).
2. Drunk Mode (causes the camera to sway drunkenly).
3. Fog Density/Colour.
4. Game Speed.
5. Stereo Vision (for red and blue 3D glasses)[36].
6. Gamma.
7. Red Hue.

By manipulating the sliders in real-time, temporal effects to elicit ASC enhancements can be achieved. An automation device allows the motion of the sliders to be recorded, saved,

loaded and replayed. Thus multiple automation tracks can be produced which create a sequence of temporal ASC enhancements when triggered. The principle is the same as that used in multi-track audio sequencing software to apply automation envelopes to audio clips, but is used here in the context of video game parameters. The automation example contained in the patch begins with gentle distortions of the image on screen and later progresses to extreme effects and heavily reduced game speed. This enables the 'delirium'[37] to onset slowly and gradually become more severe over time.

The 'Quake Log Reader' device receives information from the game. Any event which is recorded in the game's log file can be theoretically used to trigger a sequence in the patch. In the current version a trigger is sent to start the delirium automation whenever a player enters a level. If the player collects a health box, this will reset the automation effects. Since the automation causes the effects to onset gradually, this adds a compelling gameplay dynamic where the player can attempt to control the level of delirium by collecting or avoiding health boxes. The delirium automation restarts every time a new level begins, so it is possible to play through the entire game with the patch, adding a new level of interest to the gameplay and the ability to explore the ASC enhancements in many different parts of the game.

Finally, *Quake Delirium* also adds an original audio track. The audio track is a pre-recorded sound file which is created by mapping the motion of the sliders from the automation sequence to audio parameters which are used to process a pre-composed audio track. In this way corresponding audio and visual effects can occur in parallel. The resulting audio file is rendered for use in the patch with its corresponding automation track (real-time audio processing is not necessary, since the automation tracks are fixed). The rendered audio file can be played back in synchronisation with the game automation track to produce a matching soundtrack. In terms of sonic aesthetics, the soundtrack example in the patch features effects of noise and drone which are intended to reflect the ASC theme; for example, droning sounds reflect distorted time perception. The soundtrack builds gradually to match the automated sequence of the delirium, as the effects build to a hallucinogenic climax. The parallel audio and game parameter effects processing rendered on the final audio track helps to achieve this effect.

---

[34] *cfg* files are plain-text based configuration files which can contain operational instructions for the game, by setting *cvar* values (for example).

[35] Theoretically this could have been achieved by physically routing the audio output of the game to an audio input received in the patch, or by controlling an external sound processing device from the patch.

[36] The 'stereo vision' effect controls the degree of separation between left and right eye images in red and blue. Theoretically changing this value changes the level of three-dimensional depth perception. However, in practice the effect is quite subtle, and is used mainly as a visual blurring or 'double vision' effect.

[37] In the sense of altered states of consciousness enhancements.

Quake Delirium 1.3

File   Edit   View   Object   Arrange   Options   Debug   Extras   Window   Help

Control Surface 1 : Receives Midi Input (a) ch1.   MIDI INFO

1   2   3   4   5   6   7   8   9

QUAKE DELIRIUM 1.3

When checked picking up health resets the delirium

INFO

Quake Log Reader

Locate QConsole.log   Reset Counters

- You got the nails ▸0
- You got the shells ▸0
- You got the rockets ▸0
- You got receive 25 health ▸0
- You got receive 15 health ▸0
- You got the silver runekey ▸0
- You got the gold key ▸0
- You got the armor ▸0
- You get 5 shells ▸0
- You got 2 rockets ▸0
- You receive 100 health ▸0
- You found a secret area ▸0
- You got the Super Nailgun ▸0
- You got the Grenade Launcher ▸0
- Using protocol 666 ▸0
- All Heatlh ▸0
- All Ammo Boxes ▸0
- Patch Off ▸0

Quake Remix : sends direct input keystrokes.   Press 'm' to toggle keys on/off   ON/OFF

FOV | Drunk Mode | Fog | Game Speed | Stereo Vision | Gamma | Red Hue | Reset Trig

FOV: 50, Range 50, Level 0 — 1 2
Drunk Mode: Range 100, Level 0 — 3 4
Fog: 27, Range 27, Level 0 — 5 6
Game Speed: 10, Range 10, Level 0 — 9 0
Stereo Vision: Range 100, Level 0 — -   =
Gamma: 3, Range 20, Level 0 — ,   .
Red Hue: Range 18, Level 0 — [   ]
Reset Trig — /

MIDI INFO

Automation

Record
Start/Stop   Position ▸0
Playback
Start/Stop   Position ▸0
Load/Save
write   read

Audio Track

open   open preset audio track

Select a audio file to be played simultaneously when automation playback is in effect. Remember to switch on the ezdac~

dsp status

QUICK START!

1. To use this patch you need Quake and the Fitzquake 0.85 mod for Quake (http://www.celephais.net/fitzquake/). If you do not have either you should obtain and install these first.

2. You should copy the contents of the Quake Delirium folder into your Quake folder, ensuring the .cfg files go into Quake\ID1.

3. Ensure that the Quake Log Reader module can locate the qconsole.log file in Quake\ID1. The default location is C:\Quake\ID1\qconsole.log so if your Quake folder is elsewhere you need to click the 'Locate QConsole.log' button.

4. Click on the dsp status button in the Audio Track module to configure an audio driver and switch it on by clicking on the round ezdac~ button.

5. Run QuakeDelirium.cmd from the Quake folder to run the game.

6. Start a new game. Walk through the introduction level and select a skill. When you enter the first level of the game proper, the patch should start automation of visual effects and audio.

NOTE: The automatic starting of the delirium effects is currently unstable, therefore if the effects do no start automatically, you should return to the patch and check the Automation: Playback: Start/Stop Toggle switch then immediately return to the game.

TIP! For more information click the big 'INFO' button at the top.
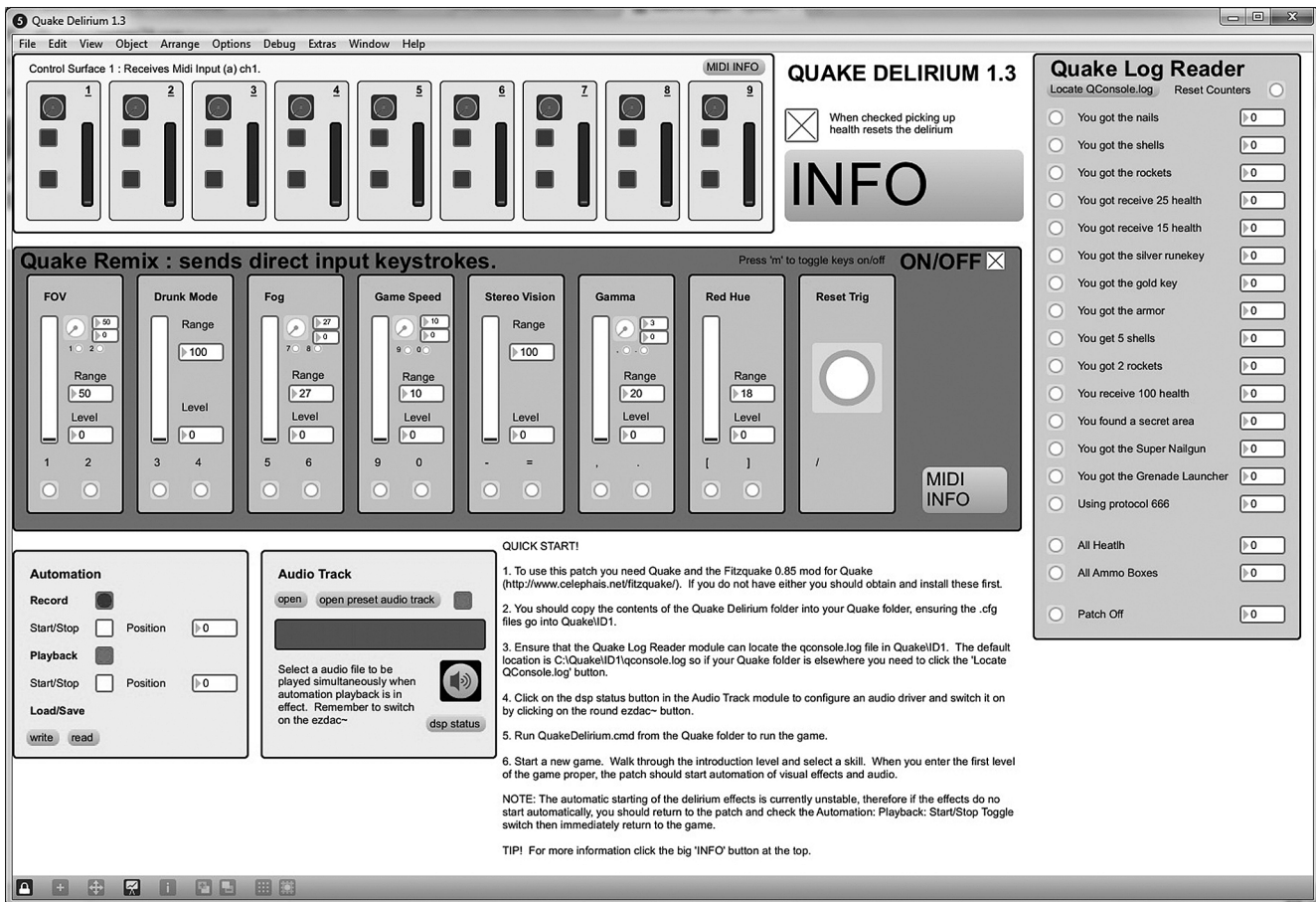
Fig. 6 The *Quake Delirium* patch

Conclusion

The *Quake Delirium* patch enables the player to experience a remixed version of the game *Quake* with temporal altered states of consciousness enhancements. In particular this was achieved with a two-way flow of game information data between the patch and *Quake*. The result is a highly playable and engaging version of *Quake* which adds a new and unique level to the existing gameplay. However, there are certain limitations to the project: due to the method in which it was constructed as a 'hack', the patch is complicated to set up and functionally unstable. The other major restriction of the design is that it can only make use of a limited selection of game parameters to produce the ASC enhancements. Many graphical effects which would have been beneficial such as blur, sharpen, contrast, glow or individual colour levels for RGB values are unavailable in *Fitzquake*. Post-processing the video signal (rather than controlling graphical parameters within the game engine) would have theoretically allowed effects such as these, though as discussed, these effects are too computationally intensive for real-time processing. In addition, many of the effects used (fog, game speed, stereo vision, FOV) could not have been achieved by post-processing the video signal. It can be considered that controlling graphical effects within the game engine is a more efficient method for achieving ASC enhancements, despite being more restrictive by making the patch less flexible and game specific.

Quake Delirium demonstrates the principle of applying these ASCs enhancements temporally to a video game on a more elaborate scale than many of the existing ASC games I surveyed. The principle of temporally shifting game perception could be explored at a much greater level in other video games and interactive artworks, particularly with more graphical and game effects at the artist's disposal. The idea could be applied to commercial games to make scenes such as the pharmaceutical pills/slow-motion effect in *Grand Theft Auto III* more interesting. However there are far more radical potentials in this idea than I have begun to explore with *Quake Delirium,* which could be of interest to artists working with interactive technology and virtual worlds outside of the commercial video games sphere. For instance, the approach I used demonstrates how a haptic remixing approach can be taken in order to introduce ASC enhancements, by means of a MIDI controller and approaches derived from audio composition techniques: this remix method could also be useful in other non-ASC scenarios, such as a real-time interactive artwork in which the composer/performer remixes the environmental features of a virtual world (controlling wind, rain, sun etc.) using a physical controller. In general, facilitating real-time manipulation

of parameters which are often static in video games could yield many interesting results.

The idea for the realistic Universal Game Remix Device could still be achieved, and concepts such as this will become more feasible as real-time video processing in hardware software improves. The potential to remix existing video games, and retro games in particular, could probably be achieved most viably with the design I outlined for a Universal Game Remix Device. As a way to implement ASC features upon outdated technology, creating the realistic Universal Game Remix Device is a possible solution.

The ideal Universal Game Remix Device could not be achieved without the development of new technology. The proposed invention of a software protocol equivalent to *ReWire*, to facilitate two-way flow of game information data and audio routing with multiple videos games, would create an accessible means for sonic and visual artists to remix existing games in order to add new ways of experiencing and enhancing them. Although this hypothetical software protocol would most likely be only applicable to future video games and interactive artworks (not retro games), the potential it offers would be the ability to remix ASC enhancements and other effects as demonstrated in *Quake Delirium*, but at a much deeper level. As a process for composing video games, or for reconfiguring them in real-time, the possibilities suggested by this approach are numerous and exciting.

References

Carroll L, 1992. *Alice's Adventures In Wonderland & Through The Looking Glass*. Wordsworth Editions Ltd (Ware, UK).

Schultes R E, Hoffman A, Ratsch C, 2001. *Plants of the Gods*. Healing Arts Press (Rochester, USA).

Games and Patches

American McGee's Alice, Electronic Arts, 2000. PC (Windows) CD-ROM.

Dark Places. http://icculus.org/twilight/darkplaces/. Accessed: 9/4/2010. *Dark Places* is a modification for the game *Quake* which improves the graphics and compatibility for use with modern computers.

Death Rally, Apogee, 1996. PC (DOS) CD-ROM.

Duke Nukem 3D, 3D Realms, 1996. PC (Windows) CD-ROM.

Fantasy World Dizzy, Codemasters, 1989. Atari ST.

Fitz J. *Fitzquake 0.85*. http://www.celephais.net/fitzquake/. Accessed: 9/4/2010. *Fitzquake* is a modification for the game *Quake* which improves the graphics and compatibility for use with modern computers.

Grand Theft Auto III, Rockstar Games, 2001. PC (Windows) CD-ROM.

Grand Theft Auto: Vice City, Rockstar Games, 2003. PC (Windows) CD-ROM.

LSD: Dream Emulator, Asmik Ace Entertainment, 1998. Playstation.

Niv Y, Seldess Z, Graydon A. *Street Fighter (an improvisational ballet)*. 2006. http://www.zacharyseldess.com/works.html. Accessed: 9/4/2010.

Oliver J, Pickles St. *q3apd*, 2003. http://www.selectparks.net/archive/q3apd.htm. Accessed: 9/4/2010. High and low quality video links to the LoveBytes 2006 demonstration video of *q3apd* can be found at http://www.selectparks.net/~julian/q3apd/. Accessed: 9/4/2010.

Space Giraffe, Llamasoft, 2008. Xbox 360 (XBLA).

Street Fighter 2, Capcom, 1992. Super NES.

Super Mario Brothers, Nintendo, 1987. Nintendo Entertainments System.

Super Mario World 2: Yoshi's Island, Nintendo, 1995. Super NES.

Trip-A-Tron, Llamasoft, 1988. Atari ST.

Quake, id Software, 1996. PC (Windows) CD-ROM.

Quake III Arena, id Software, 1999. PC (Windows) CD-ROM.

Weinel, J. *Quake Delirium*, 2010. High quality video demonstration and PC (Windows) software http://www.jonweinel.com/. Accessed: 9/4/2010. Cycling '74 Project 48: Quake Delirium http://cycling74.com/2010/03/03/project48-quake-delirium/ Low quality demonstration video http://www.youtube.com/watch?v=9ueXduUEMQM. Accessed: 9/4/2010.