

Cultural perceptions, ownership and interaction with re-purposed musical instruments

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ABSTRACT

This paper addresses the perceptions, ownership and interactions between users of re-purposed objects that now form musical instruments, how they are used, perceived and whether this owes anything to their original context. For the research specially designed software was created to mimic the performance of a musical instrument for use in a workshop setting. The software relies on groups of five or more players interacting together to perform music beyond that of simple experimentation and teach basic musicianship through the use of a familiar device. The initial workshop is to take place at The Box, FACT Liverpool on February 1st, 2010. Multiple questionnaires, audio and video recordings as well as interviews will be made to ascertain the effectiveness of the design.

Keywords

Musical instruments, musicianship, perception, interaction, ownership, toy, play, re-purposing.

INTRODUCTION

As a sound designer, musician and now what might be termed interdisciplinary artist, I am often creating new musical software on vintage computers such as the Commodore 64, BBC Micro and ZX Spectrum to create what is termed "chip tune" music. A large part of my work could be said to come under the heading of "re-purposing" or re-focussing" technology often taking a non-musical device or an device item with limited musical abilities and re-designing and accessing them as purely musical instrument.

In September 2009 Pixelh8 Music Tech Master Stroke was released on the Nintendo DS to the public, which allowed the user to utilise the Nintendo DS as a real time synthesizer, it featured an interface very similar to that of a "stylophone" with a generic piano keyboard layout accessed on the touch-screen. The software was vastly different to it's predecessors for two reasons; previous versions on the Nintendo Game Boy and Nintendo Game Boy Advance relied on the user pushing up, down, left, right on the bi-directional control pad to trigger off different notes and thus had no familiar "keyboard" layout (see Fig.1 & Fig.2).

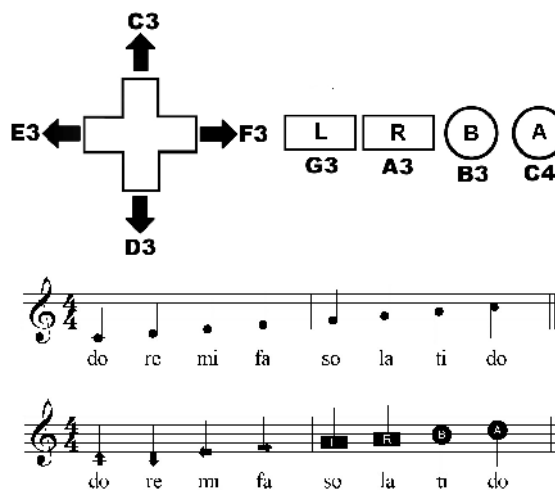


Fig 1. Pixelh8 Music Tech Nintendo Game Boy Bi-directional button configuration and notation

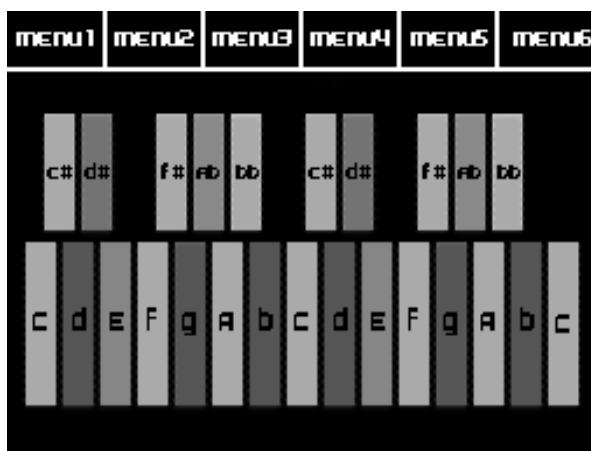


Fig 2. Pixelh8 Music Tech Master Stroke Touch-screen layout

Secondly the machine the software was running on was current and still commercially available, whereas the predecessors were for machines that were by and large accessed only by electronics music enthusiasts with a specific interest in chip tune music.

Prior to the public release of the software a presentation was given in a primary school about how different sounds and music are made, and some of the examples used the Nintendo DS with the Pixelh8 Music Tech Master Stroke music software running on it and some using a circuit bent keyboard. After a brief demonstration the students were asked aloud "who would like to have a go playing on the instruments?" and they all raised their hands. The teacher then asked them all to form an orderly line and they all did, in front of the Nintendo DS. After a few students had played on the DS it was asked if "anyone wants to play on the keyboard?", "anyone?" eventually one of the girls near the front piped up "no, I don't because I don't know how to play a piano". Which to me highlighted a very interesting situation, firstly it could be suggested that there was a cultural issue, of embarrassment, about not being able to perform as a "proper" musician especially not in front of others. Paradoxically they were quite happy to make sounds and draw attention to themselves by playing on the Nintendo DS through a very loud PA system, because the Nintendo DS had no set cultural rules in terms of musical performance.

From this there could be an argument made that these students at the age of 8 were making a cultural distinction that keyboards are for formal traditional music and only trained performers should play in front of others and the Nintendo DS was for fun with none of these set musical performance rules. Klöwer (1997) suggests that

"Most westerners find the thought of expressing themselves on an instrument without having learned to play it to be unimaginable, so music tends to be associated more with performance than with fun and playing, and as "non-musicians," we tend to experience performance anxiety when "confronted" with a musical instrument."

Although this was certainly not the only contributing factor to the children's preference to perform on the Nintendo DS, the girl's choice of words implied that she had interpreted the situation in this manner and further to this was confident in her belief to verbalise it.

"Our culture, and indeed our very language, makes a distinction between a class of expert performers- the Arthur Rubensteins, Ella Fitzgeralds, Paul McCartneys- and the rest of us. The rest of us pay money to hear the experts entertain us." Levitin (2006) later adds, "Nowadays there is a great emphasis on technique and skill, and whether a musician is "good enough" to play for others."

RATIONALE

Musical instruments are often regarded as requiring a significant level of skill to play, while this is true to "master" the instrument the number of hours being argued to be in the region of ten thousand Levitin (2006) & Gladwell (2008), an argument could be made that anyone with the mental and physical ability to hit a drum can produce a sound and turn in turn take part in the performance and creation music on some level a sentiment echoed by Klöwer.

"Sadly, I often hear people say, "I'm not musical." This is a tragedy because music is such a fundamental form of human expression. But there are truly no unmusical people." Klöwer (1997).

Most musical instruments are also largely associated with genres of music and in turn cultural groups that listen to them, a heavily distorted guitar would not seem out of place in rock or heavy metal but a glockenspiel would arguably have some difficulty fitting in with their generic conventions set up by that genre.

Opposing this it could be suggested that the ubiquitous drum is "genre-less" largely owing to its lengthy history; it is frequently used in most musical genres, as well as social, cultural, military and religious occasions and are among the worlds oldest musical instruments.

"Drums and sounding instruments-including gongs-have a special influence on listeners among all primitive peoples; they have always known and used drums to affect the body and the subconscious" Klöwer (1997).

Levitin also issues a similar response with regards to the directness of drums and rhythm affecting the emotions of both listeners and players on a neuro-scientific level in terms of its affect on the cerebellum for motor functions and amygdala for emotional response.

"Tapping along with music, either actually or just in your mind, involves the cerebellum's timing circuits...At a deeper level, the emotions we experience in response to music involves structures deep in the primitive, reptilian regions of the cerebellar vermis, and the amygdala-the heart of the emotional processing in the cortex. Levitin (2006)

Using these arguments that drums fall largely outside of genre constraints coupled with the concept they have a more direct "primordial" musical and emotional impact on the performer and listener, this informed the type of instrument that was created or "simulated" on the Nintendo DS for the research.

By becoming aware of cultural attitude between musical instrument and video game device, listener and performer, more workshops were designed utilising the Nintendo DS software to engage people musically. From simple experimentation sessions such as the one described above, to samba style groups and regularly meeting ensembles to perform more complex and longer pieces. Is it possible to engage people musically by the use of video game technology? Utilising game playing skills to generate musicianship? and go some way to removing these social constraints of musical performance under the guise of a familiar non-musical device such as a Nintendo DS. The Nintendo DS is a device that could be argued to have little or no associations with the performance of music and only some connections with the creation of chip tune and electronic music, but these associations are not as widely known as the traditional instruments that were mentioned above like the piano or guitar.

However cultural perception could be argued to be present in terms of the "ownership" of the Nintendo DS as a device. By ownership it is meant ownership through a culture as opposed to ownership as a physical thing by an individual. The marketing and the user base for the Nintendo DS system ranges from male to female, young and old, from celebrity to the "normal everyday" user. Nintendo have highlighted this general "acceptance" within their advertising campaigns and choice of gaming titles they release for it.

By having celebrities such as Ant & Dec challenging "everyday normal" people to competitions on games, male and female, young and old in a series of television advertisements and the heavy promotion of family orientated and group gaming. The removal of the word "boy" as in Game Boy and Game Boy advance from their previously successful hand-held line was arguably to do with the intended expansion of audience, as well as the choice of pastel colours for the devices instead of bright primary colours that its predecessors and original Nintendo DS range were attributed with.

The Nintendo DS as well as most video games consoles possess a very strong duality in terms of its commercial sale, as they tend to appear in both toy shops as well as general electronic goods shops. Two very different markets one arguably is aimed at children and the other adults. The video game consoles physically are electronic goods, but are played upon. The act of "play", is an act (Kane 2004) infers is in some cases viewed as a childish or frivolous unless it is being used to commodify an experience for adults, which arguably sits perfectly when viewing the Nintendo DS in relation to "playing".

The nature of the software that is available on the Nintendo DS is so wide ranging arguably it covers what Kane (2004) cites as Sutton-Smiths (1999) seven rhetorics of play. It encompasses play as "progress", "imagination", "selfhood", "power", "identity", "fate and chaos" and of course "frivolity". Both the children and adults are accessing the device for different reasons and the respective software aimed at them reflect this.

Games such as "Brain Training" and "Big Brain Academy" although are played by children as well as adults, the advertisements for which feature adults playing on them, a perfect example of "play as progress" and not the more childish "play as frivolity".

So it could be suggested that it is a both toy and electronic good, an electronic toy that is culturally safe to "play" on regardless of age.

"Children's toys are transitional objects; they play with them to develop and improve their relationship with the physical world, to increase their sense of mastery" Winnicott (1971) paraphrased in Kane (2004)

Viewing the object as a "toy" culturally would have allowed the group of school children to access it as an object without fear of ridicule. Was this another contributing factor? There is an argument the Nintendo DS is intended and possibly perceived as a video gaming device for all, with no set rules for live musical performance. With this in mind and interested to see what other cultural "boundaries" surround the use of a re-purposed Nintendo DS, for the research it was decided to create additional software that explored this area and exploited this concept, to allow the Nintendo DS to be seen as an "infinitely transitional toy".

METHODOLOGY

After a discussion with fellow Sonic Artist Ross Dalziel, the idea of larger groups using the software or similar software to perform with was suggested. Ross Dalziel set about creating the "DS Orchestra" based on my previously released software and for the purpose of this research it was decided to focus on the "Chip Tune Samba Band", which required two new pieces of software, one running on the Nintendo DS as the "instrument" and one on a PC or Mac for the "graphical music notation".



Fig 3. 'DS Orchestra' using Pixelh8 Music Tech Master Stroke Conducted by Ross Dalziel

Other systems such as the Wii, XBOX 360 and Playstation 3 were all experimenting successfully with "music sims" with high profile games and tie-ins with specific bands. Things like "Rock Band" (Electronic Arts 2007) and "Guitar Hero" (RedOctane 2005) based on the "Dance Dance Revolution" predecessors were asking users to simulate the playing of musical instruments with the game play loosely based on musical cues via the use of visual cues to inform the player. The purpose of the games to perform specific actions at specific times to complete the game via simulation of a musical instrument. Additional hardware was also created to mimic the appearance of Guitar, Bass and Drums to add to this stimulatory experience, they however were greatly reduced in complexity from their musical equivalent models only allowing a few possible outcomes, and were simply a re-packaged game controller.

By turning this concept on it's head a piece of software was designed that relied on the participants video game playing abilities with the end goal of creating and performing actual music. The muscle memory and hand eye coordination learnt from video game play would now be used to perform music note for note, not loosely simulate the performance of it.

The now "generic" visual cues from from the "music sims" will be mimicked, to allow the user a familiar entry point into the use of the software, however the layout will be more in common with musical notation with the entire "musical bar" being visible as opposed to the notes appearing on the games "horizon" and gradually getting nearer (See Fig. 4). The hardware will not be altered to appear as a music instrument, but remain without modification and therefore retain it's physicality as a device they recognise as the Nintendo DS.

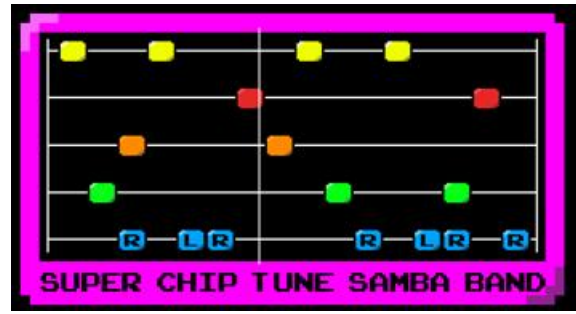


Fig 4. Pixelh8 Super Chip Tune Samba Band musical notation screen layout

Using drums and rhythm based music was the notion that was adopted to create the concept of "Super Chip Tune Samba Band", the software design allowed the user to hit anywhere on the screen of the Nintendo DS to create a single musical outcome, thereby lowering the complexity of using the software, the touch-screen of the Nintendo DS was now the head of a drum (See Fig. 5a & 5b).

Using purely drum sounds it took the playing / performance out of the context of existing genre based music sims such as "Rock Band" or "Guitar Hero" and their preconceptions in to a less familiar setting of "samba styled" music.



Fig 5a & 5b. Pixelh8 Super Chip Tune Samba Band instrument screen layout (Left when instrument is inactive, Right when the instrument is hit)

This figure shows the Caixa Drum / Red Drum

Samba music was chosen for three very specific reasons, one it is a style of music often performed in a large group and in this instance must be performed by a minimum of five, forcing the participants to perform in front of another person.

Secondly when musical parts are doubled i.e. the same part performed several performers it can often help mask mistakes and could help with individual players confidence to play, having another player to follow and can also in turn improve their own ability.

Thirdly it's use of multiple drum parts, allow each individual's part to be considerably easier to play in isolation, but in combination can create a complex and rich musical experience.

Five part musical pieces are created with the software and displayed visually for the group of performers/users to re-create in a performance publicly. The visual cues to inform the performer are simply coloured blocks that correspond to the "colour" of the drum they have chosen. An example of this is the Caixa drum is represented by the Red drum block and the Sirdu is represented by the yellow drum block, as the bar reaches the coloured blocks on the screen the performers tap the screen of the Nintendo DS. (See Appendices Fig. 5a & 5b). Instead of being rewarded by a "points" system for simulating a performance, the reward is performing the piece of music correctly.



Fig 3. "Super Chip Tune Samba Band Pilot Test"

A shortened "pilot" workshop was run with a local music group including two children aged 7, one 6 and one child aged 4. The participants were arguably able to engage musically at varying levels in the workshop, however during which it was decided for the visual cues to be altered.

Firstly the design originally had participants hit the drum when the line hit the middle of their relevant drum symbol much in the same way most "music sims" are played. However it was deemed much more accurate for the drums to be played at the beginning on the drum symbol similar to that of standard musical notation, and this was seen as more in keeping with the overall aim of the project.

Secondly the colours "orange" and "red" said to be "too similar" and required altering to make them more visually distinct from one another.

KEY DESIGN POINTS

- The machine a Nintendo DS is a current recognizable machine, not altered to give the appearance of being a musical instrument. The participants will likely to be familiar with the device.

- Both parts of the software are entirely new. The "musical notation" software is visually similar to other generic "music sim" layouts, however it shows the entire musical bar on the screen at once. Secondly notes are to be performed as the line crosses the start of the drum symbol, both choices make the "music notation" software more comparable to standard music notation.

- All drums have the same musical note length value allowing ease of understanding the visual cues.

- The "instrument software" is simplistic and only has one or two outcomes to allow for ease of use and comprehension.

- All drums have a corresponding primary colour linking the musical notation software and the instrument together.

- The musical parts are arguably simple individually but allow for complexity when combined together, are designed to impart confidence in performing both as an individual and highlight the importance of working together as a group.

- The musical style is dependent on multiple people to playing together in front of one another. Therefore the software and workshop's design primary goal is to encourage participation in group music and teach basic musicianship.

CONCLUSION

The initial workshop is yet to take place at The Box, FACT Liverpool on February 1st, 2010 with additional workshops taking place throughout 2010. The conclusion will be updated with regards to any outcomes from these events.

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