
Game art: theory, communities, resources

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Published: 09/18/2007 - 13:30

[Tom Betts](#) , September 2007

Like all digital media, video-games can be designed, produced, deconstructed and re-appropriated within the context of art. Even though the history of video-games is relatively short, it is already rich with examples of artistic experimentation and innovation. Unlike film or video, games still represent a fairly immature medium, slowly evolving to locate itself in mainstream culture. The majority of games often present simplistic or crude visions of interactivity, narrative and aesthetics, but the medium offers unique potential for the creation of exciting new forms of art. Like any digital medium the evolution of art/games is closely tied to the development of software, hardware and the socio-cultural forms that grow around this technology.

In broad terms there are two general approaches by which artists interface with gaming culture and technology. They can either modify existing games/games systems to produce work ranging from small variations to total conversions. Or they can code their own work from scratch. Of course there are blurred margins between these two practices, in some cases a modification becomes totally independent, or a new code engine may borrow from an existing system.

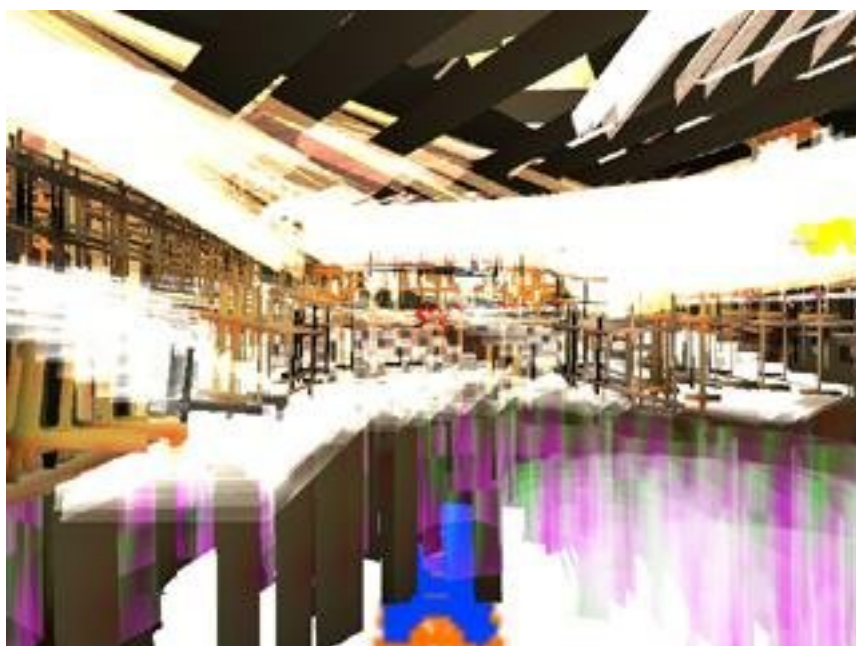
Modification

Modifying existing game systems is usually easier than programming your own, especially now that game modification is an encouraged part of many product life cycles. Games are frequently produced with modification tools included and developers strive to promote a community of amateur 'add on' designers and 'mapmakers'.

Early game modification grew out of the culture of hacking. In the 8bit era [\[41\]](#) many magazines would publish 'pokes', cheat codes that directly altered the memory locations of a running game to increase the players chances of winning (extra lives etc). It became common to add graffiti-like 'tags' to loading screens or even alter the graphics within the game itself (as is still obvious in the 'warez' community today [\[42\]](#)). Although often requiring arcane machine code knowledge a few intrepid coders re-wrote levels from popular games and made other conversions and modifications to

commercial software. While most of these interventions were little more than novelties, some successful conversions highlighted the advantages of an open ended game engine [\[45\]](#) where modification was possible if not encouraged. Soon developers and publishers realised that a stream of modifications could greatly extend the shelf life of a product and in many cases act as free beta testing for subsequent iterations of a series. The most prominent early expression of this was with the Doom/Quake series of games where modifications and tools became widespread.

At this stage it became easy to identify three different types of game modification: Resource Hacking, Code editing and Map/Texture making. Resource hacking is the method closest to original hacking , in this case the user modifies aspects of the program without the use of any publisher-provided tools or code. The second method involves the developers policy to release source code for the game (either for 'add ons' or total conversions. However to make use of such code releases often requires substantial programming skills. ID software (the developers of quake/doom) are one of the few companies that release source code to the public. The final method focuses on using official (and unofficial) tools to manipulate the game content and game play. The third area of practice involves much less technical prowess than the previous two and is increasing in popularity with both mod-makers and developers.



qqq by nullpointer

Due to the increasing range of software tools to aid modification and the support for modding by the industry, a large number of artistic projects have followed this path. Notable works include: JODI's minimalist modification of Wolfenstein (SOD) [\[1\]](#) , The psychedelic Acid Arena project [\[2\]](#) , Langlands and Bell's Turner prize nominated The House of Osama bin Laden [\[3\]](#) , Retroyou's abstraction of the open source X-Plane engine Nostalg [\[4\]](#) , nullpointer's network/performance mod of quake3 QQQ [\[5\]](#)

, the NPR quake [\[6\]](#) modification from quake1 source code, UK artist Alison Mealey's UnrealArt [\[17\]](#), and many more.



Jake by Alison Mealey

Some artists approach the idea of modification in a more social context, disrupting game systems with more interventionist approaches. These modifications are often more time based and performative. The Velvet Strike [\[7\]](#) project introduced the idea of an anti-war graffiti protest into CounterStrike, Joseph Delappe [\[8\]](#) has performed readings of war poetry within multiplayer death match environments, and both RSG [\[9\]](#) and Lars Zumbansen [\[10\]](#) have investigated various 'prepared controller' [43] type setups.

This form of performance (within the game) is closely aligned with the growing machinima movement. In machinima productions game software is used to set, script and record in-game movies. Although prominently used as a cheap but hip film making process (see Red vs Blue [\[11\]](#)), machinima can be a powerful tool to present artistic ideas to a passive audience (see This Spartan Life [\[12\]](#) - Mckenzie Wark)

Games modification can also incorporate hardware hacking. Eddo Stern's Fort Paladin [\[13\]](#) has a PC pressing its own keys in order to control a confused American's Army recruit, the Painstation project and the Tekken Torture [\[15\]](#) events punish the player with physical injury when they lose a game, and Cory Arcangel [\[16\]](#) has produced a series of re-written Super NES [\[40\]](#) cartridges where he has radically altered Super Mario World [\[44\]](#).

Extensive modification can sometimes take the designers/artists so far from the original game engine that the project becomes a Total Conversion (TC). At this point people often consider the work as an independent game-object rather than a direct modification. Artists collective C-Level used heavily modified game engines and content to produce Waco Resurrection [\[18\]](#), a fully playable game, allowing the player to enter a hyper real re-enactment of the Texas Waco siege.

Outside modification / Developing Independently

Although modification provides a relatively easy path in terms of learning curve and software, it can be limiting for certain projects. If artists/programmers require more power or control they can either use existing software engines as a basis for development or they can code their own from scratch. Due to the higher level of skills/resources needed to do this (mainstream games developers often have multi-million budgets and 100+ staff), large projects based on original code are less frequent than modifications. However, rather than pursuing high end technological ambitions, independent developers tend to have more success working with simpler technology.

Working with introductory level systems like Java applets or Flash movies has allowed artists to produce relatively big impact projects. Flow [\[19\]](#), is an abstract game-environment written by Jenova Chen, SodaPlay [\[20\]](#) is a sandbox physics game by Soda, Samarost [\[21\]](#) is a twisted fairytale adventure, The Endless Forest [\[22\]](#) is a whimsical multiplayer space and N [\[23\]](#) is a minimalist platform game by Metanet. All of these projects have received significant praise despite (and because of) their opposition to mainstream gaming. In some cases these independent projects have broken through to mainstream consoles (Flow [\[19\]](#), Braid [\[24\]](#), Everyday Shooter [\[25\]](#)).



Spring Alpha by Simon Yuill

Artists with access to larger teams and resources can produce larger projects that move closer to using the same production model as the mainstream. These works can spread over longer timescales and involve complex iterations. The `spring_alpha` [\[26\]](#) project, directed by Simon Yuill is a project using gaming to explore forms of social organisation. Based on the drawings of artist Chad McCail and the unusual dystopia/utopia we see in the Sims, Spring Alpha has evolved into a number of side-projects and FLOSS developments.

Within mainstream publishing a small minority of titles are often upheld as representing the 'art' side of the industry. Games like *Rez*, *Ico* and *Okami* are frequently cited for their atmospheric environments and abstract aesthetics, *Metal Gear Solid 2* is upheld as a postmodern remix and sandbox gaming project, promoted by the Sims, that has led to the current growth and popularity of content/community systems such as *Second Life*.

Resources

Although still a niche area of practice there are a few notable resources that are well worth investigating in order to learn more about game-art. *Selectparks* [\[27\]](#) is a collaborative blog and archive for discussing and promoting game art activities. It has a substantial collection of articles and news items and also hosts several artists projects. Based in Australia, the *Selectparks* team often have some influence on *FreePlay* [\[28\]](#) a Melbourne based games conference/festival that concentrates on independent and creative development of games culture. Aside from these organisations several influential exhibitions are worth mentioning. *Cracking the Maze* [\[29\]](#) was probably the first example of a solely game themed art show. *Games* [\[30\]](#), an exhibition in Dortmund was a particularly large collection of game based artwork. More recently the *Gameworld* [\[31\]](#) exhibition at Laboral in Spain attempted to mix mainstream innovation with artistic statements and

gamer culture.

Perhaps more than any other forms of digital art, games based art has the benefit, and sometimes barrier, of a strong existing gamer community. This is the place you are most likely to find up to date help, criticism and examples on all aspects of game design and production. Developer/Player blogs and forums often host heated debates and criticism, such discussion is vital for a medium that is slowly adopting more mature forms and content. The Escapist [33] is a weekly e-zine that covers the more thought provoking aspects of gaming culture. Play this Thing [34] is a games review blog that focuses on fringe gaming genres or controversial titles. Gamasutra [46] is a site devoted to both industry articles and critical commentary. Experimentalgameplay.com [32] is a site dedicated to prototyping innovative game ideas in short time frames. From a more production based approach sites like NeHe [36] and GameDev [37] provide links to information on programming in C or 3D, whereas Processing [38] and GotoandPlay() [39] introduce novice programmers to working with java and flash. As with all programming, observing and deconstructing other projects is a great way to train your own skills, luckily most programmers are more than happy to compare notes and offer advice via the forums attached to the above sites.

One crucial piece of advice is to start simple and have achievable goals. Producing or modifying games can be a difficult and time consuming task. It's wise not to be overambitious in your designs and consider the scale of existing art projects that have used similar technology. It is also important to consider how your final work can be distributed or presented as different technologies will require different hardware. Aside from these issues games provide a vast range of expressive forms for creating art and are one of the cheapest ways to access cutting edge technology and distribution.

Notes

[1] <http://sod.jodi.org>

[2] <http://acidarenaweb.free.fr>

[3] <http://www.langlandsandbell.demon.co.uk/obl01.html>

[4] http://nostalg.org/nostalg_pw.html

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- [5] <http://www.nullpointer.co.uk/qgg>
- [6] <http://www.cs.wisc.edu/graphics/Gallery/NPRQuake>
- [7] <http://www.opensorcery.net/velvet-strike>
- [8] <http://www.delappe.net>
- [9] <http://r-s-g.org>
- [10] http://www.hartware-projekte.de/programm/inhalt/games_file_e/work_e.htm#...
- [11] <http://rvb.roosterteeth.com/home.php>
- [12] <http://www.thisspartanlife.com/episodes.php?id=4>
- [13] <http://www.eddostern.com>
- [14] <http://www.painstation.de>

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- [15] <http://www.c-level.cc/tekken1.html>
- [16] <http://www.beigerecords.com/cory/tags/artwork>
- [17] <http://www.unrealart.co.uk>
- [18] <http://waco.c-level.cc/>
- [19] <http://intihuatani.usc.edu/cloud/flowing>
- [20] <http://sodaplay.com>
- [21] <http://www.amanita-design.net/samorost-1>
- [22] <http://www.tale-of-tales.com/TheEndlessForest>
- [23] <http://www.harveycartel.org/metanet/downloads.html>
- [24] <http://braid-game.com/news>

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- [25] <http://www.everydayshooter.com>
- [26] <http://www.spring-alpha.org>
- [27] <http://www.selectparks.net>
- [28] <http://www.nextwave.org.au>
- [29] <http://switch.sjsu.edu/CrackingtheMaze>
- [30] http://www.hartware-projekte.de/programm/inhalt/games_e.htm
- [31] <http://www.laboralcentrodearte.org/portal.do?TR=C&IDR=105>
- [32] <http://www.experimentalgameplay.com>
- [33] <http://www.escapistmagazine.com>
- [34] <http://playthisthing.com>

[35] <http://www.gamasutra.com>

[36] <http://nehe.gamedev.net>

[37] <http://www.gamedev.net>

[38] <http://www.processing.org>

[39] <http://www.gotoandplay.it>

[40] Super Nintendo Entertainment System or Super NES is a 16-bit video game console that was released by Nintendo in North America, Europe, Australasia, and Brazil between 1990 and 1993.

[41] 8 bit era refers to the third generation of video game consoles. Although the previous generation of consoles had also used 8-bit processors, it was in this time that home game systems were first labeled by their "bits". This came into fashion as 16-bit systems were marketed to differentiate between the generations of consoles.

[42] The warez community is a community of groups releasing illegal copies of software, also referred to as 'the Scene'

[43] Prepared controllers are video game input devices such as game pads and joysticks that have been modified, by for instance locking certain buttons or rewiring them.

[44] Super Mario World is a platform game developed and published by Nintendo.

[45] A game engine forms the core of a computer video game. It provides all underlying technologies, including the rendering engine for 2D or 3D graphics, a physics engine or collision detection, sound, scripting, animation, artificial intelligence, networking, streaming, memory management, threading, and a scene graph.

[46] Gamasutra <http://www.gamasutra.com>

Images

[1] qqg by nullpointer, image courtesy of the artist

[2] Jake by Alison Mealey, image courtesy of the artist

[3] Spring Alpha by Simon Yuill

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