Big Huggin'
A Case Study in Affection Gaming

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ABSTRACT

Big Huggin' is a game designed for use with a custom teddy bear controller. Players complete the game by providing several well-timed hugs to a 30 inch teddy bear. It is an experiment and gesture in alternative interface and affection gaming. The game is designed around the action of hugging to support an onscreen character. If the players hug too much, their on screen bear will suffer. If they hug too little the player character will never reach its goal.

This paper outlines the design, development and evaluation of the game by a wide demographic. The first section provides an outline of the history of affection gaming, providing the theoretical basis for the design of Big Huggin'. The second section describes the development, prototyping and pre-release of the game. The final section outlines the release to a community of pediatric patients and general play audience. The application of this game as a resource to promote pro-social exploration by players is addressed.

The goal of this research is not merely to create an alternative play experience. It is envisioned as an opportunity to explore and critique the intersection of play and affection as practiced in digital games. This paper serves as an introduction to the history of such games, a case study and a post-mortem in the design and development of an affection game.

Keywords
Affection games, hugging games, critical play, critical design, arcade games

BACKGROUND AND DESIGN THEORY

The midway was a fascinating place to play. Players could test their strength with a hammer and even pay for a kiss. The midway was a place that couples traveled on energizing walks searching for exotic experiences. In the Brouws and Caron's chronicle of the carnival midways, they write "the midway offers still more, opening up a discourse of dangerous emotions" (2001).

Modern digital game history's origins are often described as a product of the midway. The midway, an area of sideshows, games, feats of strength, skill, magic, and prognostications preceded the din of the video arcade and set many of its standards. The midway was a place to see and be seen and a place of doing (Cross and Walton, 2005). In popular culture the tradition of winning a prize at the midway is a hallmark of the experience (Brouws and Caron, 2001). Most often, this prize was a stuffed animal whose

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size was proportionate to the skill and strength of the winner. The common cinematic image is of a person winning a giant stuffed animal for their love. That stuffed animal is then lavished with attention and affection as it is carried from game to game. The act of winning the stuffed animal for someone else is also perceived as affection. The prize is both trophy and testament to skill.

The games of the midway were designed for tactile appeal as well as visual and aural attraction. As the first digital games were placed on the midway, the interfaces replicated the object or situation of the game, providing players with submarine periscopes (Sea Raider 1970), toy guns (Sega Sea Devil) and other related controls. The fiction of the play was situated by the physical interface and propelled by the visual and aural experience.

As the video arcade grew in popularity the standardization of the interfaces became more common. Hard to maintain, game specific interfaces were replaced for the more fiscally prudent, easily repaired and re-skinnable standards of joysticks and buttons. Player activity was mapped to button presses and analog movements. Players moved, punched, kicked, and jumped using specific buttons. A few novelties in physical interface persisted, most notably in driving games, flight simulation and rail shooting games. The Need for Speed (Electronic Arts 2005) franchise and House of the Dead (Sega 1996) are examples of long running games with specific interfaces who's physicality is an essential draw to play. A distinct arcade outlier exists in Taff System's Boong-Ga Boon-Ga (Brown, 2008), a game in which the player is tasked with simulated spanking and kancho (sticking two fingers toward the victim's anus). The arcade installation consists of an artificial human posterior and a plastic finger as interface.

One distinctly absent draw was affection. Where players on a midway might win a stuffed animal, video arcades offered few equivalents. Physical skill games such as Skee-Ball (1935) provided prizes via tickets, but few video games provided more than the ability to leave the player's name on a high score screen. While it may be practical that digital video games failed to offer such prizes or opportunities for affection, it is a notably absent part of the more modern play experience.

The Critical Gameplay project aims to take note of these design decisions and highlight alternate paths in design. It is an ongoing creative exhibition designed to demonstrate pro-social alternatives to game design. The games are designed as art experiences to be contextualized as reference to game design history. The ten games in the collection are each designed to provide pointed critique on a consistent, multi-game design assumption. The design assumptions were often popularized in the past, but perpetuated into the present. Such assumptions include the notion that obstacles must be destroyed to be eliminated or that players are satisfied with the conventional game verbs of move, shoot, jump, and collect. The point of critique that motivated design of Big Huggin' includes the following observations:

- There is a relative absence of affection as primary game action in digital game play spaces

- The tactile experience of digital play is most often hard and sterile, instead of soft and unique

Besides investigating the various forms of tactility in play, it's also important to ask questions about the expression of affection in games. There are several online games in which players hug or kiss as part of the game goal. Many of these games are designed around one button play. Most commonly in these affection games players are awarded points for well-timed kisses. Will You Marry Me (Slix Media 2010) and Unicorn Miracle (Spil Games 2013) are examples of such affection play.

There are also a few interfaces that experiment with affection mediated interfaces. The Kiss Controller, for example, requires players to kiss through an electro-mechanical interface to accommodate game needs (Nam and DiSalvo 2010). Likewise Musical Embrace (Huggard, De Mel et al 2013) rewards players for two-player hugging during a game. The fundamental design difference between these approaches is that neither aims to couple player action with in-game results. In one variation of the Kiss Controller, for example, players must kiss to drive a car or bowl. In Musical Embrace, players move through a 3D space by hugging and tilting an intervening pillow. In the author's own words, the game is designed to investigate social awkwardness through facilitation.

While both interfaces are novel and do involve some degree of affection, they also evoke unclear mappings between player action, affection, and in-game result. In both examples, which were produced after the Critical Gameplay project, the in game verbs are not directly mapped to player goal. The relationship to kissing and propelling a motor vehicle does not seem to be affection. In both games, the games' themes and subjects are not matched to player interface and game activity.

It is important to note that cultures vary in their affection expression and frequency. It is clear that some groups have no interest in hugging or playing, but it's also important to note the importance of such practiced affection. Beyond facilitating a sense of connectedness, affection provides physiological benefit (Gerhardt 2006). While it has been demonstrated by zealous anti-violence researchers that violent experiences in games can create psychological changes in behavior, few researchers have asked the opposite question. Can repeated affection positively effect players? To ask such questions, researchers need an implemented game to test.

The goal of the game is not merely to make a kinder, gently play experience. It is, as all of the Critical Gameplay project games, also critical. There is an important discomfort in the notion of loving an inanimate object. Players love their console, they love their computers, they love their peripherals, their homes and their cars. They love their objects, sometimes at the expense of others. It is fair there is something potentially juvenile about this type of love and its expression. Many people can envision the toddler who clutches lovingly to a blanket or a stuffed animal. Part of maturing is the moment when that object is no longer loved; it is merely understood as yet another object in an increasingly complex world.

Games are often designed to bring players to halcyon days. For some players that's the mythology of elves and wizards. For others it's the linear simplicity of kill or be killed. The Big Huggin' game is designed to remind players of the days when they could clutch an object and feel better. The scale of the teddy bear interface is designed to be usable by children, but proportionate for adults. Players are supposed to feel as they did when they were children. It is designed as a reminder of a time when clutching a 10 inch bear was a third of your body. At 30" the bear is better proportioned for someone over 5 feet than under 3 feet tall.

The game is designed for adults to bring them halcyon memories, and for children to help them develop their own fond play memories. As asked in previous publications about Big Huggin', why have children clutch toy guns or drive cars, when they can hug? Hugging is an affectionate expression that is shared between family, romantic interest, and friends. When someone does something great, they are more often rewarded with a hug than a kiss. Consider the end of a marathon or miners saved from a closed mine shaft, more hugs than kisses await both.

Like the theme in a prior Critical Gameplay Game, Levity (2011), the player is rewarded not only for hugging the object of affection, but also for releasing it. This is partly related to the mechanics of a good hug, which is neither too long nor too short. It is also related to the notion of supporting the bear. Players are punished for hugging the bear too long and rewarded for hugging often. The concept is that too much support is suffocating, too little support is isolating. The design positions the player to perceive their role similar to a parent's. Players need to know when to offer their support. The best players foresee the obstacle and hug before the bear even encounters it. The worst players hug the bear with such force or for so long that the player character never gets much chance to walk on his own. Points are given when the player hugs and taken when the player hugs for too long.

The value in such investigations is simple. As sociologists admit, how a society plays can say a lot about it (Sutton-Smith 1961). Producing games that give voice to play minorities or that bring in pro-social elements add value. They remind players of those missing spaces between what they are playing and what they want to play. They demonstrate potentials to inform future designs. They offer critique. They also remind player and audience that the boredom that inevitably arises from doing the same things over and over again doesn't have to be. As players mature, their play also matures. As game communities grow, and digital games become a more integrated part of the everyday it's important to take note of the untapped potentials in play.

DESIGN AND DEVELOPMENT

The final design of Big Huggin' is shown in figure 1. This game system is comprised of two basic parts, a digital computer game and 30" stuffed animal as controller. The first is an on screen platform scrolling game whose player character is a teddy bear. The player character constantly moves forward until it encounters a rock, snow, earth, bricks, a hole, river or fire. It stops at rocks, snow, earth, and bricks. If the character falls into a hole, river or fire the game level restarts. The player is given three restarts per game and 3 minutes per level.

Figure 1: The Big Huggin' game levels and players. The controller is shown at adult scale (top) and toddler scale (bottom).

The player controls the player character by hugging the stuffed animal controller. The controller senses 12 degrees of pressure, allowing the player to give a variety of hugs. The game software also tracks the length of the hug, allowing players to vary their hugs from soft, quick pats to a long, hard squeezes. Every hug lifts the bear past an obstacle.

In the first three levels, the player moves through a verdant, space, hopping over rocks, skipping through rivers and avoiding holes. In levels 4 and 5, the player must make it through a cold, snowy landscape where an occasional quick pat helps the bear trudge through heavy snow. The player character must also surmount snow banks and avoid falling into holes. In the final stage (levels 6 and 7), the player must move through a basement with fire and stone.

When the player successfully completes a level the player character dances. During this time players have a 20 second period to give the player character one large hug for extra points. When the player completes the game they can watch the bear dance for 2 minutes on a fireworks laden end screen.

Design Constraints

Big Huggin' was designed under the same constraints as the eight previously published Critical Gameplay games. Each game is designed and implemented in 5 days or less as a method for limiting scope and clarifying focus. They are also designed and developed by one person, who also creates or acquires assets from the public domain.

This design approach is informed by the practices of game jams which typically produce small, high risk games that are distinct from other independent game productions. In particular this limited production approach is contrary to AAA console development and design which employs large teams and longer development cycles with high costs. Although this process was first adopted in 2009 for the first Critical Gameplay project, it is important to note that early mobile developers have adopted similar design tactics (Padir 2013).

The approach offers developers the opportunity to test audience reception with low investment and determine which types of designs resonate. As mentioned it also allows for high risk design concepts, as the cost of development is limited to short sprints and low dollars. This approach is common to the weekly theme inspired Experimental Gameplay Project (2013) which has continued for several years. This process is somewhat distinct from both iterative development and scrum. The former expects developers to revise their final product iteratively; the latter is designed around teams and expects goals to change.

The process employed for Critical Gameplay projects requires a single unchanging goal, predefined game mechanics and a single developer. Projects are also not allowed to undergo any significant changes once the project is completed in the 5 day period. These last two elements enforce rigor and focus which theoretically prevent the games from moving toward a conventional center.

Themes

The design for Big Huggin' had three themes as motivation. First, affection should be a practiced behavior in games. Second, the game must tightly couple affection to player character goals. Third, affection is not a competition. In short, the game is designed to demonstrate that affection-based game verbs can be fun and satisfying.

To meet these criteria, the game could not stray far from other conventions in game design. As witnessed in previous Critical Gameplay project games, player response to substantial derivation from play norms frustrates players. While the frustration can be useful in offering critique of player expectations, it would not support the points of critique embedded in Big Huggin'.

The game takes several common cultural motifs. The player character is a stuffed bear, a common child's toy. The player hugs the stuffed bear to help him rise above his obstacles. The idiom "rise above" commonly refers to ignoring petty nuisances or to surmounting obstacles without being distracted by them. In the game, the player character does not confront the obstacles, they simply rise above them.

If even the most basic casual games are perceived as teaching tools (Prensky) or practice spaces the way games encourage players to resolve conflict is an important point of critique. The common game design offers players an obstacle and a means to overcoming that obstacle. The means is often elimination of the obstacle, as is common to both shooting games and collecting games (i.e. player must collect specific number of items to proceed). Other games provide means for preventing the obstacle from achieving their goals, as in the common instruction set, stop the enemy from getting to its destination. These types of goal-defending games are common to defense games, like Tower Defense (Scott 2007) or Plants vs. Zombies (Pop Cap 2009).

Other types of conflict resolution include avoidance, which is distinct from Big Huggin'. In this game players have no choice, they are compelled or propelled toward their obstacle. All they can do is rise above it. The obstacle is unavoidable. This setup also helps players avoid a sense of blame to adversaries. Physical obstacles do not intend to thwart goals, they simply are. A player can't logically be angry at a rock for preventing their success, as the rock is merely an environmental prop. Instead, the hope is, players look toward themselves and understand their obstacles as facts, not characters, to be handled. This supports the aim to prevent the game from feeling competitive – there are

no non-player characters in the game. Admittedly, a score is provided as a means of conveying a sense of progress, but players have demonstrated a tendency to compare their score to other players.

The player must release the bear from the hug to avoid hugging to long. The goal was to encourage players to understand proper affection. The game is not designed as a test of squeeze strength. Instead it designed to reward the skill of hugging. Players loose points if they hug too hard and for too long.

Prototype Evolution

The game is in its third iteration. The first version of the game used a standard sized pillow and a Microsoft Xbox controller as a sensor. This version was simply designed to test feasibility and experience informally.

The following version used a highly modified Logitech USB game controller inside a bear created by WMDreamz. The controller casing was drilled and extended as shown in figure 2. The second iteration was designed to provide more sensitive hugging. The extensions increased touch sensitivity and provided for more sensitive interaction. The extensions were wrapped in cloth to insulate them from shock. This particular design proved too fragile for practical use. In public display, the controller was broken after two days of use.

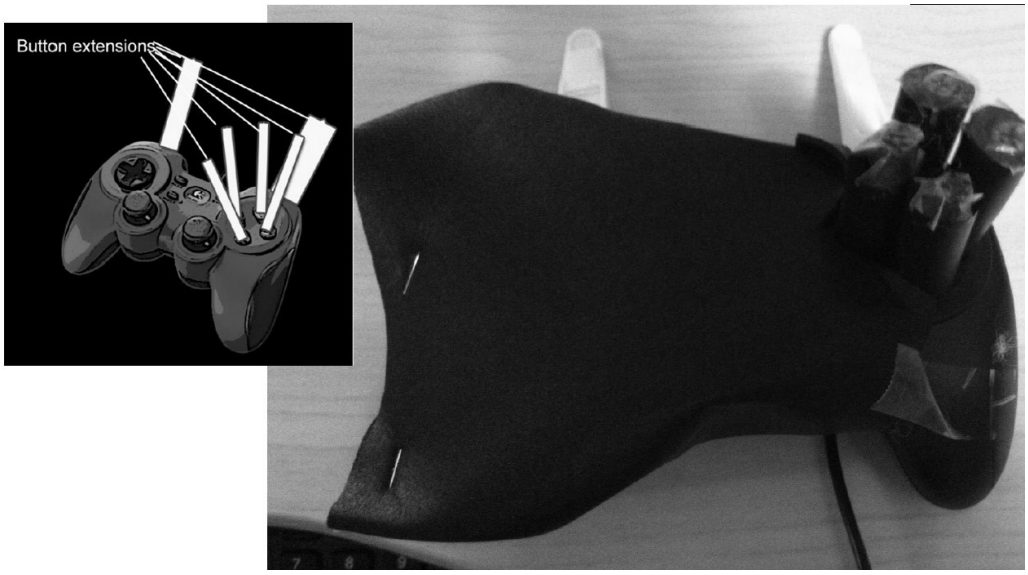

Figure 2: Images of the second prototype controller modifications which proved too fragile for prolonged use.

The final version uses foam baffles without extensions. In its final iteration a single bear can be used more than 1000 times without modification or correction.

DISTRIBUTION

The game has been distributed two ways. First it has been provided to art exhibits, game showcases and academic events through juried exhibition and blind beer review. The

game has been provided to play audiences at more than 10 venues on 3 continents. A table of the venues and their locations is provided in table 1.

Art Venues and Showcases where the game has been played		
Venue Name	Location	Reported Venue Attendees
Artscape 2013	Baltimore, Maryland, USA	300,000
Gameplay Festival @ The Brick Theater	Brooklyn, New York, USA	200
31st ACM SIGCHI Conference on Human Factors in Computing Systems (CHI13)	Paris, France	3000
Computer Arts Congress	Paris, France	100
Meaningful Play Games Showcase	East Lansing, Michigan, USA	250
Punk Arcade	Philadelphia, PA	200
Electronic Language International Festival	Sao Paulo, Brazil	2000
Artscape 2012	Baltimore, MD	300,000
Games Learning and Society Art Exhibit	Madison, WI	250

Table 1: Venues at which Big Huggin' has been shown, sorted by date. Reported venue attendees reflect organizer's reported total attendance. Big Huggin' players can be estimated at a minimum of 10% of total attendance for large venues, and 40% for small venues.

Demographics of players varied widely at these venues allowing for useful feedback in design. The widest audience was provided at Artscape's game showcase. The venue is the largest free arts festival in the United States. Players ranged from 2 to 60 years old and had very different levels of interest and experience with digital games.

Admittedly it would have been useful to collect formal player data via surveys but the rules for these venues do not support controlled study. Players were asked to complete an online evaluation of the game at both CHI2013 in Paris and Artscape in Baltimore. Less than 10 surveys were completed so no meaningful data was collected.

The game has also been provided to children in a pediatric office waiting room in preparation for distribution in hospitals. The game was placed in the sick children partitions and provided to any patient interested in playing. To mitigate the spread of germs, the bear was sprayed with an aerosol disinfectant between players. This has also been the standard practice at large venues. The 2 hour pediatric play session provided an informal opportunity to understand children's response to the design and collect observations around level design and interest.

All informal feedback from players has been positive, but admittedly informal. Although future investigations will provide for more controlled study of the game the primary goal of this project is merely to remind players and game designers of other play potentials. As such, requesting user feedback via the conventional human-computer interaction user analysis could be as awkward as polling for user feedback at an art exhibit.

CONCLUSION

As the 9th game in the Critical Gameplay collection, Big Huggin's goal is to remind designers and players of the missed opportunity in a return to tactility and affection in games. Borrowing from the tradition of large stuffed animals at the midway and the evolution of affection gaming, the project aims to propel such gameplay into

contemporary dialogue in play design. This paper serves as a design post-mortem, explaining the motivation, theory and development of the game.

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