# Games Analysis – How to stop history repeating itself

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*Abstract: -*

"History repeated itself
It had to no-one listened"

Steve Turner

It is a sad reflection on life that all our experiences still lead to the same circle of mistakes; this was never truer than in the games industry as a whole.  Designers struggle to achieve what is called the *"Triple-A (AAA)"* game, the game that will be the new *Pac-man* and earn them accolades and a fortune before they reach thirty.

One of the main problems is that each new game design follows a design route seemingly ignoring any of the lessons learned from the design of its predecessors.  Discussions with a number of design groups at the Games Development Conference in 2004 revealed that understanding exactly what makes a *triple-A* game is based on a post-mortem review of its success or failure.  Whilst this may well appear at first glance to be an analysis of the successes and failures of the offering, it is rather a nodding account of how much money the game made and how popular (how many units sold).

Academic papers on games analysis focus mainly on specific areas such as Narratology, Behavioural Design or workshops on the newest techniques etc.  Serious games have now become a popular approach to the use of games in education, training etc, however, there does not seem to be an overall treatise on how to analyse a game in general terms or why one would want to.

The topic of this paper is to attempt to produce a framework where a success or fail criteria can be employed in order to gain stored knowledge of successes and failures in modern games.  Two approaches are postulated and sample analysis case studies are presented.  It is hoped that the development of these frameworks will lead to a better understanding of what works and what does not in order to shorten the design process and to enable time to be spent more on innovations rather than the basic functions.

*Key-Words: -* Games Analysis, Triple-A, Narratology, Methodology, Usability, Behavioural Design

## 1   Introduction

Analysis of games can be couched in a number of approaches i.e. Narratology, Behavioural, Usability etc.  Each of these fields have been addressed by academics in a number of domain specific topics [1,2,3,4,5, 6] , but the would appear to be a dearth of general "How to do it for the designer" approaches which current game designers could utilise in order to identify possible sources of success or failure in their latest design.

As such anecdotal evidence and discussions with current design groups highlight the lack of any real analysis carried out by the design group before re-designing the interface to a game or developing a sequel to a successful game or even a new design based on their own 3-D engine e.g. Quake, Half-Life, Unreal, Doom etc.  This leads to errors in the final release which at best mars the game players experience and at worst renders the game unplayable.

Some authors have sought to develop better games design based on methodological approaches [7,8], whilst other have sought to highlight newer considerations such as emotionality [9]

This paper is an attempt to generalise analysis approaches in order to gain an insight into what makes a successful game and provide a starting point for the production of a tool-set for the designers to better appreciate possible pitfalls and errors in games design.

## 2    Current Analysis Approaches

An overview of existing analysis techniques would prove useful in the discussion of suitable approaches; Aarseth [7], argues that it is both too early and too late to develop an approach to games analysis, although he goes on to point out that as it is a core topic in the "Curriculum Framework" proposed by the International Game Developers Association (IGDA) namely "Game Criticism, Analysis & History".

He goes on to argue that until Konzacks work [8] there was no real attempt to produce a framework for games analysis. Although he points out that this paper does show the "many-sided complex media machines that computer games are" Aarseth argues for a three pronged approach to computer games analysis;

- o   Study of the design, rules and mechanics of the game (insofar as they are available)
- o   Observation of others at play or by reading reviews or reports
- o   Play the game ourselves

Konzack [8] in 2002 has argued that a seven layer analysis scheme proves useful and successful i.e.

- o   Hardware
- o   Program Code
- o   Functionality
- o   Game play
- o   Meaning
- o   Referentiality
- o   Soci-culture

He goes on to argue that "An entire analysis of any computer game must be analysed from every angle. Thereby we are analysing both technical, aesthetic and socio-cultural perspectives"

### 2.1 Problems with the Konzack approach
There are a number of problems when attempting to adapt this approach to modern day games analysis i.e.

#### 2.1.1 Hardware
Analysis of the hardware according to Konzack is essential, however he goes on to argue that as he isn't an electronics engineer he leaves this as a comment only

#### 2.1.2 Program Code
He argues that program code is an essential part of the analysis, however as we are unlikely to gain access to the source code and this particular layer then becomes impossible to determine

#### 2.1.3 Academic Complexity
Konzack presents an academic overview which relies on such topics as Semiotics in order to determine the semantic meaning of the game, he goes on to argue that although there should be a study of narratology, this is secondary to the game itself. This view is somewhat supported with other views for example Frasca [10] who argues that although games share much in common with narratives, they are in fact simulations and as such a different set of semiotic rules apply.

In short whilst both of these more recent approaches to games analysis show some merit it is in the opinion of the authors unlikely that they could develop into a usable tool-set.

## 3    Proposed Analysis Frameworks
Ideally we would like to produce a games analysis tool-set which would be reproducible across the game genres in order to have a "Crank the handle" approach to game development i.e.

### 3.1 Basic Technique approach
In order to break down the process of games analysis it is necessary to consider what the basic elements within any game are i.e.

- o   Interactivity
- o   Graphics
- o   Game Play
- o   Environment
- o   Hardware

To utilize these elements the following approach could be adopted:

- o   Identify what makes successful Game Play
- o   Identify what navigation Systems work
- o   Identify what challenges are too difficult or too easy
- o   Identify what it is that makes a killer game
- o   Take those elements and produce a design framework
- o   Use those elements to design our Game
- o   Analyse if this game works or not
- o   Crank the handle and reap the cash

However it can clearly be seen that this is an ideal circumstance rather than a workable framework. As yet there is no single methodology which would rate easy game production.  Given the foregoing arguments and discussions the following can be deduced;

The following elements are considered the foundations of successful games across all platforms and provide a means for evaluating specific games by drawing attention to each separately rather than simply assessing their commercial success.

## 3.2 C.U.P Methodology

The first methodology to consider is that of C.U.P.

*C.   U.*
   *P.*

*Get these right and the "cup" is yours*

- o   Concept
- o   Challenge
- o   Usability
- o   Presentation

### 3.2.1 Concept
The concept can be defined as the elements of the interactive experience that engage the user's attention.   However it must be taken into consideration that the diverse preferences of users attract them to different types of games.  Although certain themes dominate the market, originality of concepts within popular thematic categories or new variations of previously successful concepts differentiates the most appealing games.

As related technologies advance, many digital games are becoming increasingly immersive evoking emotional reactions on the basis of interaction with realistic characters.

This sophisticated conceptual approach utilizes players' understanding of human behavioural dynamics, engaging players in a more profound manner than ever before.   Ideally therefore the designer should aim at an original concept which utilizes the behavioural dynamics in an engaging environment.

### 3.2.2 Challenge
Fundamental to inspiring repeat play is the level of challenge a game offers.   Players must make decisions in order to outwit the application itself, or better yet one or more human opponents, whether in the context of rapid interaction or a slower, more strategic one.   In some cases this is achieved with algorithms that create a new interaction for each game such that increase in winning percentage occurs as players' skills evolve.

Even more effective are games that incrementally increase the level of challenge such that the game itself evolves in concert with the skills of each gamer.

Multiplayer games are exploding in popularity because the level of challenge increases with the availability of numerous diverse opponents.   This activates and magnifies the fundamental human motivation to win, a modern day manifestation of the principle "survival of the fittest"

### 3.2.3 Usability
This element represents the ease with which gamers can execute their part of the interaction.   This includes both device and application usability issues.

An engaging concept and evolving challenges are useless if the gamer cannot learn the procedural aspects of game play relatively easily in order to control the interaction.

### 3.2.4 Presentation

Albeit superficial presentation is integral to the effectiveness of a game. Visual presentation, including from choice of colours to graphical style and audio elements, to a great extent determine the degree to which the concept and interaction design set the tome of the game.

Presentation elements exert critical effect on a game's ability to elicit the desired reactions and long-term interest.

Game designers must understand the constraints of the medium and develop creative techniques for maximizing presentation quality.

### 3.2.5 Is this enough?

The *CUP* methodology while being all encompassing may well focus too generally on aspects which would be better analysed individually. As such although useful as a starting point for a discussion of success in or failure in game design it is considered too broad to prove useful.

## 3.3 BAN-SHEEP Methodology

Possibly a more realistic methodology can be covered by the BAN-SHEEP approach i.e.

*BAN-SHEEP*



*Remove Woolly Ideals*

- o  Behavioural Aspects
- o  Narratology – Story
- o  Hardware
- o  Enjoyment
- o  Environment-Practicality

### 3.3.1 Behavioural Aspects

Despite being thought otherwise, gamers are in the main human beings, as such they are all subject to behavioural aspects of our nature. They all want to win… They hate waiting… etc. The same aspects are true in games; If the game becomes boring a player won't continue playing, if the game becomes repetitive or too hard or too difficult they will move to a different game of find a cheat code.

It is possible then to analyses this effect in the game i.e.

- o  are the levels too difficult (equates back to challenge),
- o  how often do weapons re-spawn
- o  Where are the Save games located in the story
- o  Where are the health kegs
- o  How do we upgrade etc…

If the game fails to meet what a normal player would expect it is a flaw and may lead to a pitfall in the success of the game.

### 3.3.2 Narratology

With the advent of the newer multiplayer games and with 3D environments improving exponentially, storylines become more important. There is a need to engage the game player using an interesting and imaginative story. If this is at a successful level the player will even download enhancements or "mods" in order to see how the story continues.

Again we can analyse the narrative even in the simplest sense i.e.

- o  Does the story make sense
- o  Is it self-consistent
- o  Do the sequels actually work

If this is deemed to be a significant element within the game we wish to either produce or analyse we could move to a deeper level of narrative analysis such as that proposed by Propp, Barthez and others described in an earlier paper [14]

### 3.3.3 Hardware

As mentioned earlier in this paper it is impractical to ascertain the exact nature of the hardware electronics, but it is possible to test the minimum specification as stated on the games documentation. Equally it is possible to analyse the game in terms of adaptability to changes in hardware or whether or not it makes use of specialist feature such as the latest graphics chip sets for example.

### 3.3.4 Environment-Practicality

Here the focus of the analysis steps outside the actual game itself and looks at more practical issues i.e.

Does the game work in our environment, a game player may well be in an office whilst playing the

game. Obviously in this circumstance a voice activated interface would be unsuccessful. Although it is somewhat impossible to have access to the full details of every likely environmental situation, it is never-the-less possible to simulate the majority of them and analyse how the game survives.

### 3.3.5 Enjoyment

It doesn't matter how well the game addresses all of the other issues mentioned in the analysis if the player does not "enjoy" the game they won't play it. In HCI (Human Computer Interaction) terms this would be defined as the User Experience.

This is usually measured or analysed in two facets i.e.

- o Functionality – Interface Design
- o User testing

In terms of functionality of the interface it is a case of considering the interface in terms of usability heuristic principles such as; Does the game apply consistent interface design. We can utilize well established analysis techniques such as Hierarchical Task Analysis (HTA) to analyse game dynamics etc.

User testing is an under rated, under used approach in the authors opinion. Forum group discussions and general anecdotal evidence highlights that as in traditional software engineering, games designers pay little or no attention to the requirements of their users until the game is at least at the demo stage.

In general terms this seems careless to say the least, it would benefit the whole of the games design industry if they took a more pragmatic approach to design and involved their user base from the outset.

Indeed it has shown that analyzing user interaction with games highlight their own views on success and failure which is invaluable in future designs.

## 4   Final Thoughts

Although these approaches postulated are in their infancy, there is much which can be discovered by their implementation and use. Research is ongoing to identify more pragmatic and reproducible tools sets in order to identify "good" or "successful" games.

In the opinion of the authors it is an essential component of designing any game or gaming system

to review what has gone before in order to identify the minefields and pitfalls which too easily snare the designers and create a disaster which could more easily have been avoided.

This paper has sought to discuss possible elements of a methodology for games analysis and has not sought to focus on any particular game genre or approach. Indeed if history is to be prevented from repeating itself, some form of historical analysis is essential.

## 5   Conclusions

1. Games Analysis is still in its infancy in Modern Games
2. There is currently no recognized standard methodology for games analysis
3. Given the drive towards accreditation of Games Design degrees games analysis approaches are becoming more necessary
4. Two possible approaches to games analysis have been presented
5. Of the two methodologies BAN-SHEEP appears to have more merit due to its granularity
6. Work is still ongoing to identify a standard methodological approach for games analysis
7. In the authors opinion games analysis is a fundamental step in any good games design

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