

Triggers: A Method of Controlling Player Interest Levels in Single Player Linear FPS games

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Abstract

This study is an effort towards the realization of a practical methodology of controlling player interest levels in single player linear FPS games. We measured player brain waves to find where most players showed high interest levels. By analyzing these situations, we identified 6 triggers that cause player interest levels to rise: “Anticipation”, “Surprise”, “Concentration”, “Frustration”, “Overwhelm” and “Fear”. We developed a test FPS level to validate these triggers, and found that test subject interest levels indeed rose as expected.

1 Introduction

Traditional single player first person shooter (FPS) games adopt a generally linear level design. Players are not given much choice as to where to go next, and thus it is paramount that the designer is able to keep the player interested throughout the whole level. It is widely accepted that in order to keep the player’s interest, it is important to offer the player a varied gaming experience by presenting high interest and low interest encounters in an alternating fashion.

In response to this, Schell [Schell, 2005] proposed the idea of interest curves, where the designer intentionally manipulates the player’s interest level by alternating high interest and low interest encounters, creating an interesting gaming experience. While he goes into detail regarding the significance of alternating high and low interest encounters, he does not explain clearly how interest levels can actually be controlled.

Our goal is to create a better understanding on how to design encounters that affect interest levels in linear FPS games. By analyzing interest levels in existing games, we aim to discover what factors affect interest levels, and to construct a structural framework for designing encounters that affect interest levels.

2 Methodology

We developed a method for measuring and comparing player interest levels based on electroencephalogram (EEG) data retrieved using a “Neurosky Mindset” [Chan et. al, 2010].

We measured the attention levels of 7 healthy adults, all with previous experience playing FPS games, while they played through the tutorial and first 4 levels of the campaign mode of Call of Duty: Modern Warfare 2 (Infinity Ward, 2010). We identified points where interest levels in each test subject suddenly spiked during gameplay and associated these points with specific moments in-game by referring to the respective gameplay videos. Points in-game where most players showed a rise in interest levels were further analyzed to find similarities.

3 Six Triggers of Interest

Through situational analysis of the points of high common interest between players, we were able to identify 6 different triggers that cause a player’s interest levels to rise:

Anticipation: Waiting for a predicted event, in favor of the player, to occur

Surprise: Sudden and dramatic change in situation, forcing player to adapt

Concentration: Concentrating on a completing a certain task

Frustration: When the outcome of the player’s actions is different from expected

Overwhelm: Player is given a challenge greater than expected or able to handle

Fear: When player feels impending failure, or when failure becomes inevitable

4 Testing the Validity of Triggers

To test the validity of the six triggers, we developed a map designed using said triggers, and tested whether test subjects’ interest levels rose as intended. We used the map editor Source SDK (Valve) to develop a linear, single player FPS game map.

Test results show that test subject interest levels were high across the board whenever triggers were active. An example of this is shown in Fig. 1. This suggests that triggers are indeed an effective method of manipulating player interest levels.

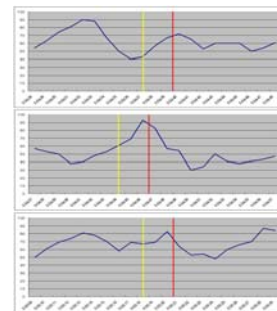


Fig. 1: A comparison of interest levels between 3 test subjects during the anticipation trigger. The yellow line shows the moment when the test subjects threw a grenade, and the red line when it detonates and defeats multiple enemies. A clear rise in attention levels is visible while the test subject waits for the explosion.

6 Conclusion and Future Work

In this study, we were able to identify 6 triggers that increase player interest levels during gameplay. Furthermore, by developing a test game level using these triggers, we were able to confirm that whenever triggers are properly designed and activated during gameplay, they are an effective method of raising the player’s interest levels. Using our method, a game designer is able purposely manipulate the player’s interest levels, thus making it possible to make practical use of Schell’s concept of interest curves.

The next step is to investigate the relationship between triggers and player opinions, as well as the validity of the 6 proposed triggers with regard to games of different genres and styles.

References

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