

# The Study of the Relations between the *BrainHex* Player Profiles, MBTI Psychological Types and Emotions as Means to Enhance User Experience

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**Abstract.** This paper, firstly, develops the *BrainHex* player profiles into a more robust set, enriched by the psychological characteristics of the MBTI system. The characteristics of each one of the seven profiles was directly compared and contrasted with the characteristics of each one of the sixteen personality types. Those that have more in common were grouped together, resulting in what has been called “expanded profiles”.

Secondly, the most relevant emotions in games are related to the expanded profiles, evidencing which one have more influence over each one of the seven expanded profiles.

The result is a complex tool that can be used by developers to get acquainted with their costumers, and also to design better user experience for players and, consequently, more appealing games.

**Keywords:** Games, MBTI, Psychological Types, Player Profiles, Emotions, User Experience.

## 1 Introduction

Nowadays, in the game development industry, the importance of knowing the audience for which a given game will be produced has become more and more obvious, as is considering that audience’s preferences when designing the game, or, more precisely, the game experience [1-6] [8] [10] [12-14] [16].

Many authors have developed studies trying to accomplish the task of assembling a concise and applicable model for gaming audiences [1] [2] [16], but these studies demand more research and attention [2]. Considering that, a proposal to map relations among MBTI<sup>1</sup> psychological types [7, 15], *BrainHex* player profiles [5, 6, 8, 12, 14] and the most relevant game-related emotions [3, 11, 13] is presented here.

Aiming to theoretically demonstrate that it is possible to parallelly study the player’s interests specifically in games and their psychological characteristics and preferences, as well as the relations of those characteristics with the most relevant emotions considered in the gameplay experience, an expanded player satisfaction

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<sup>1</sup> Myers-Briggs Type Indicator.

model based on the current *BrainHex* model has been developed, adding up the psychological characteristics of the MBTI type theory and, finally, relating them to those emotions.

The resultant model is supposed to be used by game developers as a mean to study and design better gaming experiences, considering the player profiles' in-game reward preferences and their psychological traits and characteristics when making experience design decisions.

## 2 Literary Review

### 2.1 Games

Mankind has developed many different forms of expressing itself in society. Some are more straightforward, as the verbal language and the writing, and some are more abstract as the artistic and creative expressions like music and visual arts [19].

Chris Crawford states that “game” is a complex concept to define [18]. The author begins his definition with the basics of creative expression, decomposing the term with questions, until finally reaching an acceptable concept for “games”: Games would be *a creative expression intended to amuse, interactive and competitive, with defined goals and active participation of the user (player)* [18]. Simplifying this definition in a shorter sentence, it is possible to consider games as *fun with defined goals and structure*.

### 2.2 *BrainHex* Player Profiles

*BrainHex* is a demographic audience model developed in 2009 [5, 6, 8, 12, 14] based on and as an evolution of other attempts to develop a satisfaction model of the players [1, 10, 16]. It consists of the following seven profiles with different characteristics and preferences: Seeker, Achiever, Conqueror, Mastermind, Socializer, Daredevil and Survivor.

Each profile describes how the players tend to play, what motivates them, what are their expectations as for the game and what kind of dynamics and results pleases them. For the purpose of this paper, not only the original *BrainHex* profiles are considered, but also the reward system contribution [8]. The seven player profiles and their main characteristics are the following:

**Mastermind.** This profile enjoys solving puzzles that defy solutions or problems that require strategy to overcome, and focuses on making the most efficient decisions. They also like devising strategies. This profile prefers *Conquest, Learning, and Discovery* as rewards [8].

**Achiever.** This is a Goal-oriented profile, motivated by long-term achievements. The Achiever-style play is rooted in ‘ticking boxes’, being ultimately obsessive in its

focus. The players in this profile love to collect things and usually play games for the ultimate completion. This profile prefers *Improvement*, *Learning*, *Expression* and *Discovery* as rewards [8].

**Conqueror.** This profile is mainly challenge-oriented. The players in this profile enjoy defeating impossibly difficult foes, struggling until they eventually achieve victory. They are persistent, focusing their anger as means of motivation. This profile prefers *Conquest*, *Learning* and *Improvement* as rewards [8].

**Seeker.** Profile motivated by interest mechanisms. These players are usually very observant, enjoying richly interpretable patterns and sensorial stimuli. Curious, they enjoy moments of wonder and discovery, as well as finding new things, places, patterns and other means to satiate their curiosity. This profile prefers *Drama*, *Contemplation*, *Fantasy* and *Discovery* as rewards [8].

**Survivor.** This profile is pleased by the intensity of the terror-associated experience. The players in this profile like to escape from threat, enjoying felling scarred and later relieved. This profile prefers *Drama*, *Fantasy* and *Discovery* as rewards [8].

**Socializer.** These players are focused mostly on people, enjoying talking to them, helping and hanging around with people they trust. Players whose preference for play fit this pattern tend to be trusting, and they get angry at those who abuse their trust. This profile prefers *Social Interaction*, *Fantasy*, *Drama* and *Expression* as rewards [8].

**Daredevil.** This is profile is all about the thrill of the chase, the excitement of risk-taking and generally playing on the edge. Those whose play style fit this profile love navigating dizzying platforms or rushing around at high speeds while still (barely) in control. This profile prefers *Conquest*, *Expression* and *Fantasy* as rewards [8].

### 2.3 MBTI – Myers-Briggs Type Indicator

The MBTI (Myers-Briggs Type Indicator) is a psychological model for personality types [7] [15]. This classification is based on Jung's classic personality model [17], which consists in three dichotomies to classify human personality: Sensing ↔ Intuitive, Introvert ↔ Extravert and Thinking ↔ Feeling. Myers and Briggs expanded this model adding a fourth dichotomy: Judging ↔ Perceiving. The combination of these four dichotomies (taking one aspect from each pair) composes all the sixteen personality types (Fig. 1). Each one of the sixteen types implies peculiar characteristics to a person about their preferences, choices and ways they prefer to analyse and perceive the world [7] [15].

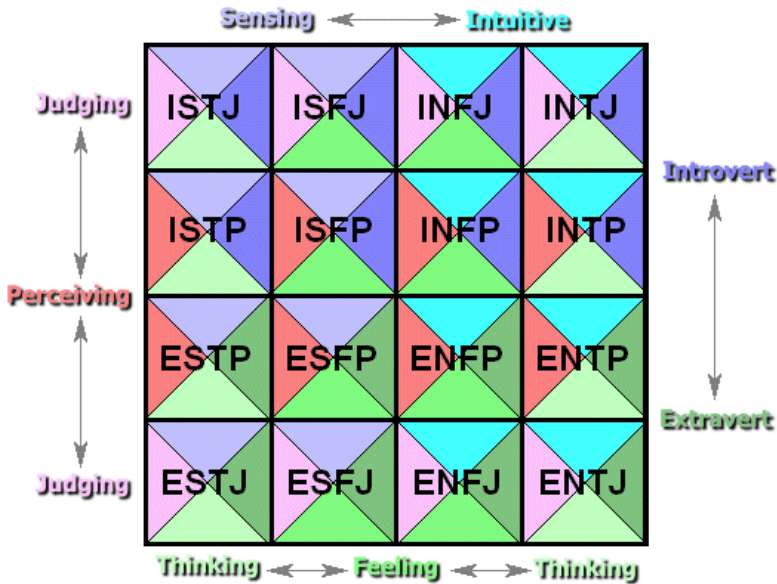


Fig. 1. MBTI Psychological Types [7] [15]

## 2.4 Emotions

Emotions have an important role in any game, and it is important for Game Designers to understand predicting how the game will affect player emotions [11]. In this paper, emotions are considered as '*internal sensations that occur in relationship to pursuing a goal*', definition used by psychologists to separate emotions from other internal sensations such as hunger or pain [11]. Lazzaro states that emotions have five distinct roles in increasing player engagement [11]:

- *Enjoyment* – Players usually enjoy the sensations that emotions are able to create;
- *Focus Attention* – Emotions focus the attention. Walking in a narrow passage over boiling lava capture players' attention more than a boring sidewalk;
- *Decision Making* – Emotions help the decision making process. It is faster to decide what to do when facing a life threat;
- *Performance* – Negative emotions facilitate some repetitive behaviour while positive emotions inspire creative problem solving;
- *Learning* – Games are teachers and they reward and motivate learning with intense emotions.

**Game-Relevant Emotions.** The emotions pointed by the bibliography as the most relevant for games are [3] [11] [13]:

- *Relief*: Emotion of being released from a physical or psychological burden;
- *Naches*: Emotion felt when someone who you taught or helped succeeds in a given task. Parents usually experience this emotion when their children graduate.
- *Surprise*: Neutral emotion, result of an unexpected event.
- *Curiosity*: Emotion experienced due to the desire to discover something new, which arises usually after acquiring new, but incomplete, information about a topic.
- *Excitement*: Sudden interest over something. Can be considered a higher, more intense and more focused version of *Curiosity*.
- *Wonderment*: Positive experience of witnessing something new, greater and/or unexpected.
- *Contentment*: Positive, but low excitement emotion. Inner peace, satisfaction and safety.
- *Amusement*: Emotion of experiencing something amusing and/or fun.
- *Frustration*: Emotion experienced when deprived of something pleasant, or when having problems achieving pre-established goals.
- *Awe*: Similar to *Wonderment*, but with a fear component.
- *Fiero*: Emotion experienced after finally overcoming a difficult challenge after struggling with it for some time.
- *Schadenfreude*: Pleasure from opponent misfortune.
- *Anger*: Emotion experienced when vexed, offended or cheated. In games, usually comes after the frustration and also works as a catalyzer for other emotions.
- *Fear*: Irrational response for threat.

## 2.5 4 Keys to Emotion in Games

Lazzaro developed a model of players' expectations from games as a key to develop games with more emotional appeal [11, 13]. Each of the 4 keys to emotions in games (*Hard Fun*, *Easy Fun*, *Serious Fun* and *People Fun*) relates to specific emotions. They are referred by the author as *play styles*.

- **Hard Fun** – *The opportunity for challenge and mastery*. This play style focuses on overcoming challenges, devising strategies and problem solving. Players that choose this style tend to prefer games that reward their hard work.
- **Easy Fun** – *The inspiration of imagination and fooling around*. This play style focuses on the players' curiosity, attracting their attention in a cognitive level, working with their imagination rather than difficult challenges.
- **Serious Fun** – *A ticket to relaxation and getting smarter*. This play style focuses on visceral emotions and behavioural experiences. Players that prefer this style tend to play with some sense of purpose, usually to express themselves or enhance their ability in a specific task.
- **People Fun** – *An excuse to hang out with friends*. This play style focuses on the social interaction. This play style is the main advantage games have over other media like books or movies, which are, by definition, experienced alone.

### 3 The Analysis

#### 3.1 BrainHex x MBTI

The first step was to study each one of the seven *BrainHex* player profiles and all of their characteristics and preferences defined so far, objectively listed. The same process was conducted for all the sixteen psychological types of the MBTI system.

With these two lists, the next step was to analyse and compare the characteristics of each one of the MBTI types and each one *BrainHex* profiles, (totalizing 112 analyses), and then unite the types and profiles that share the most common characteristics, adding up to the profiles the extra characteristics (*i.e.* unmatched ones) gathered from the psychological types.

With all the characteristics of the player profiles, their relation with the players' reward expectative and the psychological types' characteristics, an analysis by direct comparison was conducted, aiming to understand how intimate each type is to each profile. The analysis took the player profiles' characteristics as base ground, seeking correspondences in each of the sixteen psychological types.

After the comparison, some inclusive and exclusive criteria must be established to consider which type would be more or less relevant to each profile. Those criteria are the following:

1. There is a noticeable difference in the number of characteristics proposed by the theory for both the psychological types and the player profiles. Due to that, the profiles with more characteristics were analyzed first (Seeker, 12; Achiever, 11; Conqueror, 9; Mastermind, 8; Socializer, 7; Daredevil, 6 and; Survivor, 4).
2. The psychological type with the most common characteristics with a given player profile is considerate primary.
3. The psychological type with the second most common characteristic with a given player profile is considerate secondary.
4. If there is a tie in the first place, both are primary and there is no need of a secondary.
5. If there is a tie in the second place, the type with less correspondence in another profiles is taken as secondary.
  - (a) If the tie persists, the reward interest is disregarded, and a recount of the similar characteristics occurs.
6. The types that have the majority of common characteristics in more than one profile were allocated at the profile with the greater number of for comparison.

A percentage view of the analysis summarizing the correspondence between the profiles and the personality types is shown in the Fig. 2.

ESTJ	ENTJ	ISTP	INTP	ESFJ	ENFJ	ISFP	INFP	ESTP	ESFP	ISTJ	ISFJ	ENTP	ENFP	INTJ	INFJ	Audience Model
42%	0%	17%	17%	8%	17%	33%	8%	25%	25%	33%	42%	0%	0%	8%	8%	<u>Seeker</u>
18%	36%	9%	18%	9%	27%	27%	36%	18%	18%	9%	9%	36%	36%	36%	36%	<u>Achiever</u>
44%	11%	22%	22%	11%	22%	22%	22%	44%	22%	33%	44%	44%	44%	67%	56%	<u>Conqueror</u>
38%	38%	13%	25%	0%	25%	13%	13%	38%	25%	50%	13%	25%	25%	63%	38%	<u>Mastermind</u>
0%	0%	0%	14%	57%	43%	14%	43%	0%	14%	14%	14%	14%	43%	14%	43%	<u>Socializer</u>
0%	17%	33%	17%	33%	33%	33%	50%	50%	33%	50%	50%	50%	50%	67%	50%	<u>Daredevil</u>
0%	25%	0%	50%	25%	50%	50%	50%	50%	50%	50%	50%	0%	0%	25%	25%	<u>Survivor</u>

Types Selected as Primary.

Types selected as secondary.

Types excluded due to one or more of the established criteria.

Fig. 2. Image 4 - Results Table

The seven player profiles and the sixteen psychological types were concatenated considering their common characteristics, resulting in more complete player profiles expanded by the characteristics of the psychological types which were not originally considered and is referred from now on as expanded profiles.

- Mastermind – Primary: ISTJ; Secondary: ESTP; (Primary and secondary untied by criterion 6).
- Achiever – Primary: ENTJ; Secondary: ENTP & ENFP; (Primary and secondary untied by criteria 5.1 & 6).
- Conqueror – Primary: INTJ; Secondary: INFJ; (criterion 2).
- Seeker – Primary: ISFJ e ESTJ; (criterion 2).
- Survivor – Primary: INTP, ISFP & ESFP; (Primary and secondary untied by criterion 6).
- Socializer – Primary: ESFJ; Secondary: ENFJ; (Primary: criterion 2, Secondary untied by criterion 6).
- Daredevil – Primary: INFP; Secondary: ISTP; (Primary and secondary untied by criterion 6).

### 3.2 Expanded Profiles x Emotions

The second part of this research consisted in taking the “expanded player profiles” (BrainHex + MBTI) and relating them to the most relevant emotions for the players.

Some researchers have already covered part of this topic, and it is known that Lazaro’s 4 fun keys relate to the *BrainHex* players profiles [8, 12]. Considering that, the emotions that were not covered by the four keys were analysed and allocated accordingly to their characteristics directly on the expanded profiles. The ones covered by the Four Keys were allocated on the corresponding profile, using the 4 keys as a “bridge”.

The result is the expanded profiles, filled now also with relevant emotions data for each profile. Fig 3 consists in a diagram that shows all the proposed relations. The resulting audience model profiles are much more complex and rich than its predecessors.

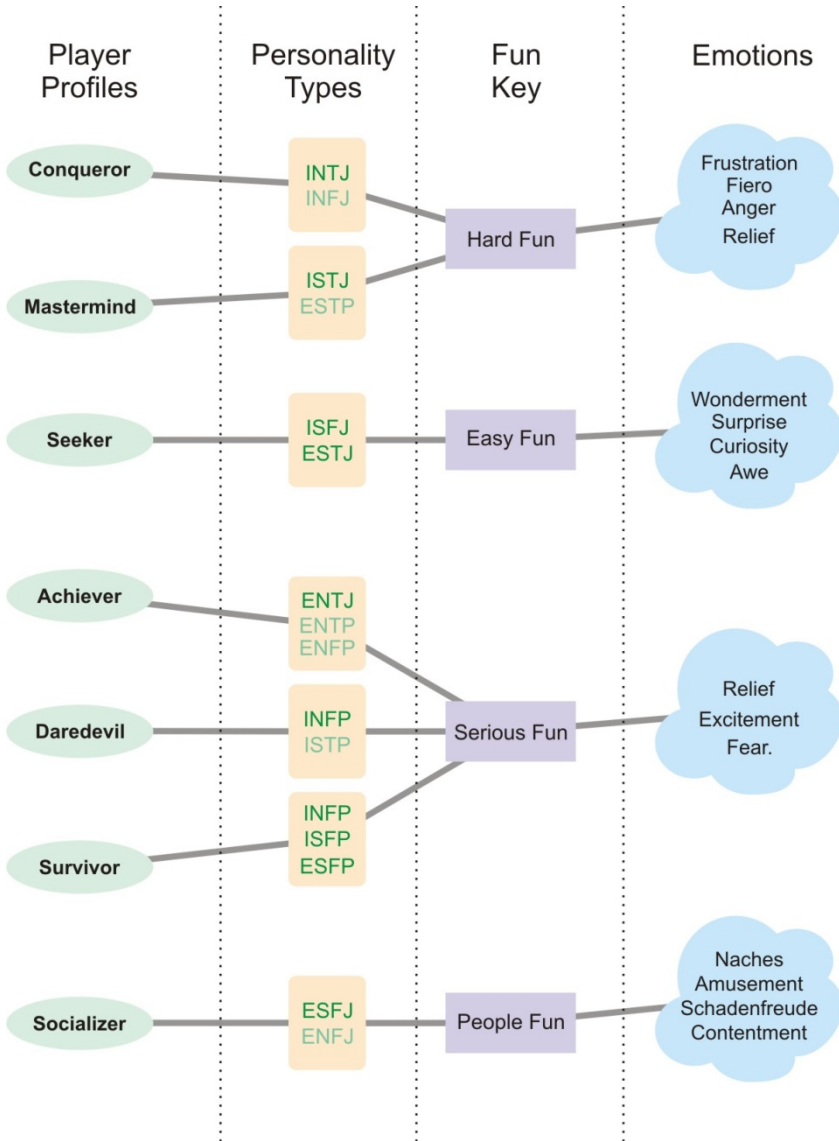


Fig. 3. All the relations proposed

#### 4 Conclusions and Further Work

The expanded model developed in this research has a great potential to allow designers to develop games focusing on a specific audience and specific features, which offers a method to design and predict gaming experience and emotion. It is important to notice that this model has been developed considering games in general, and does



not involve other media in their pure form. It is possible, however, to use these profiles as a model to develop profiles specific to other media or ends, or even just adapt parts of it to other ends.

Considering the strength that emotions have over the user (player) experience, generating them should be considered the **main goal** in the game development industry, as well as maximizing their influence on the player. Narrowing the distance between developers and players through solid players profiles enriched by psychological characteristics and preferences could be a way to understand **how** to pursue that goal.

Although the theoretical audience model presented in this paper seems to be solid, a user-focused research to validate the profiles and their correspondence with the psychology types and the emotions is still needed.

The next step for this research is to study the relations between game components (such as Interface, Scenery, Sound and Music, aesthetics and others) and those expanded profiles and emotions themselves, aiming to understand how those components may influence each profile and/or individual emotion. Game designers could, then, specify where to invest, how and what to develop, and which resources/components should be polished or reworked by the development team in order to reach the desired public in a more specific and appealing way.

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