Teaching Games through the A.G.E. Framework

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Introduction

As games become more and more pervasive in our modern society and game design and development programs get implemented in Universities and Colleges throughout the world, having a set of well defined methodologies for teaching students how to analyze and understand games become of paramount importance. Starting from the well known MDA model, the present article introduces an original approach particularly suitable for a teaching environment where we want to guide students and beginning game designers in the process of formalizing their ideas in a coherent and consistent fashion.

Mechanics, Dynamics, Aesthetics

The MDA Framework (Mechanics, Dynamics, and Aesthetics) proposed by Hunicke, Leblanc and Zubek (2004) is a well known approach among game designers that formalizes the consumption of games and their design counterparts by breaking them into three distinct components (figure 1).

As defined by its authors, *"Mechanics describe the particular components of the game, at the level of data representation and algorithms. Dynamics describe the run-time behavior of the mechanics acting on player inputs and each others' outputs over time. Aesthetics describe the desirable emotional responses evoked in the player, when she interacts with the game system".*

Aesthetics are clearly the most challenging part to analyze as they relate to the subjective experience of "fun" among players and, for this purpose, the MDA model proposes a specific taxonomy named "Eight Kinds of Fun". Specifically:

- Sensation: *Game as sense-pleasure*
- Fantasy: *Game as make-believe*
- Narrative : *Game as drama*
- Challenge: *Game as obstacle course*
- Fellowship: *Game as social framework*
- Discovery: *Game as uncharted territory*
- Expression: *Game as self-discovery*
- Submission: *Game as pastime*

So, for example, a game like "The Sims" (EA, 2000) tends to elicit different types of fun including Fantasy, Narrative, Expression, Discovery, Challenge and Submission.

Unfortunately game design, as a field constantly in between industry and academia, lacks a common vocabulary and terminology. Commonly used terms like "mechanics", "rules", "dynamics" and "aesthetics" are constantly interpreted and re-interpreted in slightly different, but significant, ways by different people.

For example, game designers like Schreiber and Brathwaite consider mechanics as synonyms of rules, spanning every phase of the game from the initial setup of game tokens onwards (Brathwaite & Schreiber, 2008), while others, like Järvinen (2008) or, more recently, Koster (2011), tend to draw a clear distinction between the two. Similar disagreements can be found when trying to strictly differentiate between "mechanics" and "dynamics".

"Aesthetics" can also be very confusing due to their subjectivity, moreover many students find it difficult to relate these to dynamics and mechanics in the context of an actual game.

In the end, there is no common agreement on a definition for almost any term currently in use and different ones are being proposed and adopted in different contexts, as listed in Sicart (2008).

Due to this very reason, instead of re-interpreting for the nth time the very same terms and risk further confusion, a different and straightforward set of concepts will be defined here as precisely as possible to start anew and avoid any possible misunderstanding.

Actions, Gameplay, Experience

Like MDA, the AGE model (Actions, Gameplay, Experience) breaks a game into three different layers of abstraction:

- **Actions**: the core, atomic actions that a player can perform in a game, usually described in terms of verbs. Examples are moving, jumping, kicking a ball, punching, shooting, taking cover etc.
- **Gameplay**: the resulting play that players achieve by combining and using the available "actions". These can be either verbs or higher level concepts, for example: fighting, race to an end, territorial acquisition etc.
- **Experience**: the emotional experience that players perceive while playing.

In the AGE model, the latter layer is analysed through the lenses of the 6-11 Framework, first proposed in Dillon (2010). This framework suggests that games can be so engaging at a subconscious level because they successfully rely on a subset of basic emotions and instincts which are common and deeply rooted in all of us. Specifically, the framework focuses on six emotions and eleven instincts shortlisted from those recurrent in psychology and analyzed in a number of well known treatises, like (Ekman, 1999), (Izard,1977), (Plutchik, 1980) and (Weiner & Graham, 1984).

In particular, the six emotions are:
- Fear: one of the most common emotions in games nowadays. Thanks to the newest technologies, it is now possible to represent realistic environments and situations where fear can easily be triggered: think of all the recent survival horror games or dungeon explorations in RPG games for plenty of examples.
- Anger: A powerful emotion that is often used as a motivational factor to play again or to advance in the story to correct any wrongs that some evil character did.
- Joy / Happiness: Arguably, one of the most relevant emotions for having a fun gaming experience. Usually this is a consequence of the player succeeding in some task and being rewarded by means of power ups, story advancements and so on.

- Pride: rewarding players and making them feel good for their achievements is an important motivational factor for pushing them to improve further and advance in the game to face even more difficult challenges.
- Sadness: Despite being an emotion that doesn't seem to match with the concept of "fun", game designers have always been attracted by it as a way to reach new artistic heights and touch more complex and mature themes.
- Excitement: most games worth playing should achieve this and it should happen naturally as a consequence of successfully triggering other emotions and/or instincts.

While the eleven core instincts taken into considerations are:
- Survival (Fight or Flight): the most fundamental and primordial of all instincts, triggered when we, like any other living being, are faced with a life threat. According to the situation, we will have to decide whether we should face the threat and fight for our life or try to avoid it by finding a possible way of escaping. This is widely used in many modern videogames, especially FPS and survival horror games.
- Self Identification: people tend to admire successful individuals or smart fictional characters and naturally start to imagine of being like their models.
- Collecting: a very strong instinct that motivates people to form patters of objects by completing sets with a common theme. It also relates to our hunting instinct and has been widely used in games since the early days of the medium, e.g. the dots and fruits in 'PacMan' (Namco, 1980) or the 32 treasures in 'Pitfall!' (Activision, 1982).
- Greed: often we are prone to go beyond a simple "collection" and start amass much more than actually needed just for the sake of it. Whether we are talking about real valuable items or just multiple sets of goods and resources we need to build our virtual empire in a strategy game, a greedy instinct is likely to surface very early in many players' gaming habits.
- Protection / Care / Nurture: arguably the "best" instinct of all: the one that pushes every parent to love their children and every person to feel the impulse for caring and helping those in need.
- Aggressiveness: the other side of the coin, usually leading to violence when coupled with *greed* or *anger*. It is exploited in countless of games.
- Revenge: another powerful instinct that can act as a motivational force and is often used in games to advance the storyline or justify why we need to annihilate some alien or enemy.
- Competition: deeply linked with the social aspects of our psyche and one of most important instinct in relation to gaming, e.g. leaderboards. Without it, games would lose much of their appeal.
- Communication: the need for expressing ideas, thoughts, or just gossip, was one of the most influential for human evolution and it can be used to great effect in games too, while seeking information by talking to a non-playing character (NPC) or while sharing experiences with other players in chatrooms and forums.
- Exploration / Curiosity: all human discoveries, whether of a scientific or geographical nature, have been made thanks to these instincts that always pushed us towards the unknown.
- Color Appreciation: scenes and environments full of vibrant colors naturally attract us, whether it is an abstract or a photorealistic setting. Note, though, that this is not

necessarily linked to resolution and technology but it is more about the artistic use of colours to make graphics attractive regardless of the actual number of pixels or colours used.

Overall, the main idea behind the 6-11 Framework is that these emotions and instincts interact with each other to build a network that should, in general, end with "Joy" and/or "Excitement" to provide players with a meaningful and fun experience.

Now, the AGE model proposes that Actions and Gameplay layers can be related to each other by a set of "Rules" while a set of "Goals", or challenges, link Gameplay to the Experience (figure 2).

For example, in a platform game like "Super Mario Bros." (Nintendo, 1985) the rule "the player can kill enemies by landing on top of them" links the jumping and falling actions to the "fighting enemies" gameplay while the rule "player will progress to the next stage by reaching an end-level flagpole" links the running and jumping actions to the race-to-an-end gameplay. Similarly, the ultimate goal of saving the princess serves as a motivation to link the fighting and race-to-an-end gameplay to the emotional experience of players, namely excitement and curiosity for the mission and for being the sole protector of the beautiful and elusive damsel in distress.

The Actions, Gameplay and Experience layers provide then a very useful framework for game analysis and design where a specific game can be synthetically represented, planned and studied visually by describing them through simple diagrams. For example, in the case of Super Mario Bros, one possible diagram is shown in figure 3.

Conclusions

Despite its simplicity, the AGE framework allows for a schematic yet comprehensive view of a game in a rigorous and coherent manner where its core actions and gameplay elements can be clearly related to each other to ultimately understand how they succeed in engaging players through a specific set of emotions and instincts.

This approach seems to provide an additional and easily understandable tool that can be used both in an actual working environment and, most importantly, in a classroom setting where we want to illustrate students the inner workings of a given game as clearly as possible, without any room for misunderstandings and misinterpretations.

Besides for study and analysis purposes, students could also use the model to start drafting out game ideas in the early steps of game conceptualization and brainstorming while constantly checking that the different parts of the game actually fit together into a cohesive unit.

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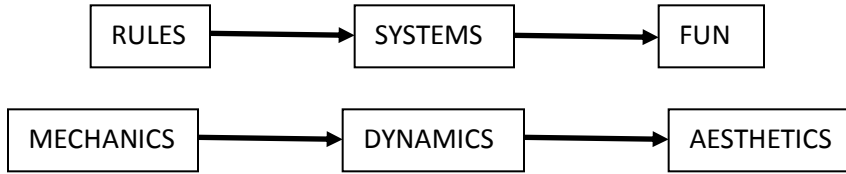
Figure 1: Consumption (top) and corresponding design structure of games (bottom) according to the MDA framework.
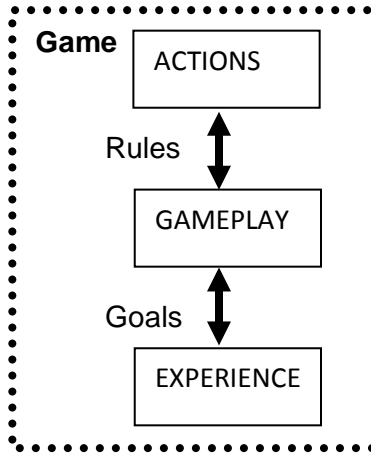

Figure 2: A schematic representation of a game under the Actions, Gameplay, Experience (A.G.E.) model.
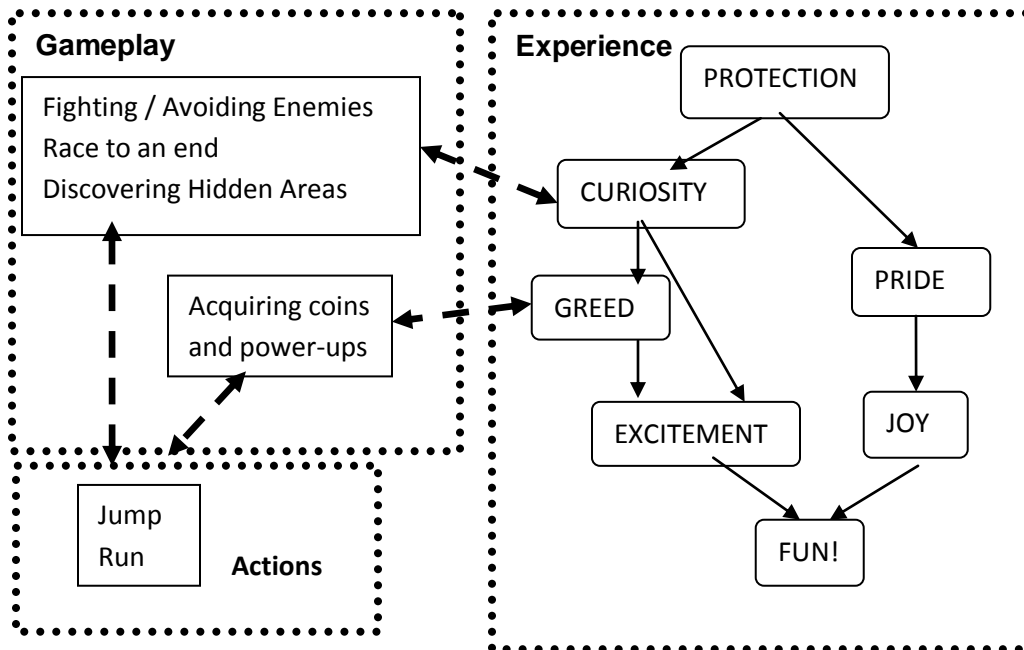

Figure 3: A possible AGE diagram describing the original "Super Mario Bros", where we see how the instinct of Protection, to first motivate the player, followed by Curiosity and Greed, can effectively drive the gameplay.

Author Bio:

Originally from Italy but now based in Singapore, Dr. Roberto Dillon is active both in the industry and academia sides of gaming being an Associate Professor at James Cook University and Chief Game Designer for Kentaura Pte. Ltd., an ambitious startup developing for the mobile and social spaces.

Before joining James Cook University, he was the Game Design Department Chair at the Singapore campus of DigiPen where he taught a variety of subjects like Game Mechanics and Game History, with his students gaining top honours at competitions like the IGF both in San Francisco and Shanghai.

Besides writing two books, "On the Way to Fun" and "The Golden Age of Video Games", published by AKPeters and CRC Press in 2010 and 2011 respectively, Roberto has designed serious and experimental games that were showcased by the international press and at events like Sense of Wonder Night in Tokyo and FILE Games in Rio de Janeiro.