Game mechanics telling stories? An experiment

Kristian Hjaltason,
Steffen Christophersen
IT University of Copenhagen
Copenhagen, Denmark
kwhjaltason@hotmail.com,
steffenbchr@gmail.com

Julian Togelius
Department of Computer Science and Engineering
New York University
New York, USA
julian@togelius.com

Mark J. Nelson
Anadrome Research
Copenhagen, Denmark
mjn@anadrome.org

ABSTRACT

We investigate the question of how game mechanics influence or produce narrative by way of empirical experiment. The experimental setup involves a game with reconfigurable game mechanics and minimal representational elements. 69 players played games with randomized game mechanics, and 16 players formed a control group playing with a fixed set of mechanics. All players were asked to describe the story of the game with minimal prompting, and these free-text answers were tagged. Associations between tags and mechanics were analyzed using correlation analysis and frequent pattern mining. It was found that the choice of mechanics significantly impact what stories players tell about the game, but that most of the associations are relatively simple and straightforward.

1. INTRODUCTION

Most digital games rely on both mechanics and narrative to create a satisfying player experience. Game mechanics create interesting dynamics from player interaction, and storytelling provides a narrative world for the player to explore and unfold. Storytelling can be done through rather conventional movie-like exposition, as in cut-scenes, and more indirectly through environmental storytelling and player-interactive dialogue. In game studies, there has been plenty of work on both game mechanics and storytelling in games.

This paper investigates whether the use of *game mechanics alone* can induce narrative in the player. To do this we have devised a prototype game, or rather the shell of a game, with minimal representational content and variable game mechanics. By varying the game mechanics while keeping the rest of the game constant, and asking players to report their experienced narrative in free text, we can associate particular game mechanics with story elements. The experiment is loosely inspired by a classic experiment which studied what stories viewers attributed to minimal film clips composed of moving geometric objects without narration [5].

While we are not contributing a theoretical analysis of narrative in games, an empirical study of the relationship between game mechanics and narrative nonetheless stands against an obvious backdrop of theoretical work on a similar subject. A framing of our basic question can be found in Juul's [6] otherwise skeptical paper on the relationship between games and narrative. In listing some possible ways there might be a relationship, one he cites is: "Games may spawn narratives that a player can use to tell others of what went on in a game session".

Our question is: how do game mechanics specifically impact what kinds of narratives are spawned in this way? There are some fairly obvious ways a game can directly frame narratives through its explicitly authored narrative content, such as cutscenes, dialog, and so on. But do the mechanics matter when it comes to the narratives spawned, or are they purely undetermined formal elements, on which any kind of explicit narrative content can be layered? Do players more often tell some kinds of stories when playing a game using certain kinds of mechanics? Are there design principles as to how a designer can use game mechanics to influence the stories players perceive as having taken place?

2. RELATED WORK

Proponents of a set of views and research agendas loosely grouped under the term *emergent storytelling* argue that a strength of games as a storytelling medium is their ability to produce rich sets of interactions that players perceive as stories, without a specific narrative being written up front by the game designer (see [8] for an overview). The game designer's job then is to create game worlds that support the players' storytelling.

Our study can be seen as an empirical investigation of emergent narrative in a restricted setting, specifically looking at what stories emerge from game mechanics in games which are light on thematic setting and explicit storytelling elements. This differs from the main focus of emergent-storytelling research, which has instead concentrated on the role of believable characters in creating rich worlds in which interesting stories can be told by players [2, 11]. Instead our focus on the role of formal game-design elements in emergent narratives aligns more with questions sketched by Lindley [7]: "Can we have worlds in which the simulation functions interact to create experiences that over time have particular kinds of narrative structure to them? What are the simulation elements needed to facilitate such emergent

narratives?"

A different point of connection, but one which we don't explore in detail here, can be found in work studying how abstract, tightly authored games convey meaning. For example, such games can serve as editorial commentary on news events [4] or means of personal, often highly metaphorical expression [3, 9]. Here we study the mechanics/narrative interaction in a much less determined setting, focused on player-created emergent narrative, rather than games with a strong authorial voice that are intended as a means of expression or commentary. Nonetheless, this other kind of work on mechanics/narrative interaction may produce interesting crossover in understanding how mechanics influence the stories players tell, particularly at the level of studying concrete game-design elements, such as Treanor *et al.*'s concept of "micro-rhetorics" [12].

The formal nature of game mechanics makes them amenable to algorithmic generation or variation, a very simplified version of which is used here. Several researchers have proposed ways of exploring spaces of reconfigurable game rules and mechanics, for examples through optimization algorithms or constraint solving [10]. Most of this work does not focus on player experience in general or narrative in particular, and typically evaluates games using simulated playthrough. In the current experiment the mechanics representation is relatively simple and generation is simply random choice.

3. GAME TESTBED

For the experiment described in this paper, we created a game in which we could examine the influence of game mechanics on the player's perception of story. The design criteria were that it should be easy to interact with, have minimal representation of real world that would influence the perceived narrative, and be suitable for implementing a number of different variations or configurations of game mechanics.

The game is set in a blocky 3D world, with the player controlling a player character (avatar) viewed in third person from above. The player character is controlled using four movement keys for each of the corresponding directions (up, down, left, and right). The avatar can also move diagonally by holding down two keys simultaneously. The idea was to have the player character move freely, but keeping it on the ground plane, so that the players felt that they had a certain degree of freedom, but still would not get overwhelmed by a more complex control scheme. The mouse is used to orient the direction the player character is facing, with the forward axis always pointing towards the mouse cursor. To make the forward axis clear, there is a box indicating the front of the model. The main reasoning behind keeping the basic structure of our game very simple was so that the interaction scheme would not take too much focus from the ones that would be available randomly to the player.

Finally, we wanted some non-player characters that the player could interact with. These are just simple cuboid objects. Again, we kept the characters as simple as possible so that the player would notice their behavior and abilities instead of their form.

We also created an environment that was merely a ground plane filled with boxes that were placed at somewhat equal intervals. It was created partly because we felt that a plain ground plane was a little boring, but also, and perhaps more importantly, as a reference point for the player when moving around. As we did not want any textures in the game, we had to have objects show the player that they were actually moving when the movement keys were pressed. The objects could also fulfill a role in gameplay as blocking line of sight or projectile trajectories, depending on the mechanics of the particular game variant.

3.1 Mechanics representation

Given our focus on the mechanical aspect of games, we strove to come up with a solution to combat the aesthetic influences and other aspects that we as the developers might impose on the player. Based on this, we devised the concept to make a game where the mechanics available to the agents of the game would be randomly chosen and so as to create a large number of different combinations, which where also tangibly different to play. In this way, each player would most likely face a unique experience, which was open to their own interpretation.

When randomizing game mechanics, there is a real risk that playability may be compromised, as we can not control which mechanics would be available to the player. We decided that this was a risk we were willing to take, as the focus of the study was on how the player experienced the story and not on playability and balancing. In fact, interesting stories might come out of unplayable and imbalanced combinations. There is also no requirement that the players "win" the game or indeed any way of doing so.

To make the process of designing and developing the mechanics more manageable, and to make sure that mechanics that would not work together would not be combined, we decided to order the mechanics into different categories. When instantiating a game, it randomly chooses one mechanic from each category and combines them with the others. We assigned each category of mechanics to a specific button press, in order to simplify the user interface. It should be noted that the names of the various game mechanics might or might not correspond to commonly accepted naming schemes.

There are five categories of game mechanics involving the player avatar's abilities; each category has three possible mechanic. This gives 243 possible combinations of mechanics, as in every game a single mechanic from each category is chosen. To simplify player interaction, each mechanic is assigned a single key (the same key is always used for all mechanics in a category) except the movement mechanic which uses the arrow keys.

- Hostile activity. The "primary attack" of the player.
  - **Shoot**. Ranged projectile attack.
  - **Melee**. Damages everything in small arc in front of the avatar.
  - **Area attack**. Expands a large ball around the avatar and damages everything within it.
- Assertive Interaction. Could be seen as a secondary attack.
  - **Mass stun**. Fires a slow-moving bar that temporarily immobilizes enemies.
  - **Throw bomb**. Fires an orb which is harmless until it expands after about a second; it then damages all NPCs around it.

  - **Building smash**. Makes the large boxes in the environment fall over. The box falls towards the player. All AI characters it hits are destroyed. Furthermore, if it hits another box, this box will move into the ground, while a large orb expands from its center. All AI characters hit by the orb are damaged.

- Passive Interaction
  - **Drain life from dead**. Absorb health from some destroyed NPCs.
  - **Hide**. All NPCs lose capacity to sense avatar for a short time; effects canceled by using any other mechanic.
  - **Place turret**. Places an object that shoots damaging projectiles at the nearest NPC.

- Movement
  - **Normal movement**. Move in all directions at moderate speed.
  - **Fast movement**. Same as normal but twice as fast.
  - **Jetpacking**. Can move in all directions, but will also gain altitude when moving and lose altitude when not moving. Introduces a fuel gauge which refills when on the ground and depletes when moving; movement stops when fuel empty.

- Maneuvering. The mechanics in this category allows the player to circumvent obstacles or NPCs.
  - **Jump**. Basic jumping in the direction the player is moving.
  - **Teleport**. Moves the avatar instantly to the position of the mouse cursor, if within a maximum distance.
  - **Super-speed boost**. Briefly but drastically increases movement speed.

For NPCs, there are four categories of game mechanics, with two alternatives for two of them and three for the other two. This gives 36 possible combinations of mechanics.

- Behavior. How the NPCs behave in general.
  - **Curious**. Move directly towards the player.
  - **Patrol**. Move between randomly chosen waypoints (different for each NPC).
  - **Factions**. NPCs are randomly assigned to two groups; an NPC from one group moves directly towards the nearest NPC of the other group, and start attacking when in range.

- Reaction pattern. What NPCs do when close to the player character.
  - **Attack**. Overrules factions attacking each other.
  - **Flee**. A waypoint spawns behind the NPC at a certain distance, and the NPC goes straight towards it.

- Attack. How NPCs deal damage.
  - **Shoot**. Similar to the homonymous player mechanic.
  - **Melee**. Ditto.

- Maneuvering. How NPCs get around.
  - **Walking**. Basic movement mechanic.
  - **Jumping**. Constantly, with a short pause between each jump.

In addition to randomly chosen mechanics, we also developed a version of the game with a predetermined set of game mechanics chosen by the designers: the player mechanics Normal Movement, Jump, Melee, Drain Life from the Dead and Mass Stun, and the AI character mechanics Curious, Attack and Shoot. This particular combination of mechanics was chosen because it provides for relatively straightforward gameplay, and similar combinations of mechanics can be encountered in well-known published games. This version was used to create a control group, whose test results we would compare to the results of a primary test group.

The reason for this was that the desired result for the primary experiment was to observe the differences in the experienced story, as the subjects of this experiment would play the version with randomized mechanics. However, in order to determine if the differences in the perceived story were actually caused by the randomization of the game mechanics, rather than just being coincidental, it was imperative to also determine that if the test subjects were presented with a version of the same game, sans the randomized game mechanics, they would have similarities in their experiences. If the discrepancies between the participants of the control experimentâĂŹs experiences were too numerous compared to the primary experiment, we felt it would invalidate many of the arguments in favor of our research question. On the other hand, if there were distinct differences between the control experiment and the primary experiment, we felt it would strengthen our statement.

3.2 Implementation

The game was implemented using Unity version 4.3.4f1, with gameplay code in C#. To help the AI characters find their way around the level we used the Unity component called A* Pathfinding Project. It divides the level into a grid, which the AI characters use to find the shortest route to their objectives. Furthermore, we implemented a way to register which mechanics were used, so that we could determine if there were any correlations between the stories that the individual subject experienced, and the available game mechanics.

4. EXPERIMENTS

In order to examine what stories (if any) players experienced in the game, we conducted both a small-scale study based on in-person interviews, and a larger-scale online study in which players submitted free-text responses after playing the game. The in-person study was run in two forms: first with a control version of the game in which game mechanics did not vary, and then in the primary-experiment version in which they were randomized.

4.1 Offline experiment

For the in-person interviews, we designed a questionnaire which was used as a guideline for interviewing our subjects, employing a semi-structured approach. The basic idea behind the questionnaire was to start with some introductory questions whose answers were not very importance to the experiment, in order to get the subject used to the interview setting. The second part of the questionnaire focused on how the subjects perceived the characters, environment, and narrative, inspired somewhat by the questions asked in Heider and Simmel's study of apparent behavior [5].

We started with a control experiment in which players were presented with a build of the game with predetermined mechanics. 16 subjects took part in this. We opted to only give a superficial description of the controls so as not to influence the subjects' perception of the mechanics' relevance in relation to the narrative, and let it be up to their own interpretation of the events. After their playthrough, we conducted an interview based on the previously mentioned questionnaire and saved the data for further analysis.

Subsequently, we ran another experiment with varying mechanics. 15 subject took part in this experiment which was run shortly after the control experiment, and was conducted in the same way, using the same questionnaire. The only difference was that we presented the subjects with the version of the game that randomly combined its game mechanics, in order to present the subjects with a unique experience each time it was played. The intention of this approach was to compare the results between this primary experiment and the control experiment, in order to see if there were identifiable differences between the players' experiences. We were particularly looking to see if the players' experiences would differ more when the mechanics were randomly combined, than when they were fixed from the beginning, as we felt this could provide some weight to any conclusions we might draw later.

4.2 Online experiment

In order to gather a larger set of reports in which to find patterns, we ran an online version of the experiment as well. 54 subjects participated in this. The game had a different welcome message and end message than the in-person experiments, but otherwise it was the same. Besides presenting basic information about how the play to the game, the welcome message had an important difference relevant to the study, explicitly telling the player that there was a hidden story in the game, even though we had not created one. This was to make the player focus on storytelling while playing the game, so that we could see if the results might differ when they knew beforehand that the goal of their playtest was to examine the story. The full welcome message is:

> The game you are about to play is an abstract one. There is however a story told through the gameplay. After you have played the game you will be asked what the story was, therefore it might be helpful to think about that while playing.
>
> You move with WASD and aim with the mouse. You have different abilities that you use with E button, space button, and the left and right mouse buttons. In the bottom of the screen you can see your health and the cooldown of your abilities. The game ends after 5 minutes or when you have no health left.

Besides recording which mechanics were active in the particular playthrough, we asked only on question afterwards: What was the story of this game?

5. RESULTS

5.1 Example stories

To convey an idea of the breadth of responses to the experiment, this section includes several representative responses reproduced verbatim. The majority of players wrote one to five sentences, including several coherent elements of a narrative with a clear connection to game mechanics. Themes of criminals and police were not uncommon, but there were also some more unexpected themes.

> You are playing as a super villain who is destroying a city and killing civilians. Some of them stand and fight, but you are so strong that you cannot die. The civilians are stupid because they run around aimlessly. They don't seem to avoid you, they just run around randomly.
>
> I'm a criminal of some kind who scared most people, but I only had 1 cop chasing me and he gave up easily, so I could only have been a petty crook. Or the officer tired out easily.

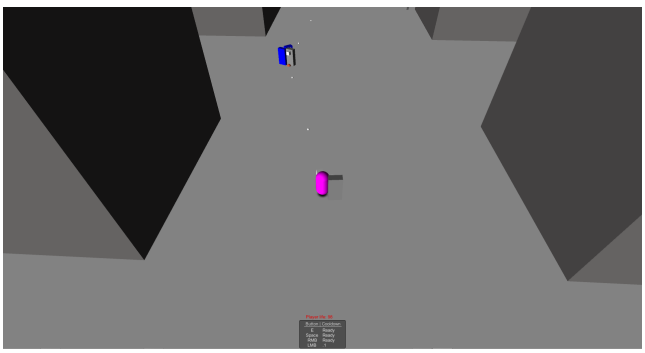

Figure 1: The avatar firing shots at a small group of NPCs.

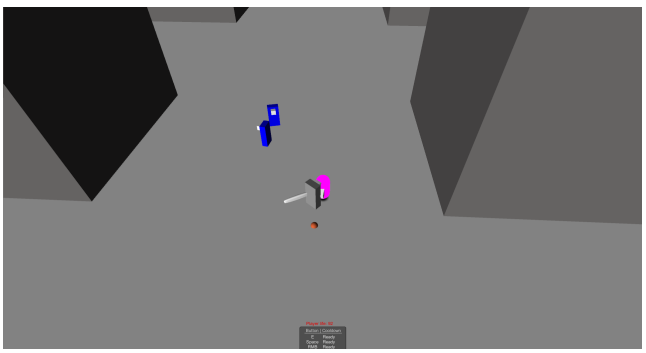

Figure 2: The avatar attacking an NPC with a melee attack.

> A pigman walked around and got frighened by strangers and started to try to kill them. After a while he realized that the strangers weren't dangerous at all so he started following them around to see what they were doing. Suddenly he realized he could interact with the large pillars and get them to fall down. Then he could use his ability to run quickly to see what happened. Unfortunately the falling pillars crushed a few of the strangers who then turned green and could eventually be collected in a way.

A significant minority wrote very short responses which nevertheless included some fictional element.

> The game takes place in a post-apocalyptic world in which the player is being hunted by zombies.

> Escape from the penguins

There was also a small minority of players who tried to second-guess the experiment.

> There is no story in the game, it is a virtual space with som simulated physichs of geometrical figures. I can of course be asked to create a story here, but you are asking what the story is. I must say that I can "feel" what your study wants to achieve and I think your hypthesis and method is really flawed.

We hope that this particular player will not be one of the reviewers of this paper, but if they are, they need to formulate their critique better. Finally, there were a few players who simply admitted to not knowing:

> I have no idea

5.2 Tags

In order to characterize patterns in players' stories, we labeled them with tags, which are single words or short sentences taken from their stories. In the primary and control experiments, we sorted the tags to see how many subjects were tagged similarly. The intention with these tags is to quickly give us an overview of the subjects' experiences.

The tags for the primary experiment, 66 tags were found. These could be grouped into five categories. In the following, we list all tags found under each category, together with the frequency of each tag.

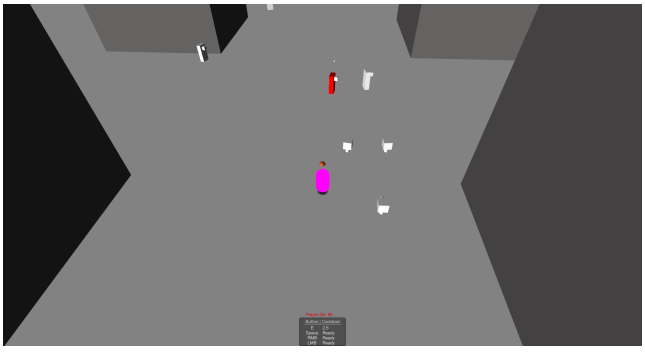

Figure 3: The avatar has places turrets, and NPCs are fleeing.

- **Player Character**. Fighter 4, Destroyer 2, Hero 2, Murderer 1, Super Hero 1, Vigilante 1, Jedi 1, Super villain 1, Cannibal 1, Different 1, Stealthy 1.

- **Player Abilities**. Shoot 5, Super Powers 3, Sword 2, Magic 2, Gadgets 1, Manipulate Time 1, Light Saber 1, Can Freeze people 1, Topple very large things 1.

- **Other Characters**. Mindless 3, Zombies 3, Passive 2, Stupid 2 flee from player character 2, Residents of a city 2, Innocent 1, Indifferent 1, Bad Guys 1, Mafia 1, Minions 1, Orcs 1, Two Kinds 1, People 1, Same as Player 1, Human 1, Aggressive when attacked 1, Generic enemies 1, One faction ganged up on the other 1, Generic Henchmen 1, Hate the player character 1, A few are brave and fight back 1, Evil 1, Sheep 1, Enemies 1, Some don't attack 1, Monsters 1, Trying to ambush 1, Drawn by player character 1.

- **Environment**. City 6, Maze 2, World of boxes 1, Buildings 1, Quarantine Zone 1, Arena 1, Hall with pillars 1, An abandoned building 1.

- **Plot Points**. Kill all enemies 2, Trapped 2, Survive 2, Chased 2, Genocide 1, Save Hostages 1, Takes place in the future 1, Free the City 1, Waiting for death 1, Hopeless Situation 1, Help one faction defend against the other 1, Thrown into a conflict 1, Demolish buildings 1, Kill people 1, Collect money 1, Kill people before they do bad things 1, Go on a rampage and destroy city for fun 1, Fight to the death 1, Escape 1, Avoid the others 1.

As can be seen, these "raw tags" span a rather wide range of sentiments and observation. Only 19 of them occur more than once. In order to provide data which would be more useful we created a number of aggregated tags, where each tag collects several related tags so that the resulting frequency is greater than one. These aggregated tags are: Killing, People, Chased, Enemies, Overpowered, Hero, Two Factions, Attacked, Objects, Fighting, Survive, Non authorities, Escape, and Hordes.

The control experiment lets us see whether players give similar stories when the mechanics are kept the same. The subjects in the in-person interviews were asked to describe both the player and AI characters. When describing the player character, many subjects believed it to be human.

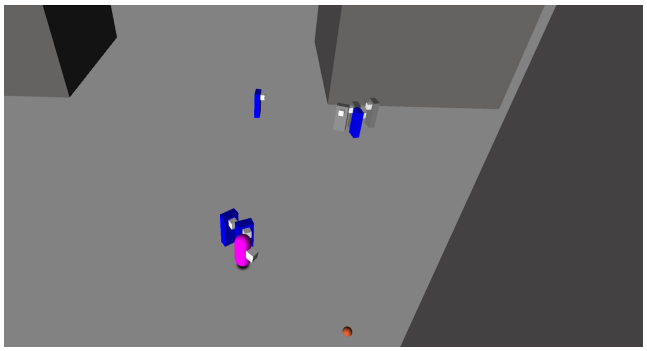

Figure 4: Two factions at war with each other.

This could be because the player character acts more intelligently and with more freedom than the AI characters do.

When asked to describe the AI characters, several of the subjects characterized them as robots or other mechanical beings. This could possibly be because of the relentless way they moved towards the player character. It could also be the mechanical and rigid movement patterns the AI characters had compared to the player character. They are also controlled by programming, as a robot also would be, so it is not inconceivable that the subjects experienced a correlation between the AI of the characters in the game and the AI of robots.

When the subjects were asked to describe the story of the game, there were several recurring and somewhat similar themes. One of these was "being chased". Almost every subject in the control experiment mentioned that the player character is forced to flee and escape from entities chasing the character. Another theme a large number of subjects seemed to gravitate towards was that the game was meant to be a fight for survival. Again, this could be because of the infinite number of enemies relentlessly coming towards the player, with no real place for the player to go.

As discussed above, the tags applied to the players' interview answers varied greatly, with a large number of them occurring only once. Furthermore, there seemed to be a rather sizable distance between the extremities of the players' experiences. On one end some felt that they were some sort of super-powered maniac, whose sole purpose was to commit genocide on the poor innocent cube people. And on the other end some felt that they had to flee for their life from the evil cube monsters, only biding their time until a certain death. Or perhaps they were some form of heroic figure, who had to save the poor people of Box Town against some menacing evildoers.

When comparing the control and primary experiments we noticed that there seemed to be more similarities in the players' experiences when they were presented with a set of predetermined game mechanics. In the control experiment the two most frequent tags were each applied to 12 players' responses. Whereas the two tags applied the highest number of times using a randomly combined set of mechanics, were applied five and six times respectively. It must also be noted that one of the tags used the most times on the subjects' of the control experiment was the Chased tag, which we viewed as a descriptor of a major plot point in the perceived story. Being Chased is the essence of the perceived stories, maybe even going as far as describing what the story is about. The tag applied the highest number of times in the primary experiment was City, which we viewed as a descriptor of the environment. But the environment stayed the same for every subject, during all experiments, so it is to be expected that there would be many subjects with this tag, even though their mechanics are different. This is supported by the fact that the control experiment also has a high number of subjects with the City tag.

5.3 Correlations

All the tags collected from the offline and online experiment were combined to see if we could find some interesting correlations between the game mechanics used and the tags. We chose to only consider correlations with a magnitude of 0.3 or greater (this threshold does not prove any kind of solid relationship, but since we're doing exploratory data mining, it lets us pull out suggestive correlations for further inquiry). The result is nine correlations worth considering between tags and game mechanics, plus eleven correlations among the tags themselves.

When we look at the correlations, one of the strongest is between the AI behavior game mechanic Two Factions and the tag we also labeled Two Faction. The correlation is 0.5217, which indicates that there is a moderate correlation between them. This is a fairly straightforward effect: in games where the opposing AI is split into two groups that attack both each other and the player, players describe stories involving two opposing factions, indicating they were able to accurately "read" what the AI was doing.

The second highest correlation is between two tags, Two Factions and War. The correlation is 0.5212, and points to the unsurprising conclusion that, at least in this context, the players perceive stories in which there are two factions to be specifically about a war between those factions.

A correlation of 0.4245 between the game mechanic Drain and the tag Has Powers is suggestive, with players appearing to perceive draining "life" from an NPC as a kind of power. Another correlation, of 0.4066, could back up this theory. We found this correlation between the game mechanic Hiding and the tag Escape. A number of the test subjects who played using this game mechanic responded in their story of the game, that they were trying to escape the place they were in, and since the mechanic hides the player from the AI through invisibility, this could provoke the test subject to make this assumption of the story even more appealing.

5.4 Frequent pattern mining

The second step of our analysis was association rule mining. In contrast to Pearson correlations, association rule mining can find nonlinear associations between multiple variables. First, the Apriori algorithm [1] was used to find frequent itemsets; these were then turned into association rules, and those association rules with the highest lift coefficient were chosen for further study. The association mining largely confirmed the findings from the correlation analysis, but also came up with some additional findings.

The most obvious association is again between the game mechanics Two factions and the tag Two factions. The association rule is as follows: when the game mechanic Two factions is active, the conclusion of a tag named Two factions has a support of 0.52, a confidence of 0.17 and a lift of 2.4. This ties very well to our correlation analysis, a high support of the people who experienced this game mechanic, the high lift also indicates that this is a highly valid argument, that the game mechanic does have an influence on what players perceive the story to be.

Another enemy behavior that seems to have some influence is how the players react to the AI when it is running away/fleeing from the player instead of attacking. In this instance the premise is the game mechanic Enemy Flee and the conclusion is the tag Overpowered; this association rule has a support of 0.22, a confidence of 0.1 and a lift of 1.68. This is not as strong a rule as the one above, but it shows that when the AI is fleeing, the players have a tendency to see themselves as overpowered. This makes sense since the AI will not fight back when it is attacked, which could give the impression that the AI players are easy to kill.

Also as an association rule we saw a connection between

the Drain game mechanic and the Has powers tag, just like we did with our correlations. The support for this rule is 0.4 with a confidence of 0.13 and a lift of 2.35. And again here we have a good confirmation of our conclusion from the correlations, it shows that there is a connection between the game mechanic and what story the test subject experiences.

The association rules also confirm the correlation between Drain and Has Powers, and the correlation between the game mechanic Hiding and the tag Escape. With a support of 0.25, confidence of 0.10 and a lift of 2.46, we can draw some of the same conclusions as we did with the correlations.

6. CONCLUSION

This paper has attempted to address the question of how game mechanics influence narrative through empirical experiment. This question has been extensively studied from a theoretical perspective within game studies, and we do not claim to have gone beyond these debates, or even to have represented the full complexity of the issue. What we have done is described a method for empirically studying this question, influenced by classic experiments with moving (but non-playable) images, such as that of Heider and Simmel [5].

We conducted an initial study by building a small game aimed at having minimal explicit representation of narrative elements, and with randomized game mechanics whose effect is investigated through free-text questionnaires. The results of our study do show that, all other things being equal, game mechanics play a role in shaping how a player perceives the narrative of a game. We believe this is the first time this question has been addressed explicitly with an empirical study. In terms of the actual correlations and associations found, they are rather direct and not too surprising. In addition, several of them suggest that our attempt at a minimally themed game may not have been minimal enough: too many things about the setting are still perceivable from the choice of graphics and framing. However, we believe that the method presented here is extensible and future work using the same method but with a larger player base could help cast further light on this issue.

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