

Exploring the Influence of Database Story Elements on Independent Agent Story Creation

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Abstract—The central purpose of this paper is to explore how the introduction of a database consisting of pre-selected items, characters, and attributes will affect a story environment in which people are playing as independent story agents. A combination of observation and interview techniques will be used to analyze and interpret this effect. Although the prototype test conducted was beneficial in testing the workings of the database system, no useable information could be gathered regarding the effect of the database on the story environment. Since several of the participants in the audience were professional performers and the majority of the participants had previously either played or worked in the interactive field, it is impossible to determine if their playing behavior was influenced by the database, their previous performance experience, or how they may have been trained to play. Furthermore, even participants who had not had previous experience in interactive were most likely affected by the behaviors of those trained performers. Again, it is impossible to determine which behaviors were influenced by the database and which were influenced by the behaviors of other participants.

I. INTRODUCTION

The goal of the multiplayer story engine is to create a digital structure that will allow an audience to create a story and play in a fictional environment without any additional aid. Thus, no actors or other personnel would need to be used to create an engaging experience. Building on the work of Augusto Boal, a pioneer in participatory theatre, the philosophical goal of the project is to empower the audience by giving them control over their entertainment experience [1].

In the context of narrative theory, the database design was influenced by the collaborative work of Mariet Theune, Sander Faas, Anton Nijholt, and Dirk Heylen [2]. They theorize that story can be generated by individual players making choices based on their individual goals, emotions, and perceptions of the story environment. Additionally, they outline the methods of shaping story development as influencing the story environment, influencing individual character motivations, and limiting character actions.

With these principles in mind, the database is designed to provide information tailored to affect these specific areas. First, the initial character information provided focuses on giving participants a character motivation and information on how that character perceives his or her surrounding world environment. This information is intended to provide the momentum necessary for participants to start the process of generating their own story. Additionally, as the database grows in future phases to encompass

the prompting system, virtual control of the story will be limited to these methods of suggesting character motivation, giving new information about the story environment, and limiting the range of actions that participants can take.

However, within the scope of the multiplayer story engine system, I would like to explore the comprehensive database of character and story elements. More specifically, the primary question that I would like to address is how those raw, provided materials affect the actual story choices that individual participants make. In essence, how does providing information about character motivation, environment, and worldview affect participant behavior within the context of interactive play.

II. PROBLEM

For this specific exploration, I will be examining how individual participants behave when given specific character information to play with before the experience begins. First, I will explore how individual participants perceive their power of choice in character selection. Next, I will observe how individual participants use the character information that the database delivers.

For this test, participants will begin with an introduction from the orientation team explaining the registration process. Once they have completed the liability forms, they will enter their name and gender, and choose character attributes that they would like to play during the game. Availability of characters with these attributes will be indicated by a printed statement of number of characters available below each attribute as well as a color that indicates remaining number. A key will be provided for participants that indicates that green means that there are several characters available with that trait, yellow means that there are a few characters available with that trait, and red means that there are no characters available with that trait. We choose to provide the participant with the availability information in hopes that by having this information, the instances of user frustration caused by attempting to choose attributes that are not available could be limited.

These character attributes have been previously assigned to available characters. Additionally, participants have the option to add their own attributes that will be written into a database list to be included in future game sessions.

MPSE Registration Form

Please enter your name:

Please choose your gender.
 Female Male

A green cell means there are lots of characters with this trait available.
 A yellow cell means there are only a few characters with this trait available.
 A red cell means all of the characters with this trait have been taken.

Please select the traits that you would like to play.

<input type="checkbox"/> Addict 1 Character Available	<input type="checkbox"/> Bully 1 Character Available	<input checked="" type="checkbox"/> Busybody 4 Characters Available	<input checked="" type="checkbox"/> Caretaker 4 Characters Available	<input type="checkbox"/> Con-Man 2 Characters Available
<input type="checkbox"/> Detective 0 Characters Available	<input type="checkbox"/> Eccentric 2 Characters Available	<input type="checkbox"/> Flake 2 Characters Available	<input type="checkbox"/> Flirt 4 Characters Available	<input type="checkbox"/> Hypochondriac 2 Characters Available
<input type="checkbox"/> Introvert 2 Characters Available	<input type="checkbox"/> Jerk 1 Character Available	<input type="checkbox"/> Know-It-All 2 Characters Available	<input type="checkbox"/> Leader 5 Characters Available	<input type="checkbox"/> Martyr 2 Characters Available
<input checked="" type="checkbox"/> Narcissist 2 Characters Available	<input type="checkbox"/> Optimist 2 Characters Available	<input type="checkbox"/> Pessimist 3 Characters Available	<input type="checkbox"/> Pragmatist 1 Character Available	<input type="checkbox"/> Psychic 0 Characters Available
<input type="checkbox"/> Snitch 0 Characters Available	<input type="checkbox"/> Troublemaker 1 Character Available	<input type="checkbox"/> Witch-Hunter 1 Character Available	<input type="checkbox"/> Workaholic 3 Characters Available	<input type="checkbox"/> Worrier 1 Character Available

Any trait that we've missed: We'll try to include this one next time.

Fig. 1 Primary Registration and Character Choice Screen

Once the participant chooses his or her gender and the attributes that he or she wishes to play, the program will relate that information to the database. If the participant has chosen attributes that are unavailable, the program will return a message that states that there are no characters available with the previously chosen attributes and will provide a button so that the participant can return to the previous page and select different attributes. If there are characters available with the previously chosen attributes, the program will return a list of three characters.

MPSE Registration Form

There are currently no characters available with that attribute... please try again.

Fig. 2 No available characters screen

In order to populate this list, the program runs a sorting function that sorts the characters in the database according to how many attributes each character has in common with the attributes chosen by the participant. The top three matching character records are then passed into an array that will be displayed as a list to the participant. We chose to incorporate this function so that participants would have some choice and control over which character they play. Our philosophy behind this choice is that an individual will experience greater joy and connection with a character if he or she has chosen it. Thus, we incorporated a choice process instead of randomly assigning characters. However, our system still contains a flaw related to this choice. Since the number of characters in the database matches the number of players exactly, the last people to register for the game will have fewer choices of character. In fact, the very last person to register will have no choice at all, and will receive the last remaining character. This flaw will be addressed in future phases of development.

Continuing with the participant experience, the displayed list of character choices will include the character's name and a brief "tagline." The tagline is a five to ten word summary description of the character. Taglines will include the character's occupation and overall personality.

MPSE Registration Form

On the basis of your preferences, we have selected these characters. Please choose one.

Jacob Romey : A witty and verbose web-blogger

Jim Haby : A career driven newlywed who is slowly becoming more independent

Larry Farisi : A high-energy gym teacher who is married to the job

Fig. 3 Character choice screen

From this list, the participant has the option to either choose one of the characters or to return to the initial form and repeat the name, gender, and attribute entry process in order to obtain a new list of characters. We've provided the option to go back as a measure to again increase participant choice and control. If the participant dislikes the list of character choices, he or she may build a new list, as long as characters remain available. Again, the previously mentioned flaw of limited character choices also limits this choice and will need to be addressed in future phases of development.

Once the participant has chosen his or her character, the program directs the participant to an area where he or she will receive detailed information about his or her character including the character's full name, backstory, objective within the story, and relationships to other characters within the story. Each participant will have several minutes to read his or her assigned character information. At this point, the participant no longer has the option to choose a different character. We have not provided a "back" option at this point because the participant has already read intimate details of a specific character. If they were to go back and choose someone else, they would have too much information about the character they didn't choose. Since someone else would be playing that character, having that extra information might adversely affect the game. Thus, after reading the character information, the participant will enter into the game environment.

Character Registration Form for Multi-Life

Your character is Sandra Shipman

Please proceed to the character table to collect more information about your character.

Fig. 4 Final character information screen

III. PROPOSED SOLUTIONS

In order to measure the effect of the raw character information provided by the database, we shall closely observe the behavior of individual participants as they interact with the program and as they play the game.

In our observations, we shall specifically focus on recording instances where the participant: 1) uses information that he or she received from the database 2) changes information that he or she received from the database 3) ignores or forgets information that he or she received from the database 4) creates new information that compliments information that he or she received from the database 5) creates new information that conflicts with the information that he or she received from the database 6) shows signs of being confused or at a loss due to not having adequate character information.

In addition to researcher observation, a post-game interview will also be used to seek how individual participants view if, how, and to what extent character information affected how he or she played. These interviews will provide a means by which the participants are included in analyzing observational data examining researcher inferences for accuracy. Interviewers will be instructed to avoid asking leading questions in order to minimize the chances of influencing participant response.

I chose observation as a means to explore the problem because it is the least intrusive method for the participants. I considered using surveys to solicit the participants' views on their experience, however, I felt that using a survey method would result in either the participant giving inaccurate information in an attempt to answer survey questions "correctly" or the participant might become hyper-aware of how he or she plays a character. In the first case, the gathered information would be less useful to study. In the case of hyper-awareness, the survey might alter the participant's experience and thus make gathered information invalid. Even if the survey were to be administered after the game experience, it might make the participant self-conscious and less likely to participate in a future game experience. Thus, I chose to use observation instead of surveys as a less intrusive means.

IV. EVALUATING THE SOLUTIONS

Overall, as a mechanical run of the database character registration system, the prototype test was a success. However, in directly addressing the question of to what extent the provided character information influenced participant behavior and choices, the prototype test observations are not useable.

As a mechanical test of the registration system, for nineteen participants we only experienced one error. The error was in a slow network connection and was addressed by simply moving the participant to an alternative laptop. Refreshing the network connection seemed to eliminate this issue for the duration of registration. Otherwise, the character registration process progressed very smoothly.

Several registrants utilized the system's ability to input new character traits. My observation is that it was fun to input new traits, however, there was no immediate reward for doing so. In future iterations, I would like to add the ability to add newly entered traits to whatever character the registrant chooses. This would increase participant control over the character creation process and perhaps inspire a greater sense of ownership for the participant.

The most common question for registrants was "How many traits may I select." Thus, in future versions of the registration system, a statement should be added to explain that there is no limit to the number of character traits that can be selected by the participant.

Additionally, some registrants wanted clarifications as to the meaning of some of the traits. In particular, it seemed that registrants who spoke English as a second language would have liked definitions for some of the character traits. In reviewing the trait vocabulary, some traits do rely on idiomatic expressions in English. While these idiomatic terms provide a very useful connotative feel to the character traits, they also could be difficult for non-native English speaker. In future iterations of the registration system, I would like to add a tool that would enable the user to select a character trait and receive a definition for that term. Furthermore, I feel that a facilitator should remain with the registration system in order to assist registrants who may not speak English as a first language. In future phases, making the system available in multiple languages could be an effective option.

Another addition to future iterations that would increase production value would be a function to print out nametags and character information. This function would also require acquiring additional printing equipment. However, I feel that this addition would increase the sense of professionalism by provided printed instead of handwritten nametags. Increasing the perception of professionalism may also increase participant trust in the overall experience. Increased trust, in turn, might make participants more likely to feel comfortable playing in the story. Also, printing out character information instead of having it pre-printed might make the registration process feel more dynamic. A more dynamic process might influence participants to feel a greater sense of creation and ownership of their character. Again, this might make participants more likely to feel comfortable playing in the story. However, to fully address these issues, the orientation process would also need to be addressed and modified to further support a sense of professionalism, dynamism, and trust.

Shifting into the area of content assignment, the process of designating the medical team also needs to be revised. In the prototype test, the method of simply designating the first four registered characters as the medical team was a major contributing factor to skewing prototype test observations. In the prototype test, Three of the four designated medical team were professional performers. Half of the medical team was professionally trained interactors. Since the story structure places the medical team in an authoritative leadership role, the behavior of these participants greatly influences the behavior of the entire group of participants. In revising the method of selecting the medical team, we may want to consider factors that may make the medical team a more representative sample of the greater population of participants.

Continuing with content management, a common sentiment expressed by participants after the experience was that they didn't see how their character backstory could be acted upon within the context of the quarantine. Thus, it would seem that the character information provided failed to give participants an adequate sense of character motivation and perception of the environment. Therefore, in future iterations, we will need to revise and clarify the provided character information. Furthermore, we need to revise the prompting system to support each character's backstory and provide suggestions for participants to express the worldview of their characters. Also, when participants do act within the story, we need to reward those actions. Without reward, the desired behavior of participants actively making choices is unlikely to continue.

I observed an example of this pattern of behavior during the prototype test in the character of the psychic. The participant playing the psychic character approached this flamboyant character with enthusiasm. Stepping into the experience, the participant adopted an accent for the character. From very early on in the story, the participant began making psychic predictions for other participants within the story. However, not once did any prediction that the

participant made affect the story development in any way. The story shaping system simply was not listening to the participant. The participant had no power. After several tries, the participant stopped making psychic predictions. Without this expression of character perspective, the participant seemed to be at a loss for how to play within the story.

In addition to the psychic, I also observed this pattern of behavior in the participant playing the cop. Early on in the experience the participant made strong, authoritative choices. The participant took on a very clear worldview. However, as the experience progressed and the participant's choices and worldview contributions were ignored, the participant ceased to make offers.

With the exception of the medical team, there seemed to be a sense of powerlessness for participants in the context of the story experience. In post production interviews, participants made statements like "I kinda wish I would've chosen a more aggressive character so that I, you know, would have something to do other than be supportive."

One cause of this sense of powerlessness, I believe, is the lack of support from the story engine for choices that individual participants make. However, another significant cause that cannot be ignored is the makeup of the medical team for this prototype test. The medical team, already set up in story as an authoritative group, was composed of three professional performers. Naturally, these performers lead the story development. Other participants, less experienced and less comfortable in a playing atmosphere, held less power. As a result, the contributions of these other participants went largely unnoticed and had little effect on the story. It is like stepping on to a basketball court where you are an amateur athlete, but you are playing on a team with professionals. Chances are, the professional players are going to do most of the playing. Since the goal of the Multi-Player Story Engine is to empower and facilitate every player. It is crucial that we address this issue.

In these conclusions, I am influenced by the theoretical game design work of Ernest Adams. Adams explores the concept of difficulty in gaming. He divides difficulty into six factors: intrinsic skill, stress, power provided by the game, in-game experience, native talent, and prior experience [3]. Within the context of the prototype test, we failed to provide power from the game and any benefit from in-game experience. Without reward, in-game experience actually may make playing more difficult and increase stress. Also, the factor of prior experience and, in fact, training, separates the group of participants and makes it even more difficult for new participants to play.

Returning to my initial research question to explore, how the database information affects participant behavior, I must conclude that none of my observations can be applied to this question. Unfortunately, the influence of the database cannot be separated from the influence of the professional performers who modeled specific behavior, or from the previous interactive experience that several participants had. From my experience working on interactive projects, I recognized the majority of the participants in the prototype test. Some of the participants I trained in interactive technique with. Some of the participants have worked on other interactive projects with me. And some of the participants I recognize as participants in other interactive experiences. Since this particular group of participants is relatively familiar with the concept of interactive entertainment, it is logical to assume that they have pre-existing ideas about how they should play in such an experience. Thus, their play behavior cannot be accurately attributed to either database factors or previous experience or the model set forth by the professional performers. The participants themselves may not be aware of all the factors that influence their behavior.

Thus, in order to obtain accurate observations in relation to this research question, we would need to run a new test of the system with participants who are truly unfamiliar with this form of entertainment.

V. SUMMARY

In summary, the prototype test highlighted some important areas to consider and adjust for future iterations. In the registration system we need to add additional trait selection instructions and character trait definition. Character information delivery systems and orientation process need to be revised to project a greater sense of professionalism and dynamic creation in order to influence participants to be more comfortable starting the story.

In the realm of database content, we need to revise the given character information and overhaul the prompting system in order to support choices made by participants that express character motivation, worldview, and actions within the story.

Finally, in order to truly test the stated research problem of to what extent the database affect the character behavior of participants, we will need to conduct a new test with participants who are unfamiliar with the realm of interactive entertainment.

V. REFERENCES

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