

UNIVERSAL CHARACTER MODEL

A character definition tool that allows
casting your audience inside the Story.



TABLE OF CONTENTS

04	CONTRIBUTORS
05	Executive Summary
06	INTRODUCTION
08	Immersive stories
09	Semi-autonomous characters
09	Authorship
12	USES OF A UCM
13	Defining character
15	Conversational AI
17	The experience container
18	Author-first semi-automation
21	Containing the audience
22	FUTURE THOUGHTS
23	Other uses of this model
24	Implications and challenges
26	CONCLUSION
27	BIBLIOGRAPHY

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Executive Summary

A Universal Character Model houses all attributes of any specific character; who they are, their motivations, their goals, and their methodology to achieve them. A model of this sort creates consistent character behavior within the fluid context of interactive and dynamic stories where audiences are cast inside the story. A UCM is not only beneficial to these stories, but needed in order to create flexible and believable character-based experiences, reliable story environments and compelling stories.

INTRODUCTION

Relationships between audiences and stories are changing. After years of audiences going unnoticed by the characters they invest so much in, audiences are finally being recognized for the essential part they play in storytelling. Now, they are welcomed into dynamic story worlds that adapt to them personally from the moment they arrive.

Dynamic story worlds change depending on audience influence, and demand both strong characters and strong environments. The games industry often showcases strong environments, with systemic design and emergent narrative. The film industry gives us strong characters with personalities that we feel we know. Interactive stories give us the chance to combine both in a way where the sum is greater than its parts, because the audience is inside the story. And the audience brings complexity. They bring their own mind and their own ambitions which inherently tests the strength of our characters. A **Universal Character Model** (UCM) encompasses who the character is and can be utilized in a way that, no matter how the audience influences our story, the character will respond accordingly.

This paper presents the initial conceptual requirements of a UCM that are vital for creating and advancing immersive stories. We will focus on what a UCM must be capable of doing, without suggesting which particular technologies available today should be relied upon. This is because we intend the UCM to be a modular and expandable solution to interactive storytelling, one which is open to new technologies as they become available. Equally, a UCM should work with existing interactive storytelling basics such as authored branching narrative and character arcs. The main requirement for the model is to be an understandable tool to improve interactive experiences for both the creator and the audience.

Broadly, a UCM is a standardized data structure that creates a character definition containing all fundamental features of a character (personality, backstory, motivations, likes/dislikes, quirks, etc). It will be populated by the author and then the character is ready to be inserted into an interactive narrative and react appropriately to audience influences.

We argue that such a structure is not only possible, but necessary. Allowing audiences to influence and engage with our stories requires coherent and robust narratives and characters. To achieve this the creatives behind it must keep track of a magnitude of detail which grows exponentially with every personalized thread of character and story. This mental workload is quickly outstripping contemporary techniques such as hand-crafted Decision Trees, which are costly and difficult to organize. In addition, today we demand that characters live across various media forms (video-games, mobile, TV, film, VR/AR, and more), and we want our immersive experiences to be long-term. It has become unfeasible for writers to individually

hand-craft each instance of a character's actions and dialogue, let alone the dynamics between large groups of characters with complex interactions. Pressures on production budgets, time scales and the capabilities of the human mind all limit the possibility space of interactions to an insufficient number of narrative inflection points which, ultimately, limits the quality and depth of immersion we can offer audiences.

With a UCM, the grounds for a new vision of interactive storytelling is possible. A UCM has two objectives. First, for the storytellers; provide a tool that allows them to commit to dynamic storytelling. Second, for the audience; provide them with rich, dynamic, and narratively coherent story worlds. We will discuss how a UCM could be utilized as a detailed prompt for AI to generate dynamic character reactions and behavior in response to audience interactions, either real-time or as part of a creative production process. We will explore what that prompt might look like, and while we believe that AI can be used effectively as a supplementary tool to fill in gaps where our human authors cannot, we do not suggest that AI should use a UCM to write our stories for us, and so we will also discuss how it could be maintained.

The conceptual requirements of a UCM should be looked at through two perspectives: **the data within the UCM itself**, and **the evolution of authorship**.

As a starting point for the data within a UCM we will reference the Dramatica Theory of Story (developed by Write Brothers Inc.) In Dramatica's system, characters are seen not as discrete individuals, but as bundles of narrative functions. We will discuss Dramatica in some detail, however what is most important to note is that it grants us both a method of distinguishing particular features of characters, and also a predictive schema through which an interactive narrative can be constructed, on the fly, in response to audience inputs.

When characters are equipped with so much detail, we argue that a UCM fundamentally alters the evolution of authorship both in terms of the scale of the stories authors create, and how they create them. Once a character is defined within a UCM, an author could weave in AI generated character responses, leaving themselves more time to primarily focus on shaping the overall impact of a narrative, rather than the particulars of each character's dialogue and actions. Writing becomes much more like directing, and editing like rehearsal.

Hand-crafted character dialogue and action will always be forefront, and will work together with generated content much like how hand-crafted animation and procedural animation now work alongside one another. By shifting an author's focus to the narrative movement of their story, and allowing a UCM to handle a portion of the smaller interactions, authors will be freed to focus on keeping their audience immersed. As an example of how authors might populate and control their character models, we will look at existing authorship tools such as Charisma.ai and its focus on conversation between audiences and characters, powered by Natural Language Processing AI (NLP).

A UCM will become the basis for creating expansive and coherent immersive experiences. We will discuss ways in which it could be utilized, such as a housing for IP to be distributed into new story worlds, a reliable prompt for AI and NLP to produce hyper-personalized experiences, and a way of developing a model that aims to define our audience in the same way it does our characters.

Immersive Stories

Being part of the story is not a new concept. Centuries ago, travelling storytellers would perch on the well-worn barstools of local taverns, crafting and telling stories based on the towns-people and their associated gossip. The result was a highly personalized, immersive story, that the villagers could relate directly to. Around campfires too, stories are molded to be extra spooky, reflecting the listener's greatest fears.

What makes this immersion so unforgettable for audiences, is not just that the story is personalized, it's that it is dynamic. At that moment, someone (or something) is taking what you give them and changing the whole story world, just for you.

With the invention of the printing press, stories, and how audiences interacted with them, changed. Within 50 years of the invention of the printing press, the number of printed books grew from a few thousand to 9 million, and audiences shifted from being active listeners and participants, to readers looking in, duly turning the page. If the reader shouted loudly to not go down the creepy staircase, the book couldn't change or be aware of the reader's existence. It is immobile, and over the years, we became accustomed to this type of relationship with stories we were consuming, and forgot about how exciting it was to be an active audience participant.

Of course, the printing press did not signify the death of interactive stories. Campfires and grandparents still exist, not to mention stand-up comedy, theater, games, choose-your-own-adventures. But it did signify a shift in audience positioning. The story was inside, and the audience was outside.

The feeling the villagers got from their travelling storyteller, confidently outdates and outperforms the "choose-your-own-adventure" stories that we associate so strongly with interactive experiences today. Sure, choosing your route through a story from the outside was fun, but it never quite hit that same mark. Now, with the rapid advancement of technology, loosening of traditional media barriers, and an overwhelming willingness from audiences, the pure, joyful, meaningful immersion is possible in contemporary media.

Audiences are once again being incorporated into stories, and the art of storytelling is returning to its dynamic beginnings, where the very presence of the audience inherently shapes the story.

Semi-Autonomous

Characters

In order to create these immersive worlds, we propose the use of a UCM that houses all attributes of a character. This would allow characters to become semi-autonomous and flexible whilst remaining narratively coherent and true to the author's intent no matter how the audience interacts with them.

Autonomous characters are not a new concept. In 1964, Joseph Weizenbaum created Eliza, a computer therapist (that many people mistook for being human), and since then the field has taken leaps forward with digital assistants like IBM Watson, Siri and Alexa, enabled by new Natural Language Processing and voice recognition capabilities. These systems are intended as industrial Q&A chatbots which keep audience interactions to a minimum, like an anthropomorphized search engine. But the application of storytelling in these systems, and the creation of characters within them, is more complex and rare. There are some notable advances in the games industry of course, however they are often heavily reliant on gameplay and fail-states.

A UCM allows for the combination of semi-autonomous characters that react to audience presence, together with rich story worlds crafted by the author. For the entertainment industry to be able to respond rapidly to the demand of this type of storytelling experience, a UCM will be needed to prepare the stage for mass-market interactive, hyper-personalized, audience experiences.

Authorship

With non-interactive, linear stories, writers must create characters that make sense within their narrative context. Outside this context, the character does not need to exist. They are static. The impact of casting the audience in the story and giving them influence, however, means that the context is always changing and our characters must be adaptable to that. Therefore, characters must be able to exist outside their narrative context.

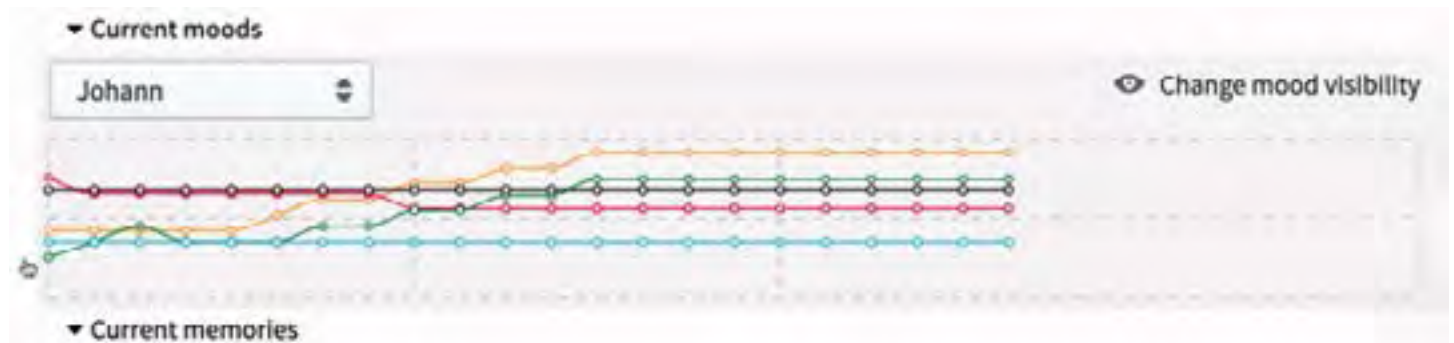
A UCM is a way to describe the character in a way that doesn't relate to the events that are happening

around it. The character's definition could be based on a backstory, or an archetype, or a series of events that have happened in the past and potential events that might happen in the future, or a combination of all of that. Once defined, a character will be ready to be placed back into a contextually fluid story world.

This needs new methods of authorship. It is possible to do it manually, writing each potential version of your character depending on the context, but it is time-consuming and soon exponential work. The author eventually, inevitably, has to stop writing iterations of their story, knowing full well that it cannot possibly cater for every possible human mind that will interact with it. With budget and time constraints, an author would not even be able to account for all the different minds within their own close circle of family and friends. That is where a UCM can be utilized, by using it as a prompt for AI to generate content. In this scenario, a prompt may be just a paragraph of text that includes important character attributes, story context, and memory of audience input. AI can combine this information to execute an appropriate reaction to audience influence. This reaction could be outputted as a change in character emotion, a body language animation, plot diversion or generative dialogue utilizing GPT-3, whatever the author decides. Where in the production process AI is implemented gives the creators the choice of how much control it might have. It could be used within the writing process, where the author is rehearsing the character, with each AI generated response vetted before it ever meets an audience. Alternatively it could be used real-time with an audience, although this of course carries some creative risk.

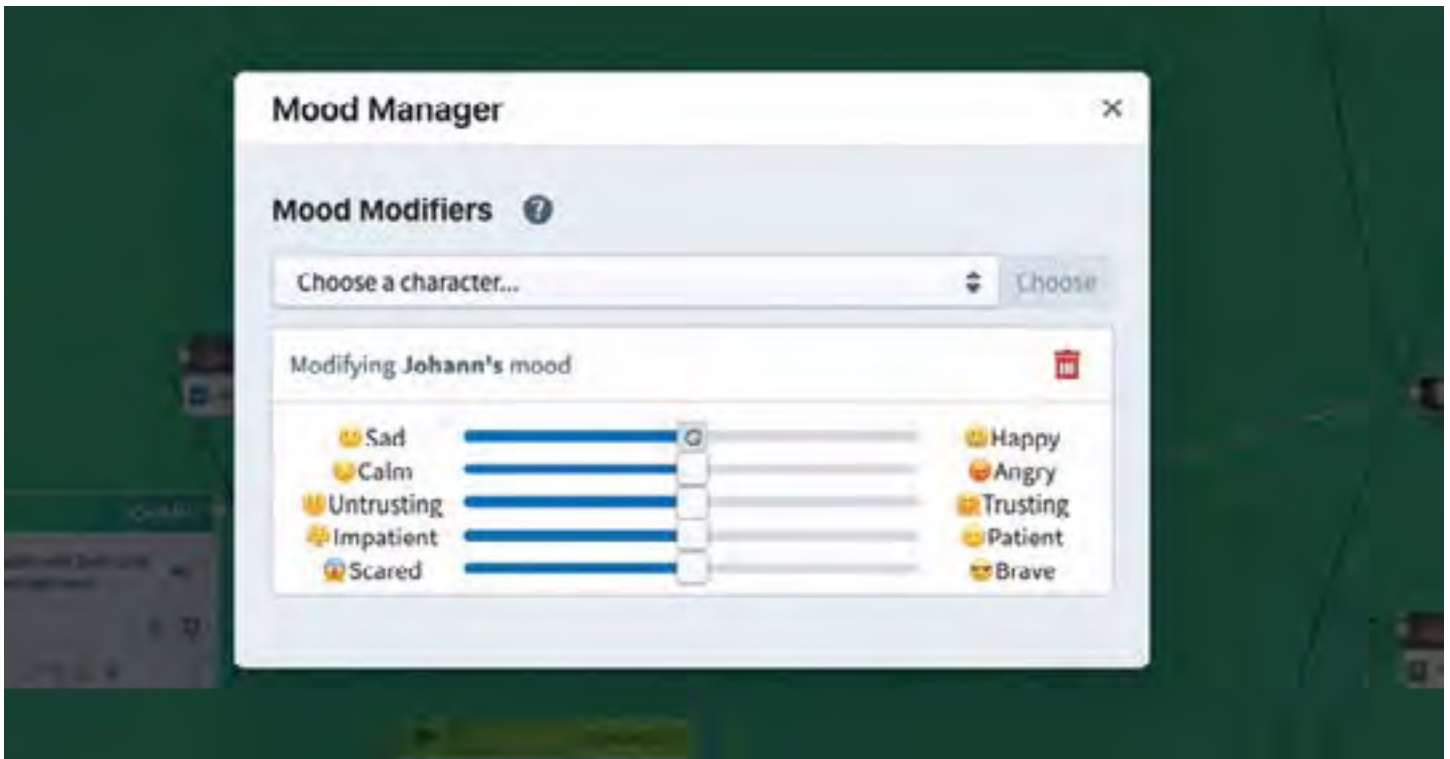
As writers and creators, we must realize that stories are not ours and ours alone. They never were. Narratives are a collaboration between author and audience. The author creates and expresses the narrative and the audience receives and interprets it. With novels, we hand over all visual aspects to the reader's mind. Even with film we hand over the responsibility of what to watch it on, what sound system to use, who to watch it with. With interactive stories where your audience is inside the story, authors must share the creative responsibility between themselves, the audience, and tools like a UCM. And audiences relish stories being shared in that way. Look at theater. Every live theater performance is essentially an adaptation of the rehearsed show, performed especially for that night's audience. And it is that personal adaptation that characters built with a UCM can offer: each audience gets their own personal adaptation of the characters and story world because the character is being shaped by the audience as it goes.

During the creation process with a UCM, writing will feel much like directing, with the author massaging and rehearsing the data inside their UCM until they get results that feel true to their character and world. The author will not be asking technology to fill in the blanks they haven't written yet, rather, they will be sending it on a very specific task to glue together all points of the story from no matter which way the audience looks at it.



Charisma.ai Character Emotion Tracker

With so many possibilities to track, and in order to make sure the story is always true to the author's intent, the way they use a UCM must be systematic and understandable. We look to the emotion engine used in Charisma.ai, as an example interface, which uses strict internal rule sets to create character evolution, and sliders to simply portray it to the author.



Charisma.ai Character Emotion Sliders

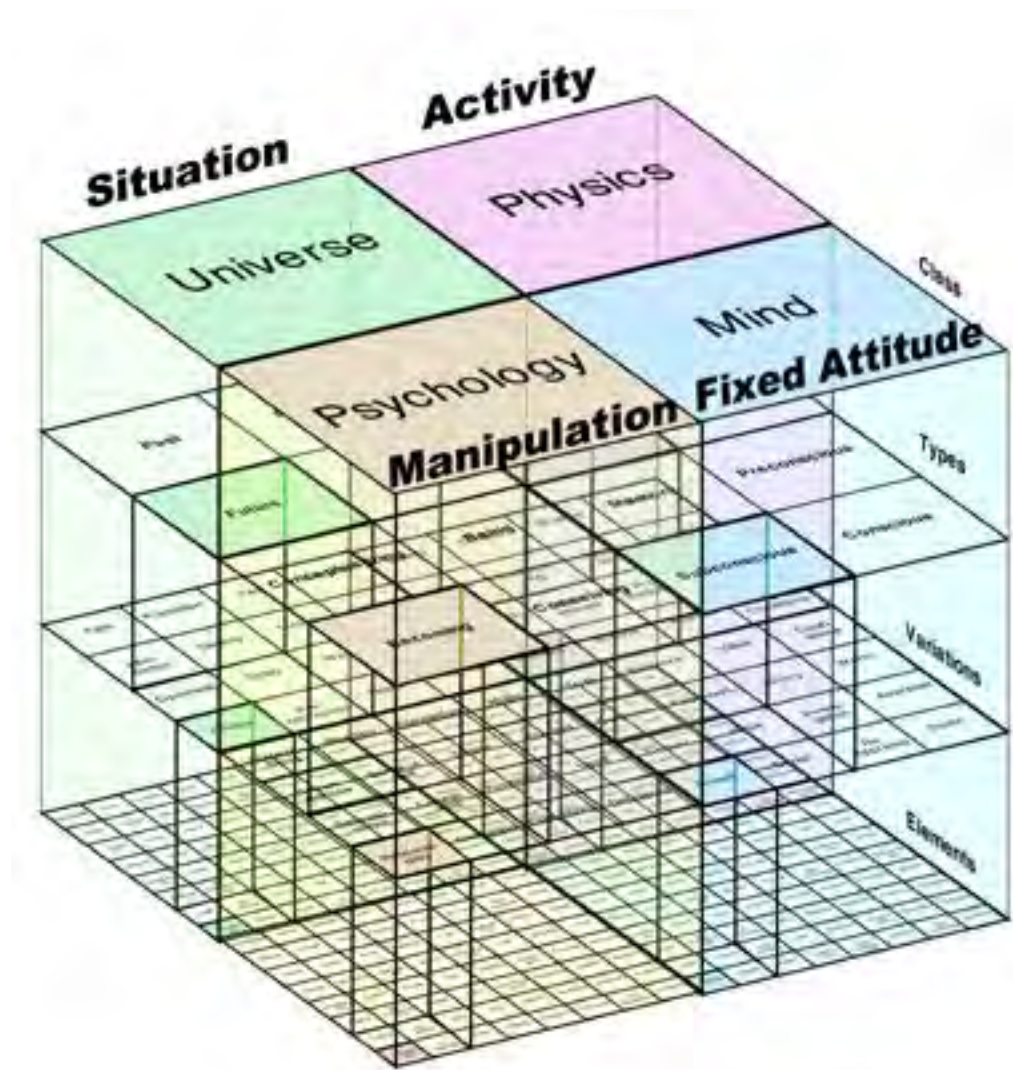
USES OF A UCM

Defining Character

For a UCM to have significant value to makers and producers, we need to equip it with a human-recognizable and programmatic way of quantifying character and story.

Dramatica is a theory of narrative structure which can be used to create original works with flawless structure, or analyze existing stories for flaws. Developed by Melanie Anne Phillips and Chris Huntley, it focuses on underlying structure, independent of subject matter, much like a UCM defines characters independent of narrative context. Importantly, Dramatica is based on human psychology. It connects character motivations to plot, theme, and genre and can predict how a character moves towards their goal. It can also accurately predict the structural components a story needs in order to be dramatic and effective. Dramatica can do this with very small amounts of data, and so it is a powerful tool for authors to use whilst developing stories.

An author could create a Dramatica character 'definition' that describes what a character does (motivation), why they do it (purpose), their standards of evaluation, and the methodologies they employ, and then use this to populate a UCM. Then, utilizing Dramatica's psychologically consistent framework, both the author and a UCM could determine how the character evolves, where they will end up, and how they will get there. It could be used to create a starting state, but also possible future states of the author's character. A UCM could use Dramatica to prevent inconsistencies in narrative and create a coherent, consistent character journey, whether during the creative process or dynamically in response to the audience. In this same way, a UCM could also be used to contain character behaviors within boundaries necessary for a specific IP or brand.



Dramatica Structure Chart

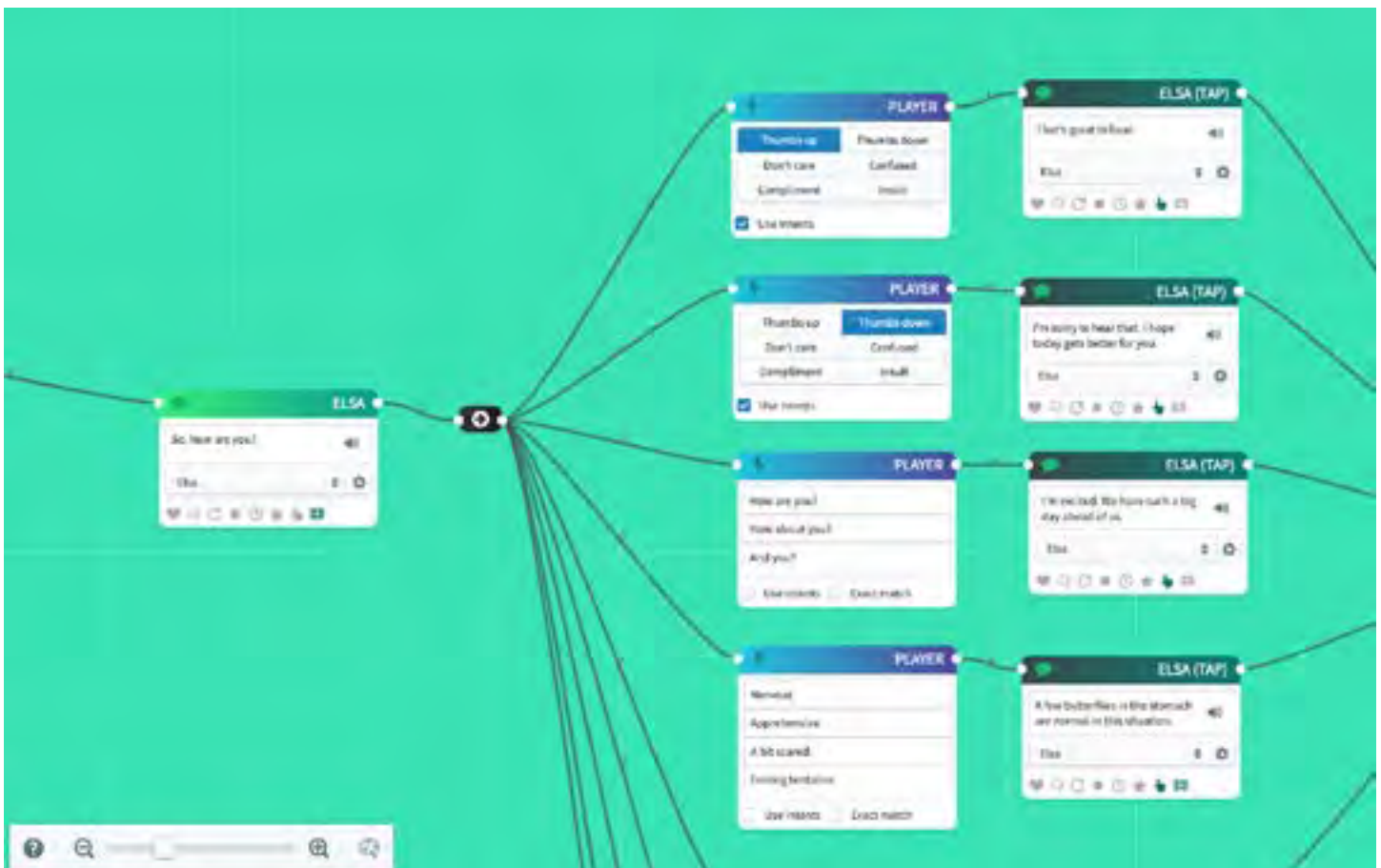
Dramatica's system is explicit, and therefore it yields dynamic and entertaining results from stories. It understands what creates tension, drama and resolution, and so, armed with Dramatica, we can trust a UCM to deliver story elements that satisfy our author's intent and our audience desires.

Despite the need to define our characters explicitly, the audience must still feel like they can affect them, and the story world. Therefore, it's important that our characters are never completely steadfast in every belief, just like a human a character might evolve in their beliefs and worldview depending on the right circumstances. A UCM can define a "starting state" of a character, but then our characters must have some sway where audiences can make an impact. To achieve this, a UCM must allow authors the ability to add weight to the importance of certain character attributes. This is where the author can decide what should affect the character most, and at what time, in what context. An author must decide how stubborn a character is in their methodologies, motivations and goals, and a UCM will keep hold of this data to be used within the story.

Conversational AI

Conversational AI has advanced rapidly in recent times, and many of us have contact with it every day. We may be most familiar with it within a customer service context, where a chatbot helps us set up a new phone contract. Or, we may be more accustomed to Alexa turning our music volume up. Conversational AI, and in particular NLP is commonly used for improving accessibility, streamlining customer service, and automating our homes, but NLP is rarely used for storytelling.

Within the context of a UCM, NLP can be used to interpret the audience input, much like how Charisma.ai utilizes NLP with its “player nodes” to group and refine player responses (either spoken or typed) to deliver a contextually appropriate character response.

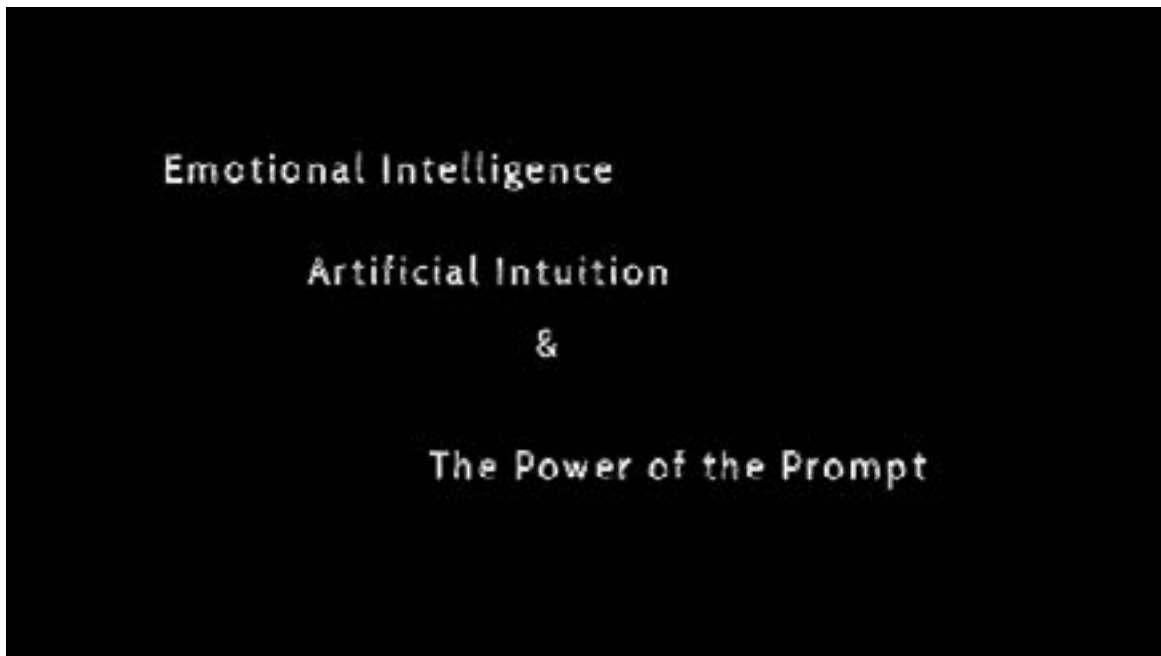


Charisma.ai Player Nodes and character responses using NLP

NLP could also be used to generate a dynamic response, if there was not one written already, to be added to the story either live or in advance of audience interaction. A technology such as GPT-3 would be able to generate a character response based on what the character had just heard. GPT-3 already can generate impressively believable and coherent text, so it could be a useful tool to partner with a UCM, and there will be many advances of new technologies like this in the future. A UCM should be agnostic to these new systems and should be designed to work with any technology as it develops.

The important thing to note is that a UCM can be used as part of a prompt for any AI technology to create content within a story. Prompts are a collection of details given to AI. If we ask AI to generate an appropriate character response, such as dialogue, the prompt itself should likely include things like the character definition that is held in a UCM, the narrative story forces that are currently being applied to that character, character specific colloquial styles and an awareness of the audience's relationship with the character. This could be summed up in as little as a short paragraph, or it could become more in-depth by including real-world knowledge such as the current weather, or political happenings. The size and detail of the prompts relate directly to what the author wishes to achieve.

The “Power of the Prompt” video below provides an outline of the elements needed to create prompts that allow an AI to generate informed and contextually appropriate responses.



With a UCM, the author can make the crucial decisions about who their character is, how they react, and what their motivations are. Once populated with this data along with knowledge of the story forces and audience input, a UCM can be used as a prompt for AI to generate content. As for what that content is actually outputted as, an author can choose what to aim for. It is not the intention that by using AI characters they should be able to provide an answer to every possible thing an audience might say, as this would likely detract from the pace, rhythm and intentions of the story. Rather, it allows characters to make an informed decision about how to move the story on taking into account the character motivations, story arc and audience input. This works much in the same way that an actor in a live immersive theater performance judges how to react to audience influence. They are constantly using their knowledge of the story world, along with the Director's intentions, to guide the audience through the most entertaining and rewarding version of the story. A UCM will act on that story and character knowledge, along with the author's intent to provide the audience with the best story.

Regardless of what the content output is, the important thing is that the characters make sense, and by using a UCM, it will. AI can ensure narrative coherence better than a human because it has only been given information from the author's and audience's intent, and therefore, it can only take logical steps.

How can we comprehend how AI will achieve this? We cannot. That's the point. Humans cannot process, keep track of, or even comprehend the amount of information that is needed to establish every possible outcome from other humans interacting with their story world. We do not have the bandwidth. But AI does. Once armed with the UCM, which is crafted from the author's intent, then it can match patterns to create hugely responsive and appropriate character and narrative actions.

The experience Container

Once a character is defined within a UCM, and you start to allow AI access to the data, you must contain the whole experience to ensure it remains true to the author's intent. We do not suggest that we set off a UCM and let it write the whole story. The author should be able to have direct access to the story at any moment and so this must be a fundamental feature in the system. We propose an idea of an experience container, which defines the story world and rules, much in the same way we define our character. We can look at it as a pinball machine. The character is a ball, formed by the author with set properties. The audience can influence the story in certain ways; through the plunger, the flippers, and they can tilt. All the little bumpers that the characters hit are the events, or things that can happen in the story world. And the whole machine itself is the experience container; it provides the environment for all these things to work together, a simulator. We, the audience, do not need to see how the machine works, or the intricacies of the wiring that fires up little lights and sounds. (In fact, it would actively distract us from our goal.) The container provides the playground for the audience and UCM(s), whilst its hard edges ensure the story and characters do not sway too far from the author's intent.

Nested within the experience container could be other containers. There could be a relationship container, whose sole purpose is to simulate and keep track of audience-character relationships. There could be a memory container that simulates the degradation of memories over time. These containers could use AI to navigate the character and audience through the story, always using the basis of a UCM to generate genuine-seeming reactions.

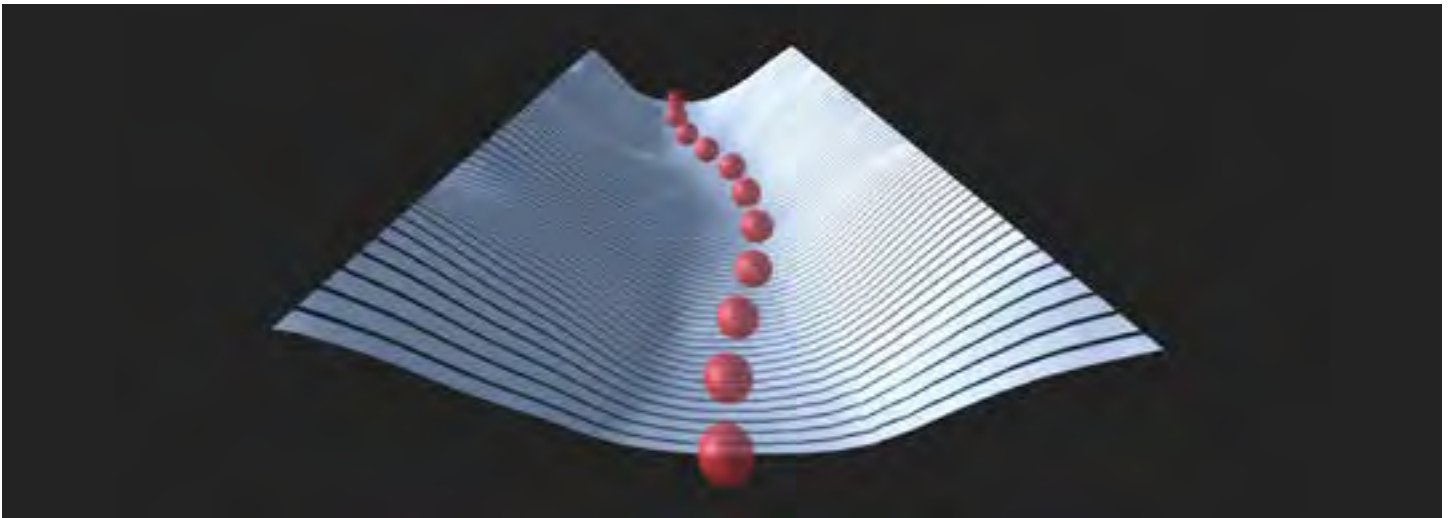
The only thing the author gives up is the specificity by which character reactions get delivered. Any control of specificity you give up, is in exchange for accomplishing a highly personal and rewarding experience that we have been unable to give audiences before. The thing that just happened only happened because you, the audience, were there.

Author-first

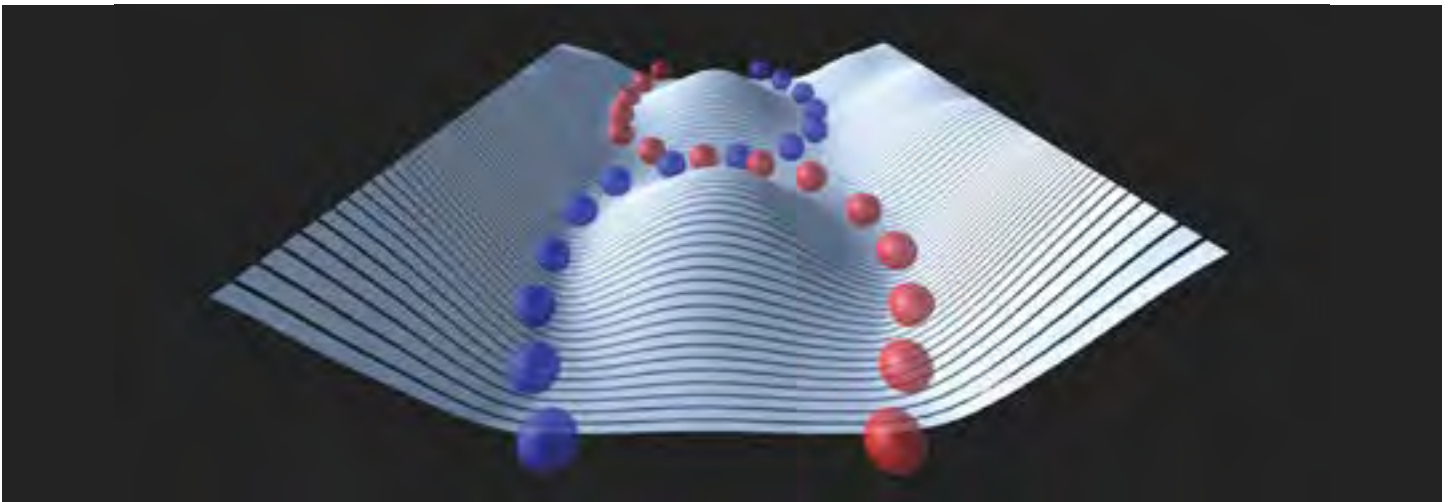
Semi-automation

No matter how sophisticated generative AI may be, it has no independent awareness of the author's intent or narrative context. It therefore must be constrained, and always work together with the author.

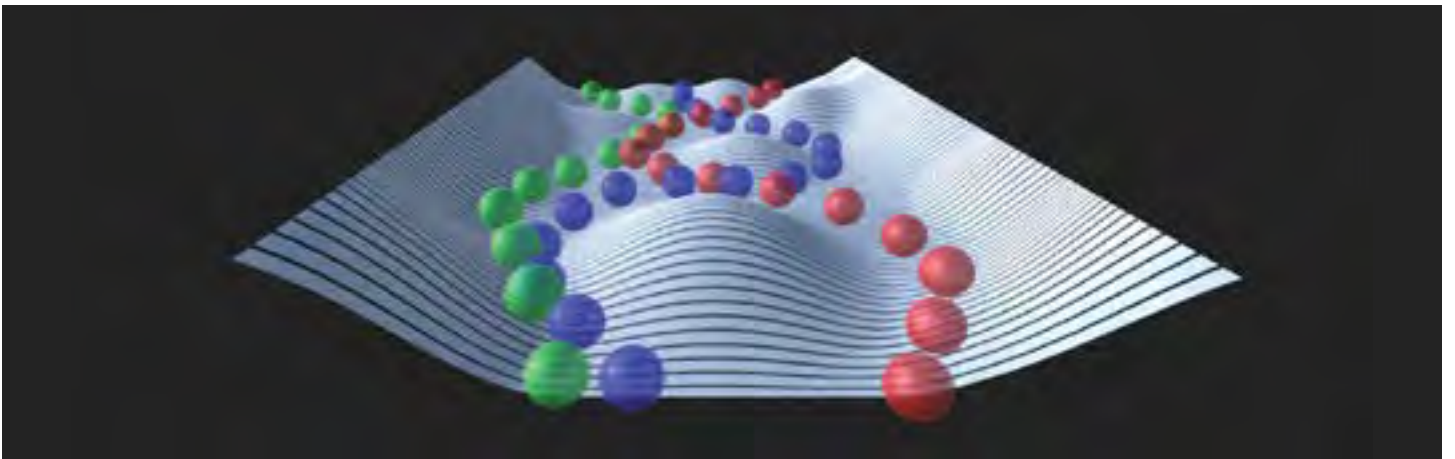
Within the experience container the author defines all the narrative elements, plot points and story possibilities. It should become a strict set of story rules and boundaries in addition to a UCM. We can look at this as if the author is crafting the parameters of the story narrative. Imagine this as the landscape in which their characters and the audience will roam. It contains all the things that possibly could happen in this story world, and everywhere you can go. The experience container houses this landscape, and it may use AI to generate elements within it. The landscape should have steeply sloped edges, like a skateboarding half-pipe, meaning it is difficult for the characters and audience to stray too far, and the further they do, the more they are pulled back; protecting the suspension of disbelief at all costs. These steep edges could be implemented in relation to the character motivations, story arc, necessary plot points, or whatever the author decides is important to their story.



Story Landscape for a novel



Story Landscape for a simple interactive story

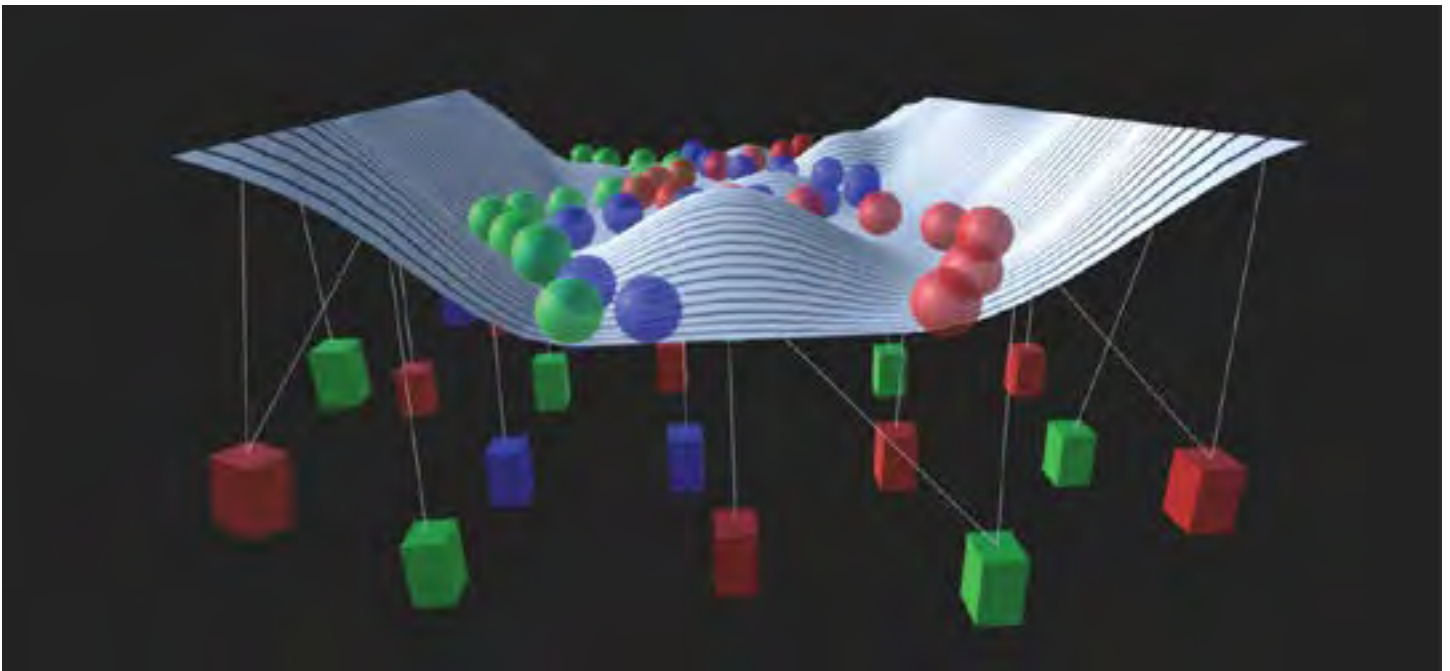


Story Landscape for a dynamic interactive story

In this way, you can also visualize how the author has created the landscape for individual characters within a UCM, meaning the character can never stray too far from themselves, and they will remain consistent. Both at a character and a story level, the author can, at any point, push and pull and sculpt the landscape, until they have a story world and characters that reflect their intent.

Using a UCM within an experience container allows authors to maintain control over their stories, whilst managing the almost infinite options arising from the audience constantly, and personally, influencing the story. As human authors, we cannot possibly account for the multitude of thoughts that might occur in other human minds and how that might affect multiple fictional characters. This is the problem a UCM seeks to solve, supported by AI.

And so, within the experience container, we can allow AI to take control of a designated number of regions of the landscape. The story becomes highly controlled and semi-automated, leaving our author with more energy to spend on better storytelling, whilst the AI looks at hundreds of millions of examples of conversations, at an order of magnitude we cannot comprehend, and matches them to the rules within a UCM and experience container. The output is a contextually relevant response that is coherent with our character and gives our audience the feeling of being heard and seen. When you look at this as an individual character-audience interaction, it's a cool effect. When you look at it as a whole experience, it becomes something much more amazing. It gives authors the confidence that the audience will always be heard.



Story Landscape for a dynamic interactive story with adjustable pillars

A UCM houses the author's intent, and therefore, with the addition of conversational AI, we have the ability to craft that intent into a semi-automated creation process, and for it to fill in the millions of gaps that arise when inviting human minds to interact with our narratives.

Containing the **Audience**

With such ability to quantify our characters, the theory of a UCM could also be used to learn about our audience. If our story can be learning about who our audience is, the chance for hyper-personalized experiences increases and stories will become truly unique to each audience member. By learning about our audience, we can allow characters to respond to them in a way that feels much like real life interactions.

By using the same structure as a UCM we could create a GCM (Guest Character Model). It would operate in much the same way as the UCM, but its starting state would be mostly empty. It would then get populated through interaction, learning about the audience as it goes.

What a GCM will then be used for within a narrative is vast. It could be used to edit the weighting of narrative paths, meaning that an audience becomes more likely to experience certain plot points if we know it satisfies their particular motivations and methodologies. It could be used to introduce characters into the storyline that it determines to have opposing motivations, creating tension and intriguing relationships. The scope of personalized narratives is hugely expanded once we can learn about who our audience is. An author could decide what would be most effective to learn about the audience, and then use those learnings to tap into their sympathies, passions, guilts, or whatever it is that will deepen their emotional reaction to the story.

FUTURE THOUGHTS

Other uses of this Model

A UCM will at its core be used to contain a character's attributes, backstory, context and personality. It can then use all of this information, and combine it with the narrative context and author intent, to action a response in an interactive narrative. Its primary function is to allow the audience to be placed inside stories where they have agency.

We also foresee other uses of the UCM with the addition of existing IP. As IPs already have backstory existing, they will firstly be a perfect fit for strength-testing a UCM. If we place Luke Skywalker within the UCM and ask it to generate responses from him, many people will be able to tell if those responses are consistent and 'in voice'. IPs will be a powerful resource to develop this tool, but aside from testing purposes, we can imagine vast possibilities from allowing an IP to live within a UCM. If we can put Luke Skywalker inside a UCM, we could place him in any story world we wish.

Releasing our well-loved characters from their narrative context opens up many possibilities for audiences interacting with them. We also release them from their media format and platform. A movie character can live within a game, or a live-streamed virtual gig. They can exist on a TV or a console, or on your mobile or watch, and they will be consistent. Taking the character out of their narrative context, means it is ready to be placed in a new transmedia context, free of the media boundaries we are familiar with.

How about creating IP? A UCM, much in the same way it can develop a character's future actions, could determine its past actions. It could fill in their backstory in a way that is consistent with a starting state in the story, chosen by the author. By using huge amounts of data from real life and fiction, the UCM will be able to birth a character, saving authors precious time and sparking ideas.

Implications and Challenges

There are implications and challenges that emerge with interactive characters who audiences can influence. As well as practical considerations, ethical issues should be considered much more pressingly and need to be thought through to ensure that a UCM is applied robustly and safely. Hybrid creative and technology skill sets should be employed to understand the implications as they relate to specific projects. What follows is a non-exhaustive selection of challenges, intended to start discussion.

A UCM should be designed to be technologically ambiguous, meaning it will continue to operate and evolve as technology does. However, new innovations from big tech (such as GPT-3 or Google DialogFlow) are not designed for the entertainment industry, and create results which are not optimized for storytelling. Whilst Charisma.ai has been designed with this purpose, implementations of new technology might not match the requirements of a UCM. Currently, also, GPT-3 exists in the English language only, which limits multilingual and multicultural use of this technology.

As humans, we tell our stories across multiple physical and now virtual platforms. The UCM caters for this storytelling opportunity but should support character narratives across whichever medium is chosen, including new consumer platforms that are anticipated.

The UCM also proposes that a character may have a much longer lifespan than with current media, meaning that a character's emotional and narrative journey may evolve over years rather than minutes. Maintaining an engaging character development will need thoughtful mapping as to how stories can be corresponded to long-term character motivations.

During these longer character lifespans, and with the potential introduction of generative AI, care needs to be taken for characters not to step out of their design framework or narrative. Microsoft's Tay bot learned from audience input and rapidly evolved into a vile persona. Therefore, any ceding of the creative process to automatic mechanisms needs to be controlled to maintain brand values.

More importantly than any practical challenges are the ethical implications that come from this sort of work. First, there are significant ethical debates surrounding data sets in AI. For example, GPT-3 has a more diverse data set than GPT-2, but Open AI, its creator, has not disclosed which data it uses for training, which could present diversity issues. Bias in AI remains an issue, though papers like Charisma.ai's unconscious bias in data sets paper, *It Speaks*, provides a direction of thought. We must bear in mind the western cultures that AI is trained upon, and importantly, who it is not trained on. Note also that Open AI has tight restrictions on use cases for GPT-3 currently, which might impact advancement of this and limit storytellers' ambitions.

Crucially, there are ethical concerns about how our audience consumes these experiences. We create and

encourage spaces where audiences can sustain relationships with characters. Interactive characters are significantly more believable than traditional forms, so challenging conversations around sensitive topics, for example law-breaking or suicide, need to be anticipated, as audiences confide in these characters. These are new forms of privacy for which guidelines need to be created.

Above all, it should always be clear to the audience that they are consuming a work of fiction. The UCM should not be used to create characters whose existence pretends to be real, however believable we might create them.

Ultimately, the focus on the challenges that surround these stories should not be on the technology, but on humanity. Our focus must be on allowing diversity within our stories and keeping our audiences safe.

CONCLUSION

Interactive stories are in the post-novelty phase, and audiences desire deeper engagement with characters. When audiences are cast inside a story, a UCM creates characters that feel like they have their own sense of purpose, their own life. Characters are no longer subservient, waiting for the audience to make a choice. Audiences are no longer on the outside, looking in, they are a part of the narrative.

A UCM provides clear prompts, direct from the author, that can be used to send technology on a very specific mission: to make brilliant stories for our audiences. By combining author intent with technology, it will create a sophisticated illusion that audiences invest emotionally in to. Characters and audiences could read books together, visit a virtual world together, spend 20 years together, and both sides will remember it. We could create story worlds where it's impossible to distinguish who is the character and who is the audience. A UCM is a tremendous power for authors and producers to create endless rich detail without it being a drag on speed, scale and authenticity.

Just like the travelling storyteller giving personalized stories to tavern-dwellers, we can now provide interactive stories where audiences and characters exist together.

The next step is to construct a proof of concept of a UCM. This will combine the ideas behind this paper and blend existing technologies to form a prototype. We see huge benefit from using an existing IP from within a well-known story world to strength-test the system whilst engaging the talent that came together to form the ideas of this paper based on their collective advances in this field. Creating a proof of concept will solidify the technical requirements needed to make it a universal tool, advance the potential of the art, and rapidly advance the evolution of interactive storytelling.

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