AI storytelling with children: Entertainment Platform or Creative Collaborator?

"You are who you choose to be"[1]

How children conceive of collaboration with a generative AI system

Anonymous author primo

Anonymous universal affiliation, not too long, abba-cdcd@yyyzzz.edu

Anonymous author secondo

Second author's affiliation, possibly the same institution or possibly not, rrrrrrrr@gmail.com

Anonymous author terzo

Third author's affiliation, possibly the same institution or possibly not, oooooo@gmail.com

How might children imagine a machine that could promote their creativity, boost them out of boredom, or dazzle their daydreams? Would they turn to it as a new entertainment center? A tool to test out their fears without "real-world" consequence, mediated through a modern interface? Could it be a new incarnation of the imaginary friend, their Jiminy Cricket conscience and sounding board? Would children interact with a generative AI as a creative collaborator or an entertainment platform, or something in-between? Would it be an either-or or a both-and? This position paper touches on the results of a co-design partnership that explores how children conceive of collaborating with an AI to support their creative play. The partnership involves a university-based child-computer interaction lab, a children/family research center, and a technology start-up developing an AI-based creative collaboration platform for children.

CCS CONCEPTS • Human-centered computing • Human computer interaction • Empirical studies in HCI

Additional Keywords and Phrases: child-computer interaction, storytelling, creative collaboration, human-machine teams

ACM Reference Format:
First Author's Name, Initials, and Last Name, Second Author's Name, Initials, and Last Name, and Third Author's Name, Initials, and Last Name. 2018. The Title of the Paper: ACM Conference Proceedings Manuscript Submission Template: This is the subtitle of the paper, this document both explains and embodies the submission format for authors using Word. In Woodstock '18: ACM Symposium on Neural Gaze Detection, June 03–05, 2018, Woodstock, NY. ACM, New York, NY, USA, 10 pages. NOTE: This block will be automatically generated when manuscripts are processed after acceptance.

[1] Quote from the 1999 film adaptation of **The Iron Giant** [1]

Figure 1: Exploring the various AI Playground Creative Storytelling Tools ("Story Jam")

1 INTRODUCTION

This paper summarizes a few of the design themes that emerged from two co-design sessions with 11 children (8-12 years-old) and adults that were held in November-December 2022 (see Figure 1). The goal of our first session was to familiarize children with the AI tools in a free-form manner, with as few direct prompts and/or direction as possible, other than asking the children to collaborate creatively with various AI tools being integrated with Story Jam. Goals for our second session were shaped by insights drawn from the first session, with a focus on social play. We invited the children to brainstorm ways to use the various AI tools (separately or in combination) to play with friends.

Interestingly, the system AI (developed from the Open AI toolset) contributed a well-argued synthesis of the stories and conversations that the children created with the AI during the first session (see Figure 2). One of the AI's responses aligned with one of the most salient themes that adults observed: "the children were curious about what the AI could do," and would pose sometimes extreme, silly questions and story situations to see how and "if the AI could understand and respond." Most of the children preferred the more naturalistic, conversational interactions that they could have when using Character Jam, and all asked for the tools to be presented as an integrated platform ("I want to see the AI [when I talk to it]," referring to Character Jam). Many of the children also requested more explicit onboarding and/or scaffolding to help them co-create more effectively with the AI tools.

1.1 Entertainment Platform vs Creative Collaborator

An overarching theme regarding the children's interaction with each of the tools was their desire to have the AI entertain them, rather than viewing it as a creative collaborator. One of the adults used the phrase "AI as court-jester," which is an apt summary of the ways in which the children interacted with the AI-tools (e.g., testing the tools' boundaries with murder, disagreement, violence, and "poop sandwiches"). In retrospect, the children's interactions could have been prompted by our invitation for the children to "play around" with each AI-based tool, rather than "do something creative with the AI."

We could have tied the question more closely with the a design session warm-up question: "What was the last thing that you did that was creative?". We did not explicitly ask the children to "create something together with the AI." This question was implicitly taken up by the older children (10 and older), but most of the younger children needed more guidance and modeling. The children are also used to "playing around" with, and testing prototypes, so they may have

been primed to explore and "test" the features of the tools rather than co-create with them. Of note, children's responses to the warm-up also raised questions about the types of activities they consider to be "creative."

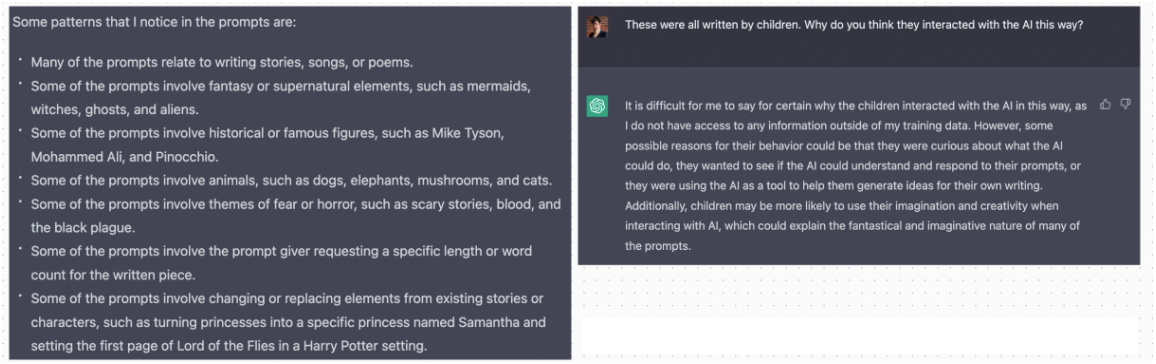

Figure 2: Generative AI Takeaways on children's story prompts and AI-collaborated story ideas

1.2 "Magic Button" help when I'm stuck or want a generative boost and "surprise"

During our group discussion summarizing ideas from our first session, one child noted that they wished the Playground interface could sometimes continue with more than one paragraph or series of sentences – to be more "generative." This prompted some discussion about having a "magic word" or "magic button" that would help a child user "get unstuck," like story starters/prompts that are often used in primary school writing., Some of the children wanted to be able to choose their own word that would alert the AI that they needed help; others thought an interactive feature, like a button, would work. During the debrief after session 1, adults discussed options for adding a variety of "magic" actions to the button, such as providing random surprises (unexpected story twists or characters). A follow-on design session included a "Do something weird" button – but the name or labels for the "magic button" should be play-tested with children.

1.3 Children want to compete or be challenged by the AI

During our second session, children described a variety of AI characters with whom they wanted to interact. Characters ranged from antagonists, such as the "evil" AI that generates a variety of Escape Rooms, boss monsters to "beat," and levels to an AI that helps you co-create a parkour obstacle course for your friends, to a mutant T-Rex that you fight, to an "Inventory AI" who gives you rewards for beating Escape Room levels (or whom you pay if you win in-game currency for beating levels). In addition, children wanted to create their own AI partners and/or antagonists, using Image Jam or other visual and audio tools. The desire to have a variety of AI "NPCs" is a recurring one in virtual worlds and digital games, whether single player or multiplayer. Interestingly, when children considered how they would interact with the AI when playing with friends, most saw themselves working against or competing with the AI, while either collaborating or competing with friends ("co-op" or competition or solo was acceptable to all the groups in Session 2). That is, the AI was often the antagonist when children imagined playing with friends (effectively, "us against the machine").

1.4 Hybrid Creations: Integrating "real world" physical proxies and "Me"

In both sessions, the younger children expressed the desire for more "tangible" creations. This seems to be related to AI studies that have revealed that many novices have a techno-optimist expectation that AI systems can be omniscient and rarely, if ever, make mistakes. During the first session, the two youngest boys asked the AI to "make" physical things (a calculator, a video game), or assumed that one word ("car") would result in the type of image that they imagined in

their mind's eye. They also emphasized physical creations when they tested the boundaries of the AI's expression (will it actually talk about making "poop sandwiches" with me?).

During the second co-design session, one group expanded on this desire to incorporate material, "real world" objects by describing ways that the AI could capture photos of physical objects that children created, like a pipe-cleaner horse, and somehow "mash" them into your story worlds with Image Jam. Two children expressed a desire to create "Mash-Ups," such as selfies that can be augmented with fantastical characteristics, like snakes coming out of your face. These suggestions also came from children who had worked with MetaDemo Lab's animated drawing tool – to which users can upload and animate sketches (like Google's PoseNet/TensorFlow tooleset).

Across both sessions, children described a desire to upload selfies or to create self-portraits that could then be integrated into story worlds or stories that they co-created with the AI. They also asked if they could upload images of favorite toys or pets and transfer them into a virtual space. Children either wanted some mixed reality version of themselves or the ability to mix and max various types of images and image genres. Their descriptions were reminiscent of card games that preschool and primary school age children play to focus on and learn descriptive language, such as Mix and Match Monster Cards or Mix and Match books.

1.5 Conclusion: Why Generative AI?

The co-design partnership described in this short paper could arguably align with the objectives of other CHI 2023 AI-themed workshops (e.g., AI Literacy, Child-Centered AI, Explainable AI). Why then, might (should?) children be included in discussions that will explore emerging definitions, design patterns, desired outcomes for **generative AI**? Despite the young age of our child collaborators (8-12 years old), their goals to co-create together fit best within several dimensions of a generative AI theme: "mixed initiative, human-computer collaboration or human-computer competition, with the main focus on interaction between humans and generative AI agents." Despite their position at the edges of mainstream populations (adults, professional artists, design practitioners, et cetera), the children in our group wanted to both collaborate and compete with AI tools: they wanted to "trash talk Ais to defeat them;" they imagined an evil Boss AI and a benevolent Inventory AI (award-generator); they could hold an AI party with friends, or invite the AI to integrate real objects from their everyday lives into stories they (e.g., a toy, a pet). How might we explore alternative and "speculative futures of generative AI" and possible implications for "human-AI utopias and dystopias" through the imaginings of children?

ACKNOWLEDGMENTS

We thank the children with whom we collaborate throughout the year for all the stories and systems they share and co-create with us, from the mundane to the monumental. We acknowledge the funding that supported our co-design sessions with [anonymized].

REFERENCES

[1] Brad Bird. 1999. The Iron Giant [Animated Film]. Warner Brothers.