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Characters of the Future. Machine Learning, Data, and Personality

Abstract

Fictional characters are changing from passive entities into active learners. New technologies are curating how characters speak, what they know, and what they can learn. Disruptive technologies, such as artificial intelligence (AI), robotics, and big data are changing what characters are, how they behave, and what media and texts they belong to. The ownership and authorship of characters is shifting from the professional creative industries to fans themselves. In this study, I analyze new tendencies and trends of how characters are increasingly based on new technologies such as chatbots, intelligent personal assistants, and holograms. I close-read different characters, such as the personal assistant Azuma Hikari and the hologram Hatsune Miku. An important theme that emerges in the discourses and narratives surrounding these characters is the meaning of artificial life and death. I analyze this recurring topic in-depth and conclude by theorizing the possible future of characters. Overall, I will argue that characters should not be read as passive entities authored by one specific instance anymore. Increasingly, characters are crowdsourced, highly technological-based, and self-learning. The future of characters, I argue, is therefore strongly mediated and interactive. New technologies are going to make us see characters in continuously new lights as well. In media studies, characters might best be understood as highly networked, non-human agents.



Introduction. Meeting an Artificially Intelligent Character

Characters are in a paradigm shift. Though we tend to associate the term ›character‹ with a fictional being of some sort, this concept is quickly shifting in the professional field. Increasingly, characters are not created by authors and imagined by audiences, but become avatars that users can control, and even intelligent agents in their own right. A character driven by machine learning, for instance, is not in any way predetermined or authored, and even goes beyond the procedural scripts and codes of an avatar. Such characters have the potential to become intelligent agents in their own right.

At the technology and media festival SXSW (Austin, 2018), I had an intimate conversation with a loveable AI-driven character. At TV Asahi’s booth, there was a robotic AI version of Gō-chan the panda bear, the mascot of TV Asahi. He drew a large crowd of visitors from all over the world, interested in interacting with him. Gō-chan’s ›mission‹ was to learn English in North America. This was clearly a fictional quest to engage with the visitors of the festival, a make-believe frame that belonged to the character, rather than the software. When I met the beloved panda, on day two of the festival, he already showed a good command of the language.

Nicolle: »Hi Gō-chan, I am Nicolle. Nice to meet you.«
 Gō-chan: »Nice to meet you, Nicolle, where are you from?«
 Nicolle: »I am from the Netherlands.«
 Gō-chan: »Nicolle, what sports do you like?«
 Nicolle: »I like swimming.«
 Gō-chan: »I like swimming, too!«

My conversation with Gō-chan lasted for two minutes, during which he gathered several replies; he subsequently created a rap song about me and my hobbies. It turned out his robotic head operated as a screen as well. He showed me different recordings of myself, as well as additional footage from his database as he sang his song.

The artificially intelligent Gō-chan is produced by Nextremer in collaboration with TV Asahi. The AI character can communicate with you, observes you and records you, and finally it even creates a song for you. By interacting with its users, the Japanese Gō-chan also learns to speak English. In other words, this character has machine learning skills and learns from the input that it is given.

As a mascot character, Gō-chan is a rather flat character, best described with the term *kyara* (cf. AZUMA 2009). The term *kyara* was coined by Itō Gō, who argues that since the end of the 1980s, characters in Japanese popular culture have become increasingly detached from stories, just like mascots (cf. ITŌ 2005). *Kyara* have a different function from *kyarakutā* (actual characters) embedded in narratives. *Kyara* are iconic and recognizable, and are meant to trigger fan affect at first sight.

Drawing from Itō’s theory, Azuma (2009) writes that *kyara* are best understood as icons in a metaphorical ›database‹ that exist betwixt and between



multiple narratives—or even altogether outside of them. Their purpose is to raise a specific form of desire with their fans, also known as ›moe‹, which is triggered by their aesthetic appeal and recognizable tropes, such as their cuteness or their glasses (cf. AZUMA 2009; GALBRAITH 2009). Gō-chan is such an icon—simplistic in character design, with large cute eyes and a big head (cf. fig. 1).



Fig. 1:
Gō-chan at SXSW (photographed by the author, 2018 – N.L.)



Gō-chan is a straightforward *kyara*. Rather than being connected to any complex story, he simply represents the television network TV Asahi. In this sense, he is similar to other *kyara* like Sanrio's Hello Kitty or like Dejiko, the mascot of a Japanese retail chain store (Gamers). Such character types can be iterated in many texts and in merchandise, from stickers to keychains to toys. Gō-chan shares a family resemblance with characters like Hello Kitty. As Karen Ressler writes for the *Anime News Network*:

Gō-chan debuted in 2011. Yuko Yamaguchi, the designer of the original Hello Kitty, personally designed the character [sic] a collaboration between TV Asahi and Sanrio to raise awareness about TV Asahi's Digital 5 channel. His name (»Gō« sounds similar to the Japanese word for »5«), »V« shirt design, and May 5 birthday all represent the number 5 (RESSLER 2016: n.pag.).

Gō-chan is not completely without a backstory, though. He is the prince of ›planet EXPANDA«. This backstory was explored in several media, such as in the film *Gō-chan: Moco and Friends From Peculiar Animal Forest* (TV Asahi 2016) for young audiences. In 2018, a new *Gō-chan* animation series aired with a similar cast of protagonists. According to the official TV Asahi site, Gō-chan is »curious by nature and loves to cheer on others«¹. The AI version of Gō-chan was indeed a cheerleader, rapping for me enthusiastically and praising me as he mastered the English language through machine learning. By endowing a *kyara* such as Gō-chan with artificial intelligence, it has the potential to develop a sort of mind of its own and in the future, perhaps, even construct its own personality and ›voice«. Such characters, in a way, have the potential to develop beyond the *kyara* types into entities of their own.

This essay explores the future of characters. It goes beyond the implications of ›characters without stories«, and questions instead what happens when machine learning allows characters to increasingly ›write themselves« by learning through databases and user interaction. I explore trends like robotics, machine learning, and holograms to see how we increasingly make sense of characters whose stories are created by new technologies and by our interactions with them.

Characters and Avatars in Media Studies

The study of characters is not limited to literary studies of character and characterization, but has become an interdisciplinary endeavor. In game studies, fan studies, and Japanese studies in particular, characters have received wide attention. Most particularly, I want to unpack several theoretical lines of inquiry that by no means exclude each other, namely research approaches that focus on characters as transmedia entities flowing across narratives. In terms of reception, characters can even function as stars that audiences admire, but also be understood as affective beings that evoke responses with audiences and thus generate genuine social impact.

¹ <http://www.tv-asahi.co.jp/go-chan/e/character> [accessed October 23, 2018].



One challenge of studying characters is that they increasingly circulate in different domains of consumer culture, and thereby obtain new meanings for different audiences. Characters are omnipresent on billboards, as marketing tools, and as commercial vehicles that appeal to audiences. For instance, brands are continuously humanized and anthropomorphized in Japan (cf. WILDE 2016). Reading characters is not easy in this contemporary landscape, since the storyworlds that audiences deal with are becoming increasingly complex. These storyworlds pose challenges to interpreting characters, since they are not confined to one source text anymore. Increasingly, characters are written and rewritten in many transmedial iterations as well as within fan culture. A character such as Sherlock Holmes has been reimagined continuously throughout history by its fans and by different producers, but all these different installments, in a way, also solidify the overall character (cf. STEIN/BUSSE 2014). Iconic characters such as Holmes, Han Solo, Sailor Moon, or Batman are part of a transmedial flow of stories that goes beyond one source text (cf. JENKINS 2006).

In fact, the concept of ›source text‹ is a highly problematic one in today's media entertainment. Many characters are inhabitants of increasingly complex transmedial worlds and franchises, rather than of single works or even of specific stories, such as *Star Wars* or *The Lord of The Rings* (cf. KLASTRUP/TOSCA 2011). These franchises often ›burst‹ outside the original text itself into online games, film series, or merchandise articles. In Japan, specifically, this transmedial mobility has been called a ›media mix‹ by Itō Mizuko (2007), which describes not a concise transmedia story, such as defined by Henry Jenkins (2006), but rather a complex flow of characters in all their heterogeneous instances. The Japanese media mix strategy relies on bricolage, rather than on one complete story or any coherent storyworld.

In Japanese popular culture, characters even increasingly come without any stories. In the introduction, I mentioned Gō-chan. This is a pivotal example of a character without a story. He is a mascot: a ›*kyara*‹. Cultural critic Azuma Hiroki has discussed flat characters, or *kyara*, as well as their prominence within contemporary Japanese culture. He is critical of the emergence of *kyara* since he poses that this runs parallel to the loss of ›grand narratives‹ in manga and anime. He states that, whereas Japanese audiences once focused on animation with complex world-building such as the *Gundam* series, now its popular culture is turning predominantly visual. Increasingly, the production of manga and anime seems to rely on what Azuma calls a ›database‹ of references. In other words, this database contains about qualities of characters that are easily adaptable. These pre-narrative tropes (e.g. ›cute cat girl‹) are continuously repurposed in Japanese popular culture by the industry and the fans themselves. Azuma argues that this database of tropes diminishes the quality of anime and manga, since it results in flat characters and an overall lack of narrativity.

Azuma also explored characters further in his journal, *Shisōchizu beta* (›Map of Thinking‹), and with his publication company, Genron. He



additionally co-created the Vocaloid opera *The End*, featuring Hatsune Miku, which I will close-read further on. This opera can essentially be understood as a critique of flat characters. Azuma's theory on characters and their fandom has been influential in Japanese studies. Drawing from the ›*kyara*‹ concept, Lukas R.A. Wilde even argues that many narrative concepts do not apply to these mascots:

Conceptions [of characters], which place their emphasis on a) coherent storyworlds and b) on intersubjective commitment, would be applicable only under severe constraints on beings such as Hatsune Miku, (Hello) Kitty, or Ellen Baker. For Japan, however, these must be regarded as absolutely typical of media convergence strategies (WILDE 2018: 118, translation N.L.).²

Even in Western cultures, characters can leave or transcend their original text and become symbols or celebrities in their own right (cf. HILLS 2003). Virtual stars, such as the Minions (originally from Universal Pictures' animated film *Despicable Me*, 2010, and later the stars of their own, eponymous film in 2015), went beyond their original source texts and became iconic, as Rebecca Williams (2018) argues. In her study on costumed characters in theme parks, she explains that fictional characters can become ›ani-embodied‹ characters. Animated characters lacking a real-life counterpart, such as the Minions, can be represented in three-dimensional space in costume. In other words, costumes give mascot characters new meanings by embodying them, allowing for fans to tactically interact with them. Hugging characters like the Minions and Hello Kitty in theme parks, for instance, allows audiences to deepen their relationship with them.

In this sense, ani-embodied characters are rather like stars. Williams draws her reading from Bob Rehak (2003: 477) who writes: »The fan movement surrounding Lara Croft—one of the most recognizable, popular and lucrative media stars working today—is all the more remarkable given that its object does not, in any localized or unitary sense, exist«. However, reading characters solely as virtual stars with fans of their own does not suffice for the purpose of this study. As MacCallum-Stewart notes about Lara Croft, this character is more than an observed and admired icon. She is a playable character and an avatar that her players can relate to:

I have an abiding affection for Lara, both as a subject of critical debate and a gaming icon. Lara is an irrefutable part of my gaming life and has been since her inception in 1999, and when I play her, I revel in her strength and abilities, her wisecracks and her cheesy lines, as well as appreciating that she is not particularly realistic. In this respect, she is much the same as every other gaming character I have ever adopted (STEWART 2014: n.pag.).

Affect and interaction are key points, then, which should be taken into account when studying characters and avatars. They are fictional bodies that audiences are affected by, and that some fans even desire. Hannah Wirman (2015), for instance, speaks of her ›love‹ for Princess Peach, followed by a reading of

² Original: »Auf Hatsune Miku, (Hello) Kitty oder Ellen Baker wäre eine solche Konzeption, die den Fokus a) auf kohärente Storyworlds sowie b) auf intersubjektive Verbindlichkeit legt, nur unter starken Einschränkungen anwendbar. Für Japan müssen diese dennoch als absolut typisch für Medienkonvergenz-Strategien angesehen werden.«



diverse fan works that cast Peach in a range of roles from damsel in distress to empowered sex object.

Through various media such as drawings, stories, videos and comic stirs, fans show their love and hate for the game and game culture. Multiple fandoms come together in texts that refer to games in general and Peach's fictional character simultaneously. Fans' contribution is a power of love toward a computer game; her or his object of desire (WIRMAN 2015: 145).

Wirman's study shows that fans use Peach not merely as an object of affection, but also as a way to critique game culture and, for instance, its ›damsel in distress‹ tropes.

However, affect for characters is a complicated matter and does not need to be a healthy or a loving relationship between character and fan, necessarily. In fact, fans have shown throughout the years that their affect for characters can also consist of strong feelings of hate. In his case-study on the ›anti-fandom‹ of Jar Jar Binks, Matt Hills argues that the hate for this character should not be read as false or humorous, but as a genuine affective response: »[T]hese discourses can be viewed as part of an affective discourse which works, emotionally as well as cognitively, to legitimate the fans' prior investments in the *Star Wars* universe« (HILLS 2003: 80). *Star Wars* fandom, in particular, has not been kind to its characters. The character Rose Tico from *The Last Jedi* (2017) was met with so much hostility that her anti-fans threatened the actress (Kelly M. Tran) and forced her to leave social media. When studying characters, such an affective reception, whether positive or negative, needs to be considered.

Finally, characters are increasingly interacting within complex (technological) landscapes and even media ecosystems. Since this is a future-oriented case study focused on new media and technology, it is important to bear in mind that future users might have a more complex relationship with characters. In many new forms of media, characters are not passive entities that audiences consume; increasingly, they are becoming ›digital puppets‹ that users interact with and give shape to. Once machine learning enters the picture, characters also learn from their interactions with users and become new entities altogether, which perhaps will no longer fit the current conceptual box of ›character‹.

Avatars in gaming pave the way for these changes. According to Andrew Burn and Gareth Schott (2004), the avatar is a playable character that is simultaneously a ›heavy hero‹ (a character that can be read and interpreted) and a ›digital dummy‹ (an agent of interaction and a representation of the player). Because players interact with characters, certain complexities can emerge. One player's version of Gerald from *The Witcher* (2007) may make different choices than another's, which leads to a very different development of the character within each game experience. Game characters carry meaning and identity outside of the text as well, for instance in the ›headcanon‹ of fans (cf. CARTER-MCKNIGHT 2018), in fan costumes (cf. LAMERICHS 2018), or even as a



kind of ›virtual currency‹ that professional gamers level up and finally sell (cf. CASTRONOVA 2005).

Characters, then, increasingly affect our everyday life, our imagination, and even our economy. In contemporary media cultures, the study of characters implies going beyond narrative to see how characters affect different consumption spaces, including social and urban spaces. Roberta Pearson (2007) emphasizes that characters are networked, and that the study of characters should always be relational. While analyzing character features and their development has its own merits, this cannot be done while neglecting the social environments which the characters belong to and which shape them. However, Pearson's study is restricted to televisual characters and she primarily takes the production context of these characters into account. In the case of interactive characters, such as avatars, other contexts and actors in the network matter as well, such as the player and even the digital interface itself.

Characters, then, must be read as social actors, which are networked and move beyond narrative. Wilde (2016) argues that characters in Japanese culture are not just fictional protagonists or mascots, but can function as social actors. Characters are vehicles of social change, and should be read as »social actors« of cultural agency (WILDE 2016: 639). In this article, I thus understand characters as actors that are interpreted through affective reception by their audiences, able to influence diverse aspects of our societies. I will focus on technological characters that rely, for instance, on data or AI. They are not only ›written‹ but in fact interacted with. In the near future, the word ›character‹ might not even suffice to describe these entities, as they increasingly learn and ›write‹ themselves procedurally.

Approach

In the coming years, technology will make it easier to produce different forms of interactive and animated characters through means such as virtual reality and holograms. These characters will not only be represented *in* new media, but also fueled *by* artificial intelligence. In the rest of this article, I will focus on various instances and representations of such artificial characters. Primarily, I rely on close-reading as a means of studying how these different characters are embedded and created in new technologies, and what fictional narratives emerge around them.

A crucial factor for my sampling was what these different case studies represent, and how they can be culturally read and understood. I have picked examples that are salient and exemplary in relation to the phenomena that I study, namely the current changes in the relationship between characters and technology. The focus throughout this study remains on cases that primarily come from industrialized and advanced countries that are paving the way in AI, voice interfaces, and other ›disruptive‹ technologies. It should be no surprise, then, that most examples originate from the United States and from



Japan, where deep applications of AI are being developed (and also culturally reflected upon in fiction). For instance, I incorporate a close-reading of the opera *The End* (2017) starring the hologram of Hatsune Miku in a thought-provoking artwork about the nature of artificial life and intelligence. Characters of the future come in many forms. In many cases, these technologies converge into one device. The Gatebox software that I analyze, for instance, features elements of all these technologies within a portable hologram box that users can interact with.

In my selection, I relied primarily on recent examples from the past three years, although I historicize these with other depictions of AI that continue to influence how we think about such technologies. In this sense, we cannot speak of ›AI‹ and of ›voice interfaces‹ without considering one of its first iconic depictions, namely the Hal 9000 computer in Stanley Kubrick's *2001: A Space Odyssey* (1968). The remaining part of this article can be read, then, as both a study on the future itself and on characters of the future, as well as on the tropes that shaped them.

›Azuma Hikari‹ or The Rise of Voice Interfaces and Humanization

A recent technological development is the increase in interfaces that rely on voice, rather than text. In the past years, we have seen a mass market developing around speech software. We gradually have to become familiar with personified interfaces that talk to us, often referred to as ›personal assistants‹ or ›companions‹.

Amazon's Alexa is a great example, first employed in the smart speakers Echo and Echo Dot. Alexa plays one's favorite music, audiobooks, and podcasts; she forecasts the weather and syncs with other devices. Inspired by *Star Trek's* federation computer (cf. GREEN 2018), she assists users in their daily routines. This is just one example of how interfaces are personified and will shape our work, our habits, and our media consumption. To activate Alexa, we need to speak her name and address her personally.

In Japan, the tech company Vinclu developed ›Azuma Hikari‹. She is a small hologram in Gatebox, a smart device which also functions as a personal assistant. The device is designed as a clear projection tube that shows the computer-animated AI character Azuma Hikari. Vinclu is planning multiple avatars and personalities for the Gatebox, which functions like a portal to the respective characters' reality dimensions (cf. GALLAGHER 2016).

What is interesting about this case, and what will be an ongoing trend in the future, is that the interface is heavily personified and has developed a fandom of its own. Users can even marry ›her‹, meaning the character named Azuma Hikari, by submitting a registration form on the official website.³ The

³ <https://gatebox.ai/home/> [accessed October 23, 2018].



form is called »jigen tokōkyoku kon'in todoke 次元渡航局婚姻届«, lit. »marriage registration with a dimension-travelling lady«. In other words, the character cannot be separated from the interaction between its designers on the one hand, and its fandom and its users on the other, who can even »officially« become the character's partners. Fandom changes when characters become so »real« that we can marry them, admire them as holograms in our real spaces, and make them our »*waifu*«.

In a way, such a background for the character fits the device well. Each user has their own Gatebox, and the contract is very specific about the fact that users can marry just *one version* of the character, namely the hologram in their own personal Gatebox. This allows all users to marry their specific version of Azuma Hikari. Because she is a dimension-travelling entity, not unlike the famous Doctor in *Doctor Who*, she can exist in multiple places at the same time and be in countless individual emotional relationships with all her users and fans. The prospect of choosing between different hologram avatars in the same box (cf. GALLAGHER 2016) will give a more complex and personalized touch to the Gatebox, allowing users to relate to a character of their choice.

This case befits Japanese culture, where the relationship between humans and objects is often considered »intimate«, and where objects have always been personified to some extent. Interestingly, not only are intimacy and affect emphasized by Gatebox, but also the idea that the character is not one entity, but multiple. This Japanese example pushes personal assistants further than the developers of Alexa ever did. It is fascinating, but also characteristic of how Japanese culture deals with characters. Azuma Hikari has limited machine-learning capabilities, but stands out in terms of background narrative as well. To entice fans, a whole background was introduced to the interface. This raises the key themes that I would like to dive into further, such as how users can interact with machine-learning technologies, and how AI is depicted in narrative media.

»Monika« or Reflections of AI in Popular Culture

Especially in the area of gaming, developers are embedding AI technologies more frequently. When *Cyberpunk 2077* was announced at E3 (2018) by Projekt Red, the press was introduced to a detailed, vibrant, and futuristic Night City, the fictional setting of the game. What impressed critics most was how dynamic and rich the city came across. Indeed, as reported and translated in *Game Pressure* (cf. LUCKIE 2016: n.pag.), the developers had applied for funding for the engine City Creation: »a complex technology for creating a huge living city, playable in real time, which [the technology] [sic] is based on rules, AI, and automation, and supports innovative processes and tools for making top-notch open-world games«.

While AI can be used to fuel game processes and worlds, it can also be used to create self-learning characters. The software Spirit AI (2018) creates



implementations of AI in augmented reality (AR), virtual reality (VR) and other applications. »We breathe life into digital interactions using the transformative power of artificial intelligence. We call it ›digital spirit‹, but simply put, it adds humanity«⁴. In their PR messages, the company consistently relies on metaphors of ›life‹ and ›the human‹, to show that it can add unexpected, self-learning elements and algorithms. Though AI is still very narrow today, and these messages can be understood as branding, I find the metaphor of ›life‹ an interesting one. The question whether an AI is ›animated‹, and in what respect, goes back far. To what extent is an AI ›human‹ or ›non-human‹, and can it experience feelings or empathy?

In fiction, AI characters have been represented from the start both as benign and as a potential source of moral panic. One significant 20th century example of dangerous AI is found in Karel Čapek's play *R.U.R.* (1920), which depicts organic beings rather than mechanical ones, but otherwise fits contemporary AI narratives. Another notable early example of evil AI is WOTAN (Will Operating Thought ANalogue) in the *Doctor Who* serial *The War Machines* (1966). Early depictions of good-natured AI characters include EPICAC from Kurt Vonnegut's eponymous short story (1950) and Mycroft from Robert A. Heinlein's *The Moon Is a Harsh Mistress* (first serialized 1965). These living computer characters are often presented as emotionally human-like and as relatable within their narratives. Whether their intentions are good or evil, AI characters are commonly depicted as transcending the ›bodies‹ of their visible hardware, e.g. the omnipresent eye of the malevolent Hal 9000 in Stanley Kubrick's *2001: A Space Odyssey* (1968).

The living operating system Samantha in Spike Jonze's movie *Her* (2013) is narratively similar to Mycroft and to Hal 9000 in her high-omniscience and in her control over the human characters' living spaces, but the film additionally incorporates modern romance tropes by depicting her as a love interest in her own right. Still, even in *Her* the final plot twist dictates that an AI is *not* like us. In this film, which is all about intimacy and love, the AI finally learns to love—but in a way very different from her human mate. She turns out to have many relationships with others simultaneously, in real time. Another example of a loving AI is that of Denis Villeneuve's *Blade Runner 2049* (2017). Joy, the protagonist's holographic AI girlfriend, seems to exhibit true affection for her companion even when her capacities for physical interaction are quite limited. She is emotionally depicted as human through and through, showing genuine empathy for the protagonist which continuously contrasts with her lack of physical human form.

While there are many optimistic examples of AI representation, the trope of the evil AI is still strong, particularly in gaming. This is not without irony, given that the game industry is at the forefront of embedding AI in its products itself. A game that truly follows Kubrick's tropes of the sinister AI is, for instance, *Portal* (Valve, 2007), characterized by its unique puzzles and its

⁴ <https://spiritai.com/> [accessed October 23, 2018].



black humor. After the player character Chell awakens from stasis, she receives audio messages from a female AI called GLaDOS (Genetic Lifeform and Disk Operating System). Chell then has to solve puzzles by finding routes through test rooms with the help of her portal gun.

Portal is one of the few games in which a computer character addresses the player directly and consistently throughout the experience. This choice truly evokes the idea that the AI is playing mind games with Chell, which has the potential of evoking the feeling that the computer game itself is playing mind games with the gamer. While GLaDOS' comments start rather descriptive, as the game progresses she reveals herself as more and more sardonic and antagonistic. In test chamber 15, she tells the player character: »Did you know you can donate one or all of your vital organs to the Aperture Science Self-Esteem Fund for Girls? It's true!« The sarcastic monologues spoken by GLaDOS owe much to Ellen McLain, her talented voice actress, and to the technological manipulation of her voice into a cold, sometimes malfunctioning, robotic sound. Defeating the AI and obtaining freedom is the main purpose of this game. Similar to Kubrick's *Hal 9000*, *Portal's* AI is materially depicted as different orb-shaped cores that each have their own personality.

Another game in which the AI takes over is *Doki Doki Literature Club!* (Team Salvato, 2017). In this dating simulation, the player can choose to go out with different female characters. One of them, Monika, is a jealous NPC and wants to claim the player for her own. To do this, she is presented as going deep into the source code of the game itself in order to hack the other characters and plot lines. Slowly, she starts killing the other girls by messing with their codes. At the end of the game, Monika takes over, and reveals herself to be a sentient AI-driven character. She possesses self-consciousness and is constantly learning. She lectures the player for almost a full hour in a lengthy monologue about her choices, her life as an AI, and her obsession with them.

Critically, *Doki Doki Literature Club!* is more than a horror game. It must be understood as a deconstruction and critique of other dating sims which audiences may be familiar with. Games in this genre are often filled with flat, stereotypical characters, such as the ›*meganekko*‹ (girl with glasses), the ›*tsundere*‹ (girl who alternates between kindness and coldness), and so on. Such characters are created to inspire *moe* (desire for characters and their visuality). As Patrick Galbraith writes (2009), *moe* intimately connects the flatness of characters to the eroticism in otaku culture. In his concise definition, *moe* is »a word used to describe a euphoric response to fantasy characters or representations of them« (GALBRAITH 2009: 1). By presenting one of the girls as sentient, *Doki Doki Literature Club!* can also powerfully critique *kyara* as flat characters. Monika is undoubtedly one of the most intelligent and rich characters in dating sim history, because she is presented as self-learning and, in many ways, smarter than the player. Still, by using the same tricks as her, the player can and must delete her code and thus end the game.

What all these game representations have in common is that the respective AI is not human at all, but remains fundamentally different from us.



Taking cues from Hal 9000's classic film characterization, GLaDOS and Monika show no desire to collaborate, no empathy, and do not understand life as such.

Popular culture constantly warns us against the dangers of AI. Television shows such as *Westworld* (since 2017) provide us with images of rich theme parks in which humans try to control artificial life, but eventually fail to do so. The intelligence of these AI is depicted as going beyond that of mere humans. It is a danger that some of the world's most visionary thinkers, such as Elon Musk, continuously warn us against (cf. DOWD 2017). Will there be a rift between human and non-human agents in our culture?

›Hatsune Miku‹ or Artificial Life and Humanity in *The End* (2017)

Technology has opened up characters to their audiences and even shared their ownership in some cases with the fan base. Characters are increasingly becoming a ›common good‹—they are no longer authored, but shared, and constantly being reimagined in their respective communities. In fandom, characters circulate as subcultural capital and as a way of connecting with fellow fans, through practices such as fan art, fan fiction, and cosplay (cf. LAMERICHS 2018). As I noted earlier, in Japan, characters are increasingly flat entities whose backstories are added only later on, often even by their audiences themselves.

One example of such a ›crowd-sourced‹ character is Hatsune Miku. She is both a fan-driven hologram and an interface. Created in 2007, Hatsune Miku is a 3-D animated character that utilizes the synthesizer software Vocaloid. Originally, she was merely the name for the Vocaloid software itself until visual designer Kei provided iconic, *kyara*-like artworks which endowed ›her‹ with a life of her own as a virtual celebrity. Her songs are created by her users/fans themselves. All of the music that she sings is thus crowd-sourced, remixed and fan-created. Her performances, such as live operas, are distributed across a wide range of creators (cf. LEAVITT/KNIGHT/YOSHIBA 2016). As the world's first ›virtual idol‹, Hatsune Miku's success depends on openness, revisions of traditional intellectual property rights, and co-creation. These elements pave the way for an open, crowd-sourced, collaborative future of character circulation.

Although she is only a virtual image, there are live shows ›with‹ Hatsune Miku where she is projected on giant screens. In her many forms, she is the star of the opera *The End*, performing in checkered dresses designed by Louis Vuitton and in high stiletto heels. *The End* debuted in 2013 at Tokyo's Bunkamura Orchard Hall and Paris's Théâtre du Châtelet, and was shown at Amsterdam's Dutch National Opera & Ballet in 2015. The show was commissioned by the Yamaguchi Center for Arts and Media [YCAM] in 2012. For this article, I relied on the official recording of *The End* in Paris (2013) on YouTube, and its English translation as produced by Parucafe⁵. Directed by Keiichiro

⁵ <https://www.youtube.com/watch?v=Ey8oj8S-j3U> [accessed October 23, 2018].



Shibuya and YKBX, the show is an immersive experience for audiences, who are dipped into a hologram stage show filled with lights and green hues. »Have you ever wondered what happens after death?« Hatsune Miku asks herself in *The End*.

Describing this opera as ›anime‹ or a ›fan experience‹ would diminish its power as a piece of art. *The End* is a *Gesamtkunstwerk*, in which all senses of the audiences are triggered. It mediates the feeling of endings and death to the audience continuously, for instance by starting with a completely dark stage during which the audience hears Miku's unreal synthesizer voice.

The only two characters who appear on the dark stage are Miku herself and an animal character, simply named ›animal‹ in the official soundtrack. Throughout the piece, its characters philosophize about their artificial life and its ending. Once Miku becomes aware of death, she sings: »Death always meant someone's disappearance / But I thought that death didn't concern me«. Floating amidst ghostly figures of herself, she later adds: »I can't pretend I don't care anymore / Now, I'm worried sick«.

Even though *The End* is a surreal and even abstract piece, its key themes are relatable for the audience, and closely connected to her nature as a virtual idol. Miku reflects on mortality, embodiment, and the concept of character itself. The piece is highly metafictional, in the sense that the characters reflect on their own technological and semi-fictional nature throughout the story. They consider whether they are human and whether they will die. Critic Gordon Forester writes in *Limelight* (2017: n.pag.): »*The End* [examines] what it means to exist, and cease to exist. Conceived after the suicide death of his wife, this collaboration, with original book concept and libretto by Toshiki Okada premiered in 2013«.

Throughout the opera, attention is constantly drawn to Hatsune Miku's body. The camera zooms into her nostrils, and later her mouth, to reveal her intestines. The audience is exposed to images of her heart when she sings about how she once cut her finger to convince us that she, too, bleeds. Early on in the opera she emphasizes scent. Not much later, she wears a gas mask that deprives her of all sense of smell.

Her body is essentially an ›ani-embodied‹, to use Williams' (2018) term again. It is ›fleshed out‹ to give some real presence to this *kyara*. Not only does the hologram technology let her emerge from her 2-D surface, but she is also visually rendered beyond her surface, organs and all. We are presented with her heart, which looks human just like ours. The work of art always keeps its audience aware that Miku remains a construct, though. Her humanity is often framed as being different from that of mortal humans: »I am human just like you«, she sings. »Oh wait, a slip of the tongue«. In another moment, she mentions: »Maybe I was always human / Taken to extremes«.

More than any other avatar, Hatsune Miku has a sense of ›realness‹ because she is essentially a hologram. She is fleshed out and completely ›present‹ on stage. This state, however, is something that she reflects on at several moments in *The End*. »Light reflects on an object«, she sings, when her limp body



is floating in the air. »Thanks to that, we know that it exists / But now, light swallows everything and disappears«. These lines are meaningful and layered. »Light« is not just a metaphor for life itself, but for the technology that renders the character and makes her truly immersive and interactive. Holograms such as Hatsune Miku are created with light technology, which these lines refer to as well.

Throughout the piece, there is a constant awareness that the characters are simulated. They are shown imprisoned by screens, by white lines and pixels. The material screens are often used as metaphors. They are visually arranged as frames around her and the other character. They cannot break free of them. Miku is enclosed in small rooms with other digital objects that are clearly coded, just like her.



Fig. 2:
The stage of *The End*, photograph by Tokyogirlsupdate.com [accessed October 23, 2018]

Still, her body is not a physical, singular object, but a technically rendered corporeality consisting of multiple bodies and expressions. She is code. Throughout the opera, the audience is reminded of Hatsune Miku's multiplicity. During one song, Miku sings to a backdrop of many manga eyes, just like her own, and a large version of her own mouth. In another song, ghost-like figures hover around her, transparent copies of herself. One particular copy of Hatsune Miku is introduced early on. She has similar hair and a similar body type, but her mouth is open and her pose is zombie-like. Her animal companion describes her as »The woman who looks like you but failed«. This doppelganger makes Hatsune Miku aware of death, since the experience is like seeing an uncanny mirror image of herself. But the image is distorted, and almost like a corpse.

Similar to the theme of multiple bodies, there are multiple endings to the opera, which often throws the audience off-guard with fades-to-black and misleading suggestions of endings. In the final minutes, after a fade-to-black,



we are presented with a white text: »Is this the end? How many are there?« »When we were one, you were much closer to a human being«, her mascot character then continues to sing. This is followed by a haunting transformation of Miku into another body, that of a powerful dragon.

Flying through the skies, Miku is seemingly liberated from all technological prisons. Once Miku merges with her dragon mascot, she reigns over the audience with fire, but the end of this song is sober, too. The dragon opens its mouth and she is swallowed by it. She splits with her mascot again, and sings about the liberty of death itself: »Do we have to keep going on forever? For how long?« The song ends with her lying on the floor of her prison under fluorescent lights, looking at a flickering black cube with white lines. This cube is just another pixelated, and technologically rendered object, just like herself.

Finally, the fourth wall is literally broken when the audience sees the screen get shattered. Running on stiletto heels in her Louis Vuitton dress, Miku runs through shattering glass. The screen is broken. She sings that she is okay with the audience watching her, and that she, in return, watches them back. After mentioning that the lights are bright, she says she will memorize »you«, and that she will miss »you«. It is clear that Hatsune Miku needs an audience to admire her in order to feel alive.

The End is an iconic work of art—a highly immersive and emotional simulation of a beloved character singing haunting songs about death. Hatsune Miku wonders what it means for herself and her fans when she dies *as a character*. As artificial intelligence develops further, this question is a highly important one. Characters are not just fictional constructs anymore, but also technological ones. Like Miku’s holographic body, they can burst out of the screen and move into real life. Miku already has a very »real« tele-presence. At the very end of the opera, she asks: »Where do you come from?« The hologram sheds tears of blood, proving to her audience, once again, that she is corporeal, not pixelated. She bleeds and is aware of herself. Does that not make her human?

Conclusion

Our theories and assumptions of characters need revising, now that virtual reality, artificial intelligence, and other technologies are shaping them in new directions. The forms and appearances, but also the authorship of characters, are currently in a shift. In this article, I questioned how we can define a character, its construction, and the technology that mediates it. A character always exists within a network that is formed by, and shared with, its audiences and developers. The networked capacities of characters will only persist and grow in the future. Characters can increasingly learn from databases and algorithms, and their stories can be crowdsourced.

Culture is important in this analysis. Characters do not emerge in a global vacuum. In Japan, for instance, characters are often desired as the



object of *moe*. There is a desire to see characters as real in Japan, and naturalize them as actual persons. The desire for ›virtual wives‹ is a strong tendency in otaku culture that relates to this personification. ›Marrying‹ your personal assistant software, and being in a unique relationship with her, is just the newest example for that. The desire to see characters as real is not only manifested as love. There is a dark culturally specific longing that speaks from *The End*, a desire to watch Hatsune Miku fade away and die with blood streaming out of her eyes. This emphasis on death is characteristic of how characters are circulating in Japan, as real entities that are almost human. The fact that they are not quite human, is part of their appeal. I see similar tendencies in Anglo-American traditions and Europe, in films such as *Bladerunner 2049* and *Her*, but perhaps less explicit.

I analyzed the relationships between AI and their audiences and players briefly in examples of female AI, such as GLaDOS, in video game culture. Movies like *Her* and *Blade Runner 2049* portray the longing and loneliness that can emerge between AI and their physical companions. There are technological and emotional boundaries between human and non-human agents that fiction already explores today.

What is the future of flat characters and *kyara*, when technology can enrich them and make them learn? Within narrative media, such characters are also commented upon. GLaDOS and Monika, for instance, are examples of AI characters that are presented to us in fiction, that players interact with, listen to, and empathize with. They are just one inch away from the actual self-learning characters that are currently emerging.

I have argued that it is important to ›read‹ these characters not as structures or devices, but as social actors that have a degree of embodiment and agency. This holds true in all the case studies that I presented, but it is a key theme in the opera *The End*. This work of art cannot be analyzed without fully accounting for the tele-presence of Hatsune Miku, and her electric body as a hologram. The mediation of her body, including her organs, is vital to the piece. She is mediated as flesh and bone, and presented as finite, just like the humans that created her and love her.

In our study of characters—flat or round, virtual or fictional—it is important that we continuously consider affect, embodiment, and materiality. New technologies will push these qualities to the forefront, and they will continue to transform characters. In cultural studies of any kind, it does not suffice to read characters as fiction. They have a high degree of ›realness‹ in their mediation. They are everywhere. They influence us. Reading characters means reading interactions, networks, and interactions within networks. As scholars, we must be aware of their relationships to us. AI will accelerate these changes, as it will inevitably point to the fact that humans need to rethink their relationship to non-human agency.



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References

- AZUMA, HIROKI: *Otaku. Japan's Database Animals*. Translated by Jonathan Abel and Shion Kono. Minneapolis [U of Minnesota P] 2009
- BURN, ANDREW; GARETH SCHOTT: ›Heavy Hero or Digital Dummy? Multimodal Player-Avatar Relations in *Final Fantasy 7*. In: *Visual Communication*, 3(2), 2004, pp. 213–232
- CASTRONOVA, EDWARD: *Synthetic Worlds. The Business and Culture of Online Games*. Chicago [U of Chicago P] 2005
- CARTER-MCKNIGHT, JOHN: ›Headcanon & Lore. Owing the Narrative«. In: CARTER-MCKNIGHT, JOHN: *Avatar, Assembled. The Social and Technical Anatomy of Digital Bodies*. New York [Peter Lang Publishing] 2018, pp. 137–147
- DOWD, MAUREEN: Elon Musk's Billion Dollar Crusade to Stop the A.I. Apocalypse. In: *Vanity Fair*. March 26, 2017. <https://www.vanityfair.com/news/2017/03/elon-musk-billion-dollar-crusade-to-stop-ai-space-x> [accessed July 17, 2018]
- FORESTER, GORDON: Review: The End (Keiichiro Shibuya & Hatsune Miku, Ozasia). In: *Limelight*. October 4, 2017. <https://www.limelightmagazine.com.au/reviews/review-the-end-keiichiro-shibuya-hatsune-miku-ozasia/> [accessed July 17, 2018]
- GALBRAITH, PATRICK W.: *Moe*. Exploring Virtual Potential in Post-Millennial Japan. In: *Electronic Journal of Contemporary Japanese Studies*, 2009. <http://www.japanesestudies.org.uk/articles/2009/Galbraith.html> [accessed July 17, 2018]
- GALLAGHER, SEAN: The Holographic Anime ›Robot« that will Keep House for Lonely Salarymen. In: *Ars Technica*. December 18, 2016. <https://arstechnica.com/information-technology/2016/12/the-anime-girlfriend-experience-gateboxes-ai-powered-holographic-home-robot/> [accessed January 23, 2018]
- GREEN, PENELOPE: Alexa, Where Have You Been All My Life? In: *The New York Times*. July 11, 2017. <https://www.nytimes.com/2017/07/11/style/alexa-amazon-echo.html> [accessed January 23, 2018]
- HILLS, MATT: Putting Away Childish Things. Jar Jar Binks and the ›Virtual Star« as an Object of Fan Loathing. In: AUSTIN, THOMAS; MARTIN BARKER (eds.). *Contemporary Hollywood Stardom*. London [Arnold] 2003, pp. 74–89



- ITO, MIZUKO: Technologies of the Childhood Imagination. *Yu-Gi-Oh!*, Media Mixes, and Everyday Cultural Production. In: KARAGANIS, JOE (ed.): *Structures of Participation in Digital Culture*. New York [Columbia UP] 2007, pp. 88–111
- ITÔ, GÔ 伊藤剛: *Tezuka izu deddo. Hirakareta manga hyōgenron he. テヅカ・イズ・デッドー 開かれた漫画表現論へ*. Tokyo [NTT] 2005
- JENKINS, HENRY: *Convergence Culture. Where Old and New Media Collide*. New York [New York UP] 2006
- LAMERICHS, NICOLLE: *Productive Fandom. Intermediality and Affective Reception in Fan Cultures*. Amsterdam [Amsterdam UP] 2018
- LEAVITT, ALEX; TARA KNIGHT; ALEX YOSHIBA: Producing Hatsune Miku. Concerts, Commercialization, and the Politics of Peer Production. In: GALBRAITH, PATRICK W.; JASON G. KARLIN (eds.): *Media Convergence in Japan*. Kinema Club [New Haven] 2016, pp. 200–239
- LUCKIE: Cyberpunk 2077 may Feature Seamless Multiplayer and a Huge Living City. In: *Game Pressure*. September 27, 2016. <https://www.gamepressure.com/e.asp?ID=1077> [accessed July 17, 2018]
- MACCALLUM-STEWART, ESTHER: »Take That, Bitches!«. Refiguring Lara Croft in Feminist Game Narratives. In: *Game Studies*, 14(2), 2014. <http://gamestudies.org/1402/articles/maccallumstewart> [accessed July 17, 2018]
- PEARSON, ROBERTA: Anatomising Gilbert Grissom. The Structure and Function of the Televisual Character. In: ALLEN, MICHAEL (ed.): *Reading Contemporary Television*. London [I. B. Tauris] 2007, pp. 93–57
- REHAK, BOB: Mapping the Bit Girl Lara Croft and New Media Fandom. In: *Information, Communication & Society*, 6(4), 2003, pp. 477–496
- RESSLER, KAREN: TV Asahi's Sanrio Mascot Character ›Gō-chan‹ Gets Anime Film. In: *Anime News Network*. December 12, 2016. <https://www.animenewsnetwork.com/news/2016-12-12/tv-asahi-sanrio-mascot-character-go-chan-gets-anime-film/.109814> [accessed July 17, 2018]
- TOSCA, SUSANA; LISBETH KLASTRUP: When Fans Become Players. LOTRO in a Transmedial World. In: KRZYWINSKA, TANYA; ESTHER MACCALLUM-STEWART; JUSTIN PARSLER (eds.): *Ring Bearers. The Lord of the Rings Online as Intertextual Narrative*. Manchester [Manchester UP] 2011, pp. 46–69
- WILDE, LUKAS R.A.: Kingdom of Characters. Die ›Mangaisierung‹ des japanischen Alltags aus bildtheoretischer Perspektive. In: *Visual Past*, 3(1), 2016, pp. 615–648
- WILDE, LUKAS R.A.: Meta-narrative Knotenpunkte der Medienkonvergenz. Zu den medienwissenschaftlichen Potenzialen des japanischen ›kyara‹-Begriffs. In: BACKE, HANS-JOACHIM; JULIA ECKEL; ERWIN FEYERSINGER; VÉRONIQUE SINA; JAN-NOËL THON (eds.): *Zur Ästhetik des Gemachten in Animation und Comic*. Berlin [De Gruyter] 2018, pp. 109–149



WILLIAMS, REBECCA: Of Mice and Minions. Fandom, ›Ani-embodiment‹ and ›Metonymic Celebrity‹ in the Theme Park Character Encounter. Presentation at »Fan Studies Network Conference«. June 29–30, 2018, Cardiff, UK

WIRMAN, HANNA: Princess Peach Loves Your Enemies, Too. In: ENEVOLD, JESSICA; ESTHER MACCALLUM-STEWART (eds.): *Game Love. Essays on Play and Affection*. Jefferson [McFarland & Company] 2015, pp. 131–148