

**BEAUTY IS IN THE EYE
OF THE “PRODUSER”:
*JAPAN’S VIRTUAL IDOL
HATSUNE MIKU
FROM SOFTWARE,
TO NETWORK,
TO STAGE***

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INTRODUCTION

The “virtual idol” dream is not new, but Hatsune Miku — a cybercelebrity originating from Japan who is steadily becoming a worldwide phenomenon — constitutes a paradigm shift in this lineage initiated in 1958 by the novelty group of anthropomorphic squirrels Alvin and the Chipmunks. Since then many have followed, from The Archies to Gorillaz and 2.0Pac. In Japan, HoriPro’s “digital kid”, Date Kyoko, pioneered the cyber frontier with her hit single “Love Communication” in 1996 (Wolff, n.d.). While in 2011, the idol supergroup AKB48 pulled an infamous publicity stunt by revealing their new girl, Aimi Eguchi, was a computer-generated combination of other group members (Chen, 2011).

So what does Miku have that they do not? Despite her apparent similarity to fictional characters such as Rei Toei from William Gibson’s *Idoru*, Miku’s phenomenon has less to do with futuristic prospects of technological singularity than with present-day renegotiations of the roles of author, work and fan in Web 2.0 media cultures. By addressing her software↔network↔stage transformations, this study draws on a rapidly growing scholarship (Hamasaki, Takeda, & Nishimura, 2008; Le, 2013; Conner, 2014; Guga, 2014; Annett, 2015; Leavitt, Knight, & Yoshiba, 2016) to investigate how Miku’s appearance on screen(s) has shaped her construction as a virtual idol through grassroots-corporate “produsage” (Bruns, 2008).

MIKU, FROM THE BEGINNING

With a visionary name announcing the “First Sound of Future”, Hatsune Miku, created in August 2007 by Sapporo-based company Crypton Future Media, is the most popular avatar of Yamaha’s cutting-edge voice synthesizer *VOCALOID*. The program uses “vocal fonts” (databases of prerecorded human phonemes) to create realistic singing clips by simply entering syllables into an editor, assigning them musical notes and modulating the voice through options like “timing, dynamics, vibrato, breaths, and vocal stops” (Conner, 2014, p. 54). At first intended as background singers for professional music production (Conner, 2014, p.57), it was not until the seventh (third Japanese) *VOCALOID* that the “Miku revolution” took place. Miku’s commercial success was immediate, unexpected and unprecedented, to the point that Crypton was unable to keep up with “an impossible number” (“VocaloidWiki,” n.d.) of demands for a synthesizing software. These extraordinary sales were the consequence of Miku transposing her original target audience (professional musicians and producers) to win the favor of amateur “producers” — “users turned creators and distributors of content” (Bruns, 2008, n.d.) — originating from the *otaku* subculture of geeks deeply invested in hobbies like manga, anime and videogames (“VocaloidWiki,” n.d.).

The secret to Miku's fame lies in the combination of sound and character design. Her vocal font, created from actress Saki Fujita's voice (Oppenheer, 2011), is childlike and high-pitched, differing from the more soul/mature trend of previous female Vocaloids. Her image was commissioned to KEI, a competent illustrator known for his artwork in *moé* style, a type of "little sister" cuteness much in vogue in the Japanese entertainment industry since the 2000s (Galbraith, 2014, pp. 154–156). Crypton's choice converges towards a widespread trend within the *otaku* subculture known as "*moé* anthropomorphism", in which living and nonliving entities are turned into anime girls by attributing them *moé* qualities and cosplay-like accessories that highlight their nature previous to anthropomorphosis ("Moe anthropomorphism," 2016). Because Miku was the first *VOCALOID Character Vocal Series*, meant from the get-go as an "actor" or "avatar" ("VocaloidWiki," n.d.), her creation involved morphing Miku's graphical user interface (GUI) — displayed on screen as digital keyboard, mixer, tracks, toolbars, and tabs — into a cute character that preserved the memory of its existence as a computer program. Eventually, KEI delivered a perfect composite of the *otaku* zeitgeist (Fig.1).



Fig. 1 — *Hatsune Miku*, 2007. Source: Crypton Future Media. Figure Description: Crypton's official image of Hatsune Miku by KEI.

Miku's design features lengthy twintails and headgear *à la* Sailor Moon of the digital age, a sci-fi flavored Japanese school uniform cum *lolita* outfit, and *moé*-fitting silhouette proportions. Her getup retains the black-teal color scheme of Yamaha synthesizers, including details which directly evoke her GUI: wireless headset microphone, sound meters rendered as colorful light tabs on her skirt and sleeves, black piano keys as tie bars, "VOCALOID" name tag, and a tattoo with her character number ("01") and name. Rather than delving into unnecessary strokes of authorship, KEI's design is technocratic, effectively sampling and combining elements of pop (sub)culture to create an iconic yet pliable template. Tellingly, Miku's representation by fans is strikingly uneven, greatly varying in style, character design, theme and settings when compared to "normal" characters from manga/anime and videogames. Bearing these origins in mind, the next sections focus on Miku's translation into music videos, collaborative creation and stage performances.

MIKU, FROM SOFTWARE TO NETWORK TO STAGE

SOFTWARE↔NETWORK

Niconico is a popular Japanese media-sharing platform similar to *YouTube* but for one distinctive feature: it allows users to embed comments directly onto the video feed ("Niconico," n.d.) (Fig.2). The result is that "some videos are virtually covered with thousands of lines of text" (Toto, 2008) flowing from right to left during the playback, which conveys the impression of a shared viewing experience (Hamasaki et al., 2008, p. 166) by making the diachronic appear synchronic. The fluid interactiveness of *Niconico*'s comment system, along with the website's high picture quality and leniency towards copyright infringement and sexual content, has captivated Japan's *otaku* youth with high levels of technology literacy and familiarity with *doujin* ("self-publishing") fan culture — explaining why its members spend twice the time there than the average user does on *YouTube* (Toto, 2008). The co-evolution of *Niconico* and Vocaloids cannot be overstated, as they have closely influenced each other's development, distribution, and popularization ("VocaloidWiki," n.d.). In fact, the website presently features a category dedicated exclusively to Vocaloid contents ("BOCANICO").

Soon after Miku's release, *Niconico* users started to upload thousands of music videos made with her software (Hamasaki et al., 2008, p.166). As noted by Leavitt et al. (2016), "early songs appeared with title cue cards, short animated sequences, lyrics, or static images of Miku" (p. 207), with few exceptions by savvy users posting videos using various 3D software ("VocaloidWiki," n.d.). This limitation was overcome with *MikuMikuDance* (*MMD*), a freeware created by the independent developer Yu Higuchi, which allows fans, even without knowledge of 3D animation, to choreograph and animate videos with Miku

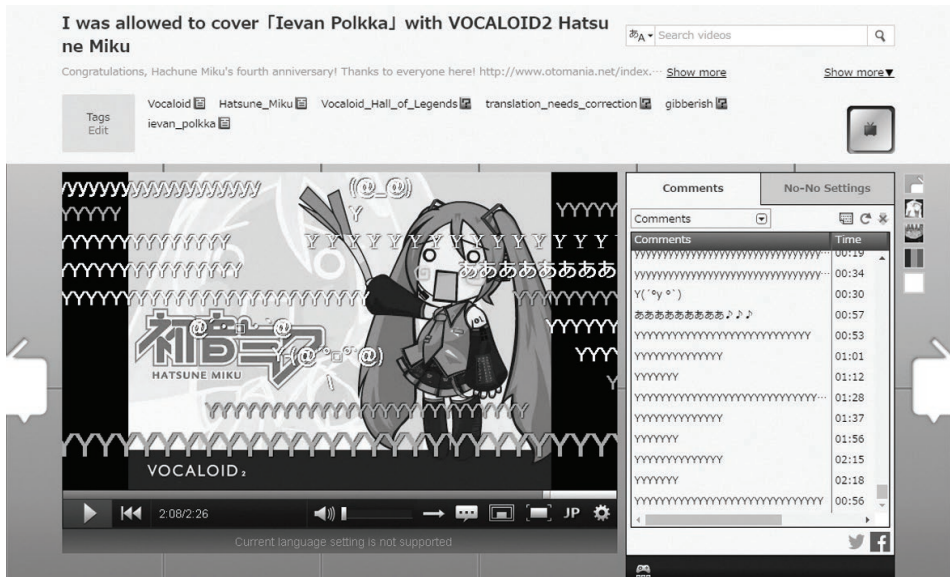


Fig. 2 — NicoNico screenshot, 2016. Source: NicoNico. Figure Description: Screenshot of NicoNico displaying the popular music video “Ievan Polkka”, by Otomania and Tamago, featuring the derivative character Hachune Miku.

and other characters (Le, 2013, p. 4). *MMD* brought about a democratization of 3D doll-likeness within the Vocaloid community, fueled by resource sharing, numerous upgrades, and contests like the *MMD Cup* held on NicoNico (“MMD,” n.d.). The 3D trend was heightened by Sega’s release of *Hatsune Miku Project DIVA* in 2009, a series of three-dimensional rhythm videogames featuring Miku and other Vocaloids. Comprising an Edit Mode where players can create custom music videos from a set of predefined modules and parameters (“VocaloidWiki,” n.d.), *Project DIVA* became extremely popular, appearing within the top search results for popular Vocaloid songs, on a par with or surpassing the original music videos.

Concurrently, 2D videos continued to prosper with various degrees of sophistication, from static images to anime-like sequences, commonly created with digital visual effects, motion graphics, and compositing applications like *Adobe After Effects* or *AviUtl* (“2d Vocaloid PVMaking programs?,” 2013). In turn, communities like *Pixiv* (the Japanese equivalent to *DeviantArt*) have constituted massive online archives of Vocaloid fan art — mainly digital illustrations made with graphics tablets — and fan fiction. While songs, illustrations and videos are usually perceived as “first degree” works, the diversity of Vocaloid-related audiovisual formats far exceeds them. In NicoNico, “second degree” works include human singers or instrumentalists performing Vocaloid songs, illustrators’ “drawn covers” of music videos, original dance covers, and alternative music videos; “third degree” works include translator-singers covering songs in for-

eign languages, alternative song arrangements by singers, bands' live or recorded performances of Vocaloid songs, derivative dance covers, and *MMD* dance covers ("What is Vocaloid?", n.d.).

Many Vocaloid music videos result from the collaboration of different types of creators — mainly amateurs linked through virtual networking — including composers, lyricists, illustrators, 3D animators, directors and editors (Hamasaki et al., 2008, p. 166). Often, descriptions of new works include hyperlinks to videos from which sounds, images or other contents have been cited (Hamasaki et al., 2008, p. 167). As demonstrated by Hamasaki, Takeda, & Nishimura (2008), at the time of their research, the music videos "Miku Miku ni Shite Ageru♪" and "Ievan Polkka" constituted focal points in a creative network of over 2000 creators and 4000 relations between them (p.167). Furthermore, their study revealed that "different categories of creators have different roles in evolving the network" (Hamasaki et al., 2008, p. 168). In general, fewer and more time/resource-consuming endeavours like songs and music videos become the source that triggers creative activities by many illustrators (Hamasaki et al., 2008, p.167). Songwriters often function as "key persons" within centered creative clusters, but sometimes these are centered on illustrators, or have no key person altogether, generating messy and decentered clusters (Hamasaki et al., 2008, pp. 167–168).

Vocaloid "derivatives", *i.e.* alternative characters based on preexistent Vocaloids ("VocaloidWiki," n.d.), are another prominent feature of such creative networks. Crypton's derivatives include corporate partnerships or seasonal variations ("Racing Miku", "Snow Miku", "Sakura Miku"). Fan-made derivatives play with generic Vocaloid traits to establish visual, personality, gender, genre or parodic variations reflecting different aspects of the fandom. Crypton has officially "adopted" many fan-made derivatives — *tsundere* Akita Neru, untalented Yowane Haku, freakish Shiteyan'yo, robotic-insectoid Calne Ca... — striking commercial deals with their creators to produce merchandise and include them in venues like *Project DIVA* ("VocaloidWiki," n.d.). Among Miku's derivatives, "Hatchune Miku" — a comically deformed version of the "child" Hatsune Miku waving a spring onion — is perhaps the most representative (Fig. 2). Introduced by the aforementioned music video "Ievan Polkka", it became so popular that the spring onion was officially acknowledged as Miku's character item, representing participatory culture in its intricate, remixed and unpredictable ways ("VocaloidWiki," n.d.).

By assuming a role of stewardship, supporting peer production and artists through royalty payment and enhancing the users' means of expression, Crypton has gained the general trust of the Vocaloid community. For instance, Crypton has adopted a Creative Commons License to the original illustrations, allowing non-commercial uses of Miku and other Vocaloids; boosted the culture of Vocaloid derivatives with software extensions like *Append*, that provides different moods of Miku's voice ("soft", "sweet", "dark", "vivid", "solid", and "light"); and created *PIAPRO*, a collaborative website dedicated to Vocaloid, in which users share and remix their music, illustrations, lyrics and 3D models ("VocaloidWiki," n.d.).

The ultimate example of Crypton's strategy of support and enhancement is Miku's "live" concerts since 2009. In these performances, prerecorded 3D animations of Vocaloids running at high refresh rates are backprojected onto a suspended Dilad screen (Conner, 2014, p. 24), creating the illusion of images moving across the stage. Miku sings, dances and magically appears/disappears in different costumes before a roaring crowd, while live instruments are played by flesh and blood guitarists, keyboardists and drummers on the sides. The result is "eversive", *i.e.* it turns the cyberspace inside out to create an augmented or mixed reality, in which the characters are superimposed over a nebulous screen that eludes clearly rectangular limits (Conner, 2014, pp. 108–117). In stadium-like arenas of recent performances like *Magical Mirai* (since 2013), the wider holographic screen permits an extensive range of lateral movements that make up for the lack of depth, and is additionally topped and flanked by giant LED displays exhibiting complementary motion graphics, lyrics, or close-ups of Vocaloids, human performers and crowd (Fig. 3).

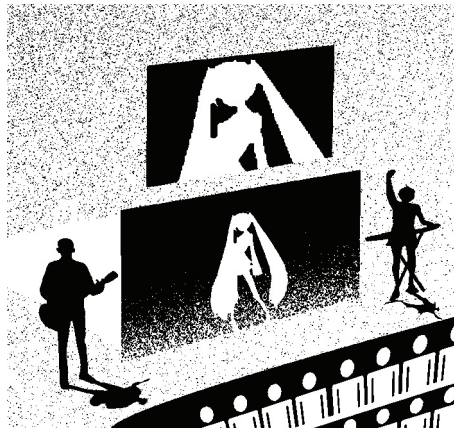


Fig. 3 — *Crypton's "live" concerts*, 2016. Source: Ana Matilde Sousa. Figure Description: Diagram showing the stage setup of Crypton's concerts: Dilad screen (central), human musicians (sides), giant screen (above), and crowd.

This post-cinematic apparatus tells the familiar narrative of Japanese idol culture — a "canned" Miku waves and talks to the crowd, introduces band members, gets emotional — but stays within the perimeter of "virtual pop stars as vivid, engaging characters, with whom interaction is thus far limited" (Conner, 2014, p. 77). The game changer is that Miku is singing user-generated hits, uploaded to *Niconico* and selected by Crypton from the Vocaloid Hall of Fame (Leavitt et al., 2016, p. 216). This element of deep reciprocity is absent from *Gorillaz* or *2.0Pac*,

who despite their virtuality preserve the standard dynamics of centralized authorship. Furthermore, by engendering a ritualized time-place where the dematerialized performer and community physically meet, Crypton strikes a delicate balance between the company's branding and the "meta-pleasure" of Miku's audiences who playfully and intentionally engage with her (Conner, 2014, p. 90).

The fact that Miku is preprogrammed and disembodied is irrelevant insofar as "a performance doesn't lie within the performer or the audience, but in what occurs between them" (Conner, 2014, p. 101). For Crypton's "universal Miku" (Leavitt et al., 2016, p.213), this in-betweenness should transpire from the post-authorial self-organizing mass, highlighted through the heavy use of color-synchronized glowsticks distributed to all attendees — a common item in J-pop concerts made into a trademark of Crypton's shows. In video recordings of the legendary first concert 39's *Giving Day* (2010), those thousands of frantic light dots reflected on the holographic screen could not be a more fitting metaphor for Miku's massively collaborative creation.

It has been observed that most Vocaloid outputs are nonetheless corseted by conventional formats (pop songs, pop singers, pop concerts). Yet this is not inevitable, as authors outside "traditional" Vocaloid circles have demonstrated, e.g. Tara Knight's *MIKUMENTARY* series, Mari Matsutoya with Laurel Halo's *Still Be Here*, Anamanaguchi's *Miku*. Among these, *The End*, presented at the Yamaguchi Center for Arts and Media in December 2012, stands out for its scale. Conceived by Keiichiro Shibuya (music) with Toshiki Okada (libretto) and YKBX (visuals), *The End* is a multimedia (post-)opera without an orchestra or human interpreters, in which Miku is the protagonist and the arias are sung using *VOCALOID* (Abe, 2013). In the collaborative manner of Vocaloid works, the production team included specialized creators from various fields (graphic design, architecture, sound design, *VOCALOID* programming, production). The most talked-about contribution were costumes by Louis Vuitton's artistic director Marc Jacobs and team (Abe, 2013), who made the brand's Damier pattern into an inflated checkerboard evoking pixel tiles (Master Blaster, 2012).

Contrary to the prevalent ethos of Vocaloid performances, in which Miku is brought into our reality by accentuating her human-likeness (e.g. facial recognition, motion capture) and sharing the stage with human musicians, *The End* was publicized as "the first humanless opera" (Conner, 2014, p. 162). The stage was empty except for four giant overlapping screens and a translucent compartment (occupied by Shibuya), onto which seven high-resolution projectors broadcast a video recording, accompanied by music delivered by a special sound system (Abe, 2013) (Fig. 4). This type of visual and acoustic setup gives the impression of a physical disavowal, contrasting with the sensory overload coming from the songs and imagery. *The End*'s narrative is accordingly "hauntological" and abstract, pushing Miku out of the territory of mainstream culture and into an "uncanny valley" of surreal beauty. Its use of 3D is coarser, more angular and agitated by rebellious shapes, color patches and irregularities than *Project Diva*'s pristine

digitality; yet rife with authorial idiosyncrasy, unlike *MMD*'s genericness. The otherworldly narrative, combined with light flashes, glitches and overlaps, lends the show a Lynchian aesthetic, highlighting the posthuman qualities of Vocaloids.

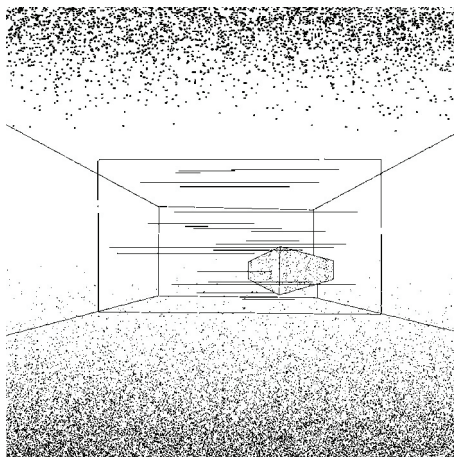


Fig. 4 — *The End* stage, 2016. Source: Ana Matilde Sousa. Figure Description: Diagram showing the stage setup of *The End*.

Other stage appearances emphasize Miku's cybernetic nature over a seamless "eversion" into the real world. *Niconico ChoParty*, a grand-scale event starring *Niconico*'s users in multiple performative genres, features Vocaloid performances with a setup similar to Crypton's concerts. However, unlike Crypton's restrained use of supporting CGI graphics — mostly focused on tweaking Miku's performance "through extremely fast costume changes or transitions that make her body explode into bits and sparkles" (Leavitt et al., 2016, p. 220) — *Niconico*'s Vocaloid performances go all out in this department. Making profuse use of dramatic narratives, changing backgrounds, large group choreographies, interactions of Vocaloids with digital props and human actors, or even simulating the website's recognizable comment system on stage, these performances resonate with the motion graphics and visual compositions found in *Vocaloid* music videos in *Niconico*. The use of *MMD* models to render Vocaloids on stage, and the dilution of Miku's centrality in favor of other Crypto/non-Crypton Vocaloids and Utaloids (fan-made voicebanks), confirms these concerts' intent to mirror the practices of *Niconico*'s community.

Another venue to be considered is the small, fan-made gig using primitive structures and "comparatively blocky characters and jerky movements, definite slips into uncanny territory" (Conner, 2014, p. 132). Attempting to replicate corporate concerts on tight budgets, these often use single projectors and mosquito screens as light diffusers, while employing software like *MMD*

and *AniMiku* to render choreographies designed by collaborators, modeled after *Project DIVA*, or using motion files released by fans on *Niconico* (Hight-rancesea, 2012). Although mostly adhering to the aesthetic paradigm of Crypton concerts, fan-made gigs raise important questions about the politics of resource distribution, accessibility and economic authority in hybrid grassroots-corporate franchises (Conner, 2014, pp. 131–133; Leavitt et al., 2016, pp. 224–226). Indeed, the meta-pleasure of such “mosquito net” Vocaloid concerts stems from their underground legitimacy, resulting from “the part-time, after-hours labor of two to three people” (Conner, 2014, p. 133). The fact that Miku looks like a clunky apparition brings them closer to the original amateur spirit of Vocaloid creations.

CONCLUSION

Launched by Crypton Future Media, the unique nature of Hatsune Miku — an “editable” singer (Leavitt et al., 2016, p. 200) — has shaped her as a hub for user-generated and network-based artistic works. In the beginning, there was a voice synthesizer application and a single illustration by Crypton Future Media, whose *moé* aesthetics appealed to the Japanese geek (*otaku*) and self-publishing (*doujin*) subcultures. From here, Miku spread towards a massive collaboration among various types of creators, playing different roles in centered or decentered clusters via feed-back-oriented, media-sharing websites like *Niconico*. Even though she inhabits our electronic visual displays, Miku’s shape varies greatly: from GUI to music videos or illustrations, from 2D graphics to 3D animation, from original works to derivative characters and (second, third degree) contents, in a vast array of both commercial and noncommercial audiovisual formats and pieces.

Miku’s stage appearances rely on post-cinematic apparatuses that change according to the organizers’ agenda and audiences. For Crypton, whose intention is to advertise a singing synthesizer, Miku’s augmented reality “holographic” concerts mimic J-pop shows with supporting human musicians and glowsticks emphasizing the united, anonymous crowd. In the humanless (post-) opera *The End*, the goal is artistic and experimental, adhering to an arthouse philosophy of authorial specificity rather than mainstream culture. *Niconico*’s allegiance lies with its community, thus their Vocaloid concerts reiterate the creativity of user-generated music videos and the “*Niconico* experience”. Finally, fan-made Vocaloid gigs are low-quality and unintentionally uncanny, yet closer to the independent DIY ethic of peer production.

All these “Mikus” prompt us to rethink the dynamics of production, consumption and diffusion in terms of intermittence and interference of scales. Namely, the “disjunctures and incommensurable differences” (Woods, 2014, p. 135) that evade smooth sailing between flat/tridimensional, individual/network, passive recipient/active participant, grassroots audiences/corporate control, lo-

calized “molecular”/overarching “big data”. The Vocaloid collaborative ecosystem fundamentally differs from fandoms centered on a work of individual or corporate authorship, which remain separated from fans by virtue of its centralized authority. With no original or dominant work, the rhizomatic worlds unfolding from Miku’s multimedia corpus are weirder and messier, modulated by the coevolving “æffects” of the products, outputs and responses they produce — to an extent hardly rivaled by any contemporary “spreadable media” (Jenkins, Ford, & Green, 2013).

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