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The Vocaloid Phenomenon: A Glimpse into the Future of Songwriting, Community-created Content, Art, and Humanity

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(1) Songwriting in the Digital Age, an Overview

Songwriting, as a craft, is an endeavor two-fold. It involves both the composition of lyrics and of music, each being a deeply rich discipline all its own. Taken together, though, the components and methods of achieving both lyricism and musicality ultimately align with the importance of certain core tenets—technical theory, creativity and inspiration, emotive quality, and creator adaptability, to name a few—which create the intellectual framework of any career in songwriting.

But, if theory becomes your bones as a songwriter, what of your organs or of the creative muscles flexing? And what of your unique mind and heart?

In a 2015 *Science Magazine* article aptly titled "Songwriting and Science," scientist and songwriter C. Neal Stewart, Jr. roughly describes effective songwriting as a function of brevity, memorability, freshness, unpredictability, collaboration, and revision; he, then, ultimately relates these tenets back to those of scientific writing, his "day job."[1] Like Stewart, a variety of researchers and scholars have put the discipline of songwriting onto a glass slide and painstakingly analyzed it through a microscope's lens in attempts to extract, precisely, what about music strikes audiences as *artistic*. Some of these perspectives can be truly insightful, while others are applicable only in certain

genres and styles. In lieu and consideration of the Vocaloid community, which has gradually fostered the creation of a uniquely millennial multi-genre, I will make my best attempts to present what, I think, represents Vocaloid on both its individual, experientially-defined levels and its collective, theoretically-abstract levels. To do so first requires a working knowledge of the two components of traditional songwriting: lyric composition and music production.

Lyric Composition and Music Production

Lyric composition in Western songwriting can be viewed technically from the overarching scope of an entire song to the precision of a single line's diction, syntax, and scansion. In a way similar to poetry composition, everything from the length and enjambment of a phrase to the instance and pattern of rhymes can be considered in the process of lyric composition.

Imagine that you are a songwriter in the modern day. You may begin by composing just a single song lyric. Both a lyric's meter and syllabic pattern (or the number and order of stressed and unstressed syllables) matter, and they matter in tandem with that line's rhythm, flow, length, and internal rhyme scheme. Once you put that line alongside others in a song element like a verse, (pre-)chorus, bridge, or hook, instantly, the focus of your lyric composition shifts to larger schema. Among these may be your song's overall rhyme structure, the paradigm by which its meter and syllabic pattern is governed, the balance and contrasts which exist between the lyrics and song

elements, and the form your song takes; even the use or omittance of these compositional strategies and song elements at any point in in your song matters.[2] Suddenly, writing a song is about far more than just putting a pen to paper (or fingers to a keyboard, for that matter).

. . .

Music production involves arrangement, orchestration, mixing, and mastering. In arranging a song, an arranger utilizes “the tempo, the chord structure, and the feel (mood)” of the arrangement to invoke a specific musical style or genre.[3] A song’s orchestration takes this a step further. An orchestrator chooses specific instruments to achieve—in the words of Michael Zager, a music producer, composer, arranger, and professor—the song’s “musical environment,” the destination of the arrangement’s invocation, in a sense. “Painters choose colors,” writes Zager, “and orchestrators choose instruments.”[4] A song’s arranger and orchestrator are often the same individual (known as a music producer or record producer) in contemporary music industries, but some producers do specialize in just one or the other.

Once arranged and orchestrated, a song is mixed and mastered—which may be completed by a music producer, an individual who specializes in both mixing and mastering (known as a sound engineer or music engineer), or several individuals specialized in one or the other (known as mixing engineers and mastering engineers). Mixing involves multiple steps. These include balancing levels, or the refining of audibility ratios between different song components (i.e., adjusting the volume of a percussion instrumental track in relation to another instrumental track or to a vocal

track); equalization, the “boost or cut” of audio track frequencies; panning, the regulation of each audio track’s volume and spatial mapping (e.g., the origination of track sounds from leftward, rightward, or in between at any point in a song); and (digital) sound processing, the use of various strategies and tools to “create an ambience for the overall sound.”[5]

The latter step, mastering, involves many of these same creative processes in the context of technical consistency and compatibility. This is the final step of music production, and it involves the correction of a mixed track’s sampling rate, bit rate, and sound distortion.[6]

(2) Music, Media, and Marketing: An Introduction to VOCALOID

Succinctly, VOCALOID is a voice synthesizer computer application developed by the YAMAHA Corporation which was first released in Japan in 2004 and has, since, released four newer versions. The easiest way to explain what it is would be to compare it to Apple's Siri application. Siri, like VOCALOID, is a voice synthesizer program. A live human recorded an expansive series of phonetic sounds, and those recordings were, eventually, used to create a voice bank for your iPhone which can speak intelligible words. Most VOCALOIDs have been created similarly. A person called a "voice provider" (which, in some cases, has been a prominent Japanese vocalist) sings every phonetic sound needed to speak the Japanese language (or any language), and the recordings are turned into a VOCALOID voicebank. (Some voicebanks, though, have been created without directly using samples from a live voice provider.)

> Vocaloid software is sold with one or more singer libraries [voicebanks] included. Each library represents a specific voice, usually recorded by a voice actor, and consists of samples of all the necessary diphones, sustained vowels, and triphones in a language. At a minimum, diphones need to include all possible phoneme combinations (C-V, V-C, V-V, C-C), so roughly 500 diphones are necessary to synthesize Japanese and around 2,500 for English. Triphones (usually V-C-V) are optional but make for a more realistic and flexible library. In order to create models that can

> imitate the timbre and expressiveness of the actor's voice, each diphone, vowel, or triphone is usually recorded in various contexts…
>
> Through the process of concatenative synthesis, samples are pulled from the database and assembled to create the words the software user has entered as lyrics (in natural language).[7]

These voicebanks, which are often created by third-party companies in partnership with Yamaha, can then be used in the VOCALOID application, allowing users to program it to sing or speak—down to the pitch, duration, and even timbre of each note. The fifth generation of the application, VOCALOID5 (V5), released in July 2018, and, across all five generations, there are upwards of 200 voicebanks. (This includes updated versions of earlier voicebanks improved for quality over time.) The community that eventually formed around the VOCALOID program, though, developed as a result of multiple factors.

Collaboration and Technology in Modern-day Music Industries

Much of what I've discussed so far pertains solely to songwriting, but the Vocaloid multi-genre spans more than songwriting alone. Being born in the technological age, the voice synthesizer music industry was shaped by a number of different online communities. The best way to explain how is to explain how examples of collaboration in the traditional music industry that you already know of relate to

collaboration in the Vocaloid community, and that explanation begins with the effect of technology on the processes, steps, and business of songwriting.

The following is an excerpt from Zager's *Music production: For Producers, Composers, Arrangers, and Students* which explains how technology has changed the contemporary music industry by making every step of the music production process more easily accessible and affordable to both novice and expert music producers and sound engineers.

> All aspects of music production can be self-contained in today's extensive electronic music world. The project studio has become commonplace with new artists, producers, and professionals alike. Many artists and producers produce basic tracks at home and record overdubs and mix in a professional studio. Others complete entire projects in home studios. Software programs and hardware equipment is affordable; therefore, most producers and artists own home studios.[8]

Even since the publishing of Zager's guide in 2011, access to high-quality music software and hardware has continued to increase. Digital audio workstations (DAWs) can turn a laptop into a production studio, and you can find USB microphones easily at your local Walmart or Target. Combined with YouTube tutorials, Reddit answers and master threads, and instructional books, music production has become accessible and possible to creators with no experience.

Furthermore, the advent of digital music, specifically, has changed what music is considered marketable and increased the potential for even niche music to be sold.

> New business models offer outlets for music producers to sell music that is not considered to be in the mainstream. Music lovers seek out companies specializing in unusual and inventive music. Some musical styles may not be distributed through major outlets because the sales potential is limited. Small companies have low overheads and consequently can afford to sell fewer units than a major company, yet still derive a substantial profit. Digital downloading is less costly for the consumer since there is no manufacturing cost and companies can afford to sell the music for less than a traditional physical copy. [9]

Music trends have responded so that even niche music is becoming mainstream. The novice songwriter, thus, is now also in demand and marketable—more free to create without imposition. The increase of software and hardware accessibility in the modern-day music industry has ultimately lead to hope for a new future in the music industry wherein "producers and artists have the ability to create and sell music without signing an agreement with a record label or production company."[10] Songwriters can now use both streaming services (like Spotify and YouTube) and online music stores (like Apple Music, Google Play, and Bandcamp) to sell their music themselves even if they have been turned away by record labels. Altogether, this means that even *you*, given enough time and a feasible budget, can now undertake just about every step of the songwriting process *alone,* from lyric composition and mastering to performance and distribution.

The VOCALOID application was created in lieu of the alignment of such developments in the music industry relating to technology. Songwriters, now equipped

with production software and hardware, became capable of executing any step of songwriting themselves. But there was often still a role left: vocalist. For context, a singer-songwriter who writes and performs their own instrumentals would be one example of a songwriter who primarily creates alone; another would be a rap, R&B, pop, or hip-hop artist who records, composes, mixes, and masters their own tracks. Each of these examples, though, generally includes artists who record their own vocals for the vocal parts of their songs. There are, though, songwriters and music producers who do not sing or rap, so how do they get their songs heard without vocalists? YAMAHA's answer was the VOCALOID application: it's original, intended use was for music producers without access to vocalists for their original songs. The idea was that, if a small producer wanted to create demo tracks but couldn't afford to commission a singer, the one-time purchase of the VOCALOID application and add-on voicebanks could be a cost-effective and functional alternative. Potentially, VOCALOID can be yet another tool available to you as a songwriter, and voice synthesizer programs could become part of the future of songwriting itself.

. . .

While the current music industry affords individual songwriters the opportunity to thrive, there are still those who prefer to collaborate. Even though each step of creating a song *can* be completed by just one person, Zager argues, there are still many, specialized creators and artists in the music industry for a reason.

> Artists, producers, and/or arrangers may have very little artistic contact with other creatives, since they tend to live in a creative cocoon. This can

> be both beneficial and detrimental to one's artistic development. [. . .] Collaboration encourages a creative flow of ideas. To counter that theory, not knowing 'the right way to do things' can become the 'mother of invention.' In my opinion, a delicate balance between the two working methods is the best solution.[11]

Lyricist-musician teams who write and sell songs together—as well as arrangers, orchestrators, specialized sound engineers—are examples of collaborative songwriters. Some songwriters of this type may simply enjoy dedicating their time and skills to one specific aspect of songwriting whereas others may simply dislike like the sound or quality of the music they can write and produce alone. (This derives, in part, from arguments against the use of digital audio software—or, more specifically, synthesized sounds—in songwriting. For example, Zager asserts that "[s]ynthesizer programming can never replace the feel that live musicians bring to the music."[12] Even though synthesized sounds have improved in quality and increased in use since his book was published, many producers and artists still aspire or prefer to use at least *some* live instruments in recording their songs.)

Imagine that you've written your song and want to find a way for people to discover it. How will you do it? In addition to changing how creators produce music, technology has become the principal way that consumers find content, with online video-sharing websites having become the avenues by which consumers find new music most often. "YouTube," says Zager, "has become the number-one source for

discovering new music."[13] To get people to listen to your new song, then, you may decide to create a music video.

Collaboration in music can be most easily seen in the production of music videos because, when you watch a music video, you're not only hearing a song. That is, you are consuming in a product which was created though more than *just* the processes of lyric composition and music production: there is the added dimension of video production. In addition to everything involved in making a song, to make a music video involves story-boarding, casting, filming (or animating), directing, editing, subtitling, and more. Once again, many of these steps can be done by just one person (exemplified by video projects completed with nothing more than a smartphone and a computer), but—because of the mastery of craft each part of it demands—collaboration is, still, the most common mode of music video production. Just look at the credits of the next music video that YouTube recommends you: there is, more often than not, more than just one person behind the final product that you see. And that makes sense. Even if you consider yourself multi-talented, do you think that you can simultaneously be a lyricist, composer, arranger, mixer, mastering engineer, director, videographer, actor, animator, and video editor to the same level of skill?

The Vocaloid community sees collaboration in spades. Original animated music videos (AMVs) are common in Vocaloid, and many Vocaloid songs that don't have official music videos (and even some that do) have fan-made promotion videos (PVs) so popular that they're more-or-less *considered* official by the community. Some of these videos are fully animated in a variety of art styles; these, though, are often limited to

either official music videos for songs by Vocaloid producers[1] established enough to have the means to create or commision a full-length animated music video and to smaller fan creators who happen to have the skills and time to animate. Because of the costs associated with animation—both financial and temporal—the most common video styles in the Vocaloid multi-genre utilize still images.

In a technique akin to the style of flip-book animation, many voice synthesizer music videos string together a number of still images. These images typically feature the same character(s) drawn in different poses with different facial expressions and are arranged in time with song lyrics to give the impression of verse-by-verse visual storytelling. These videos, like traditional music videos, may be created through the collaboration of any number of online creators (e.g., digital artists, video editors). Vocaloid producers—and cover artists, too—regularly commission several types of fan creators to create songs, AMVs, and fan-made PVs—often leading to consistent collaboration with online creators in other communities, such as those in the anime music and voice-acting communities.

So even if a song *can* be written and produced by just one person with a laptop, collaboration with other creators may still be an integral and indispensable part of developing the craft of songwriting over time, and every novice songwriter should both

[1] The term "Vocaloid producer" is a general catch-all term for any music producer, sound engineer, arranger, orchestrator, etc. who creates or contributes to the creation of a Vocaloid song. They are often referred to by what is known as a "roducer name," or a "P name," which is usually part of or the entirety of their online username (or, in the early days of the community, a fan-coined name) followed by a capital letter "P." A hyphen may or may not precede the "P."

embrace their inexperience as a strength and utilize chances to work with other songwriters—be they experienced or not—when they arise.

The Vocaloid multi-genre has developed, in large part, by songwriters and music producers taking particular advantage of the opportunities afforded by technology and collaboration in the modern-day music industry. Many Vocaloid producers have gone from being small online creators in a niche community to being the minds behind music videos with millions of views. Many now utilize streaming services and online music stores—as well as sites like Patreon and Ko-Fi, which are specifically made to give fans platforms on which to support their favorite online creators—to distribute and make profit off of their original songs, albums, and content.

(3) The Character Voice Model: Music Videos, Holograms, and Art in Vocaloid

In explaining how music producers create songs, Zager re-invokes the imagery of painting, saying that a producer instructs an artist on "how to take the brush and stroke the musical canvas," but he qualifies what he says: "If [that] were a literal statement," he says, "the producer could maneuver a robot and achieve the same results."[14] Applied to songwriting in the Vocaloid multi-genre, though, his initial syllogism isn't too far from reality. VOCALOID—as well as other voice synthesizer applications (such as CeVIO Creative Studio, Vocal Synthesis Tool UTAU [歌声合成ツール UTAU], and Synthesizer V)—is principally used as a *tool* for creators: *whatever* they can conceive of within the legal and technical constraints of the application is possible. But, for all the unique perspectives and content that can thus brought into existence through the Vocaloid multi-genre and community, there are certain things which remain generally consistent across the board. This is, principally, because of how VOCALOID voicebanks have been marketed.

Hatsune Miku and the Character Vocal Series

The original VOCALOID application (V1) was released, simply, as the software that it is, but, for the second generation of the program, VOCALOID2 (V2), the marketing strategy changed and the character voice model was introduced. Using this model, Yamaha's application went from being an assemblage of disembodied

voicebanks to being the accessing gateway to unique, humanesque vocalists. Crypton Future Media, INC.'s Character Vocal Series are among the most prevalent pioneering examples of such VOCALOID character voices.

The term "character voice" had been used since the 1980s to refer to voice actors associated with specific characters, but it became part of VOCALOID marketing strategies with the release of the V2 application and the Character Vocal Series. This series includes Hatsune Miku (初音ミク), Kagamine Rin and Len (鏡音リン・レン), and Megurine Luka (巡音ルカ).[2] These VOCALOIDs were designed to emulate how sound travels in different ways. Rin and Len, for example, are two characters (female and male, respectively) released as a two-in-one voicebank which emulates mirrored or reflected sound, and their designs follow the same theme of reflection with the two looking like mirror images of each other.[15]

> Vocaloid twins Kagamine Rin and Len, the second product released by Crypton Future Media in 2007, were recorded by the same female voice actress, Shimoda Asami, who explained that Len's "male" voice is achieved by speaking from her belly, while Rin's "female" voice is achieved by speaking at the top of her head. "I imagine Rin's cute and punchy voice springing out from the whorl of my hair. You know, this kind

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[2] Due to the frequency of reference to various Vocaloid characters, producers, and utaites/youtaites in this paper, each will most often be referred to by their shortened, translated, and/or transliterated name or username after first mention. For example, "Rin" for "Kagamine Rin (鏡音リン)" and HACHI (ハチ) (Kenshi Yonezu [米津玄師]). These shortened names are highly recognizable and often used within the voice synthesizer music community.

> of high voice you do with your eyes wide open, it really comes from there. On the contrary, Len's low voice can't come out properly if you don't use the power of your belly."[16]

The goal of these character voices was not, like the voicebanks of V1, to emulate realistic vocals but, instead, to create voices characterized enough to be distinguished as unique personas.[17]

Think of it like this: you can, consciously or subconsciously, distinguish the difference between the vocals of different traditional music artists and groups. You most likely immediately see a difference between the vocals of the Beatles, Fall Out Boy, Elvis, Selena, Aretha Franklin, and Beyoncé because the vocalists (as people) and their voices are associated one-to-one in your mind. Maybe you associate their album art or concert performances with their voices, or maybe magazine and news articles have given you more holistic enough idea of each performer as a complex and unique human being. Regardless, one thing is surely accomplished after you hear enough voices in music: you form a distinct preference for *specific* types of performers and their *specific* voices. Even though there is an *entire* traditional music industry of vocalists across a number of cultures and styles, each artist, more-or-less, has their quirks which makes them—in your mind—a *unique* performer. Yamaha wanted to create that same phenomenon with VOCALOID.

Despite being the first VOCALOIDs developed by Crypton Future Media, INC., the Character Vocal Series VOCALOIDs were actually the third, fourth, and fifth VOCALOIDs that Crypton had released. The company's first two voicebanks, MEIKO

and KAITO, were both developed by Yamaha and released for V1 with official character designs and box art, but they lacked the dimensions of character present in VOCALOIDs created for V2 and on.[18] (Crypton later developed and released VOCALOID3 [V3] updates for both voicebanks, but chose not to adapt them into character voices because the original intention of MEIKO and KAITO was different from the intention of the Character Vocal Series [MEIKO]). It wasn't until V2, then, that voicebanks became widely characterized (Character Vocal Series). Using both the same sort of manga- and anime-style box art which accompanied such V1 voicebanks alongside a list of official personality traits, Yamaha set out to make VOCALOID characters into stars with the launch of V2 in 2007. To do so, they targeted, in addition to music producers, a new demographic: *otaku* (オタク), or *manga* and *anime* superfans. Hatsune Miku—who is, indisputably, the most widely-recognized VOCALOID character—and the rest of the Character Vocal Series had a large part in popularizing the Vocaloid multi-genre by catalyzing the growth of the voice synthesizer music industry through the cross-engagement of the sound production and *otaku* creator communities.

Fifteen years after the launch of the V1 application, the Vocaloid community has extended far beyond just these circles, and VOCALOID characters are recognizable even to those unfamiliar with the multi-genre. For example, have you ever come across a character with blue-green eyes and matching, knee-length hair tied into twintails by magenta-pink hair bands? If you have, then you already know a VOCALOID character because *that's* Hatsune Miku, the virtual pop star. What you may not know is that,

despite being a fictional character, Miku has opened for Lady Gaga's 2014 ArtRave tour (most notably at Madison Square Garden in New York), appeared on David Letterman's *Late Show*, collaborated with Pharrell Williams on a remix of "Happy" for the film *Jellyfish Eyes*, has been included in multiple iterations of the *Just Dance* video game series, and has served as creative inspiration for designs by Marc Jacobs.[19] Miku is not human, "but 'she' represents more than just a fad in fringe youth culture. The synthesis of the singing voice is a watershed event in our evolving socio-cultural relationship with what it means to be human."[20]

. . .

As of March 2019, there are almost 16.5 million videos uploaded on NicoNico (ニコニコ), the Japanese video streaming website which has served as the primary hub for Vocaloid videos since its 2006 launch (NicoNico). On YouTube, there are just over 2.75 million results for videos associated with the word "Vocaloid." (Search for YouTube results with the search term "Hatsune Miku," and that number jumps up to either either 3.1 million or 3.89 million results, depending on whether the Japanese or Romaji spelling is used.) VOCALOIDs have become so popular that there are events, contentm and products targeted specifically at the Vocaloid community. Since 2014, Crypton has officially organized and sold out shows for Miku Expo—a series of annual hologram concerts featuring a number of fan-favorite VOCALOIDs that have taken place across East Asia, North America, and Europe.[21] By programing things like dance moves and crowd banter, Miku—and any VOCALOID or character—can perform on stage just like any other vocalist, often complete with human backup dancers and live bands, and the

Project DIVA home and arcade rhythm video game series created by SEGA Games Co., LTD.. gives fans the chance to engage in the same kinds of performances interactively.[22] To choreograph the 3D character models for these hologram concerts and video games, as well as for some animated music videos, creators use human dancers in motion capture suits or programs like MikuMikuDance (MMD), which is a free 3D animation engine made to animate any 3D character model that is commonly used to animate VOCALOID and UTAU characters.[23] There's even plenty for fans that enjoy collecting with a plethora of officially-licensed merchandise to be found at conventions and on websites—including stuffed animals, stickers, clothes, hand-painted statuettes, and more.

The introduction of the character voice model didn't just suddenly make people see VOCALOID characters as celebrities overnight, but it *did* give VOCALOIDs a number of human attributes—official ages, heights and weights, likes and dislikes, and even favorite vegetables—and fans could, quite literally, easily fill in the rest of blanks themselves. Even VOCALOIDs like MEIKO and KAITO, which are meant to sound more realistic than voice-acted, are not failures. They are still beloved to many producers and fans in the Vocaloid community, and there are popular character voice VOCALOID characters released since V1 which also emulate realistic voices, such as GUMI (グミ) and Camui Gackpo (神威がくぽ).[24] Through the character voice model introduced by the Character Voice Series, VOCALOIDs began to be seen as humanesque in a way that paved the path for every voice synthesizer which followed. Voicebanks and

character designs could, with enough creativity, become any kind of performer that fans wanted—from pop sensations and rappers to dance sensations and rock stars.

With the introduction of the character voice model, songwriting in the VOCALOID multi-genre suddenly became a different experience. A producer using a voicebank was no longer using a disembodied voice but, instead, a unique performer. Because adapted versions of the international Creative Commons License, creators are free to privately use and depict VOCALOIDs like Miku in most any way they want (so long as they remain within the bounds of public policy); and if they want to use VOCALOIDs for commercial uses, all they have to do is receive official licensing by contacting the company which owns the VOCALOID character.[25] (Commercial use includes both for-profit and not-for-profit uses, such as commissioning art for music videos, three-dimensionally animating dance videos using VOCALOID character models.) Saying that Hatsune Miku, for example, is just a character design and a voice is "misrepresenting the relationship between Miku the image and Miku the synthetic voice."[26] Crypton Future Media CEO Hiroyuki Ito, described the true connection in the following way.

> Hatsune Miku, through an open licensing scheme we have adopted, can be used freely by anyone in their own creations, as long as it is not for commercial profit. That includes her voice, but also her appearance and design. Thanks to that, thousands and thousands of fans have been making and sharing their artworks on the internet, which gives them a chance to interact not only with Miku by making her sing or dance, but with other users and fans. Every song or illustration can give inspiration to

> another creator to make their own, or offer their help to improve it. We like to call that a "chain of creation."[27]

So, then, "what Miku fans are really cheering for are the 'people on the other side,' the community of amateur producers of songs, stories, fashion, and animation that are collectively 'Miku,'" and the same goes for every other VOCALOID character.[28]

In summary, Miku and the Character Vocal Series ultimately garnered VOCALOID a lot of free publicity, and new consumers stumbled across both the application and community from a variety of online spaces which, gradually, came together to form the widely expansive, diversely-skilled Vocaloid community.

. . .

The growth of the Vocaloid multi-genre and community coincided with the developments in traditional music industry software and hardware accessibility, meaning that Vocaloid producers became quickly able to make songs at the *same* production quality as industry professionals using the *same* strategies as professional songwriters. Vocaloid, too, became accessible and affordable, leading for the community to globalize. Non-Japanese consumers, for example, have become Vocaloid producers and fans, as the international popularity of VOCALOID has led to the development and use of voice synthesizer voicebanks in English, Chinese, Korean, Spanish, and more. There is also the entire UTAU community, which uses the Vocal Synthesis Tool UTAU shareware application made by Ameya/Ayame (飴屋／菖蒲) to create and use their own original voicebanks. (Some of these UTAU voicebanks and characters, such as Kasane Teto (重音テト), have emulated the Vocaloid character

voice model so well that they have been widely mistaken for official Vocaloid voicebanks.[29]) This is a large part of how voice synthesizer programs such as VOCALOID have led to such large creator and fan communities today.

I have been using the terms "the Vocaloid multi-genre," "the voice synthesizer music industry," and "the Vocaloid (or UTAU) community" to distinguish between the many genres represented in voice synthesizer music, the collective commercial scene thereof, and the social group which has formed around each because of the VOCALOID character voice model, respectively. Vocaloid music is, after all, a multi-genre, given the fact that the primary marker of a voice synthesizer song is, simply, the use of a voice synthesizer. If you were to believe at this point that every song featuring Hatsune Miku is in the same genre just because they all feature use of the same VOCALOID, for example, you would be severely incorrect; the same goes for all voice synthesizer music collectively because any two Vocaloid producers may invoke and utilize any number of different genre markers—from dance to hip-hop to folk. This just is one more way that the Vocaloid community has attracted creators and consumers from different spaces, further expanding the modern-day voice synthesizer music industry.

The Human Voice in Vocaloid: Cover Artistry and Community in the Multi-genre

While VOCALOID characters like Hatsune Miku may take the place of a traditional performer, they aren't the ones credited for their songs—at least, not anymore. In the early days of the Vocaloid multi-genre, fans would associate songs with

the VOCALOID used to create it; over time, though, especially as the different styles of creators became more and more apparent, songs became more principally associated with the creator communities behind them. Now, the general rule for referring to a voice synthesizer song is to state the song name and the producer(s) it is written by *first*, which is *then* followed by a parenthetical note of the voicebank(s) the song features. This re-alignment of focus from VOCALOID characters to the Vocaloid producers who use them has followed through to all aspects of voice synthesizer song crediting—sometimes leading to lengthy, but important, credits of all the collaborators involved in the creation of voice synthesizer songs and music videos. There are many possible roles to credit, after all: other than their basic design, voicebank, and characteristics, VOCALOIDs are only what their fans make of them. Every VOCALOID is but a "an instrument, a means whereby something is achieved, performed, or furthered," which serves as a way to showcase the creators which have built and dictated the norms of the voice synthesizer music industry that has been created by their use.[30]

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In addition to the plethora of Vocaloid producers, artists, animators, translators, and video editors, some of the most notable members of the Vocaloid community are *utaites* and youtaites. *Utaite* (歌い手), meaning "singer" in Japanese, refers to a Japanese-speaking cover vocalist in the Vocaloid community. There are many, and some have turned their cover-artistry into professional careers—both in the voice synthesizer and traditional music industries. The eleven-member Japanese group Supercell got its beginnings writing songs using Hatsune Miku and went on to be signed

by Sony Music Entertainment in 2009, after which they moved on from Vocaloid songs to produce their own, original music.[31] Another example is *utaite*-producer duo group REOL, which had seen success producing Vocaloid original songs and covers for four years before being signed by record label Toy's Factory Co., LTD. in 2016; after disbanding in 2017, REOL's music producer Giga (ギガ) returned to his roots as a Vocaloid producer while vocalist-lyricist Reol (れをる) continued releasing her own original music as a traditional recording artist under the label.[32] Even as recently as March 2019, the Walt Disney Company released *Connected to Disney*, an album of classic Disney movie songs produced by longtime *utaite* Mafumafu (まふまふ) featuring covers by him and five other prominent *utaites*: amatsuki (天月-あまつき), 96neko (96猫), Soraru (そらる), Urata (うらたぬき), and Aho no Sakata (あほの坂田).[33]

These stories are not unique to *utaites*, by far. The emergence of Vocaloid producers in spaces commonly populated by traditional songwriters and music producers is part of what developed the Vocaloid community to such a point.

> The history of the unofficial Miku anthem, "Tell Your World," is emblematic of the prosumer convergence that characterizes Vocaloid culture. Commissioned by Google Chrome Japan for a marketing campaign, the song is the creation of Kz ("K-Zet"), one of the first *dōjin* musicians to gain popularity for songs featuring Miku vocals. *Dōjin* refers to self-published works, including manga, novels, video games, art, and music, that are often sold and traded through conventions like the biannual Comiket market in Tokyo. As an amateur, Kz first gained popularity by uploading

> songs to Nico Nico Douga, Japan’s primary video-sharing site. He teamed up with another do¯ jin musician, Kajuki P,17 to release an independent album under the band name livetune at Comiket 73 in December 2007. Livetune was quickly signed by Victor Entertainment (a subsidiary of JVC) and released two albums of music featuring Hatsune Miku vocals, the first of which reached number five on the Japanese music charts. “Tell Your World” debuted in a 61-second spot for Google Chrome in Japan in 2011. Livetune (just Kz as of 2009) left Victor for the independent Toy’s Factory label and in early 2012 released a full-length single of “Tell Your World” through the iTunes store, making it immediately available in 217 countries. “Tell Your World” was the finale of Miku’s set on Lady Gaga’s 2014 ArtRave tour.[34]

This sort of mobility is how the Vocaloid community itself grew: a niche community became part of the mainstream music scene. Vocaloid producer HACHI (ハチ), for example, who is known for quintessential Vocaloid songs like “Panda Hero (パンダヒーロー)” (feat. GUMI), “Donut Hole (ドーナツホール)” (feat. GUMI), and “Matyroshka (マトリョシカ)” (feat. Miku and GUMI)—produces and performs traditional music under his given name, Kenshi Yonezu (米津玄師), and his music has been successful in both scenes: the anime adaptation of manga *My Hero Academia* (僕のヒーローアカデミア) featured one of his songs as its opening, and his released albums include both Vocaloid voicebanks and his own voice. Another Vocaloid producer, Wowaka, also helped shape

the sound of the Vocaloid multi-genre with early songs like "Worlds End Dancehall (ワールズエンド・ダンスホール)" (feat. Miku and Luka), "Rolling Girl (ローリンガール)" (feat. Miku), and "Two-faced Lovers (裏表ラバーズ)" (feat. Miku) before a lack of recognition for his songwriting led him to focus on his traditional band, Hitorie (ヒトリエ), and went on to arrange for Japanese superstar LiSA and write one of the ending themes for *Naruto* (ナルト) sequel anime *Boruto: Naruto Next Generations* (-ボルト- Naruto Next Generations); he passed away at the age of thirty-one in April 2019 due to heart complications, but left behind a legacy of work which many fans and creators have cited as their inspiration.

The term "youtaite" is a play on *utaite* referring to cover vocalists who principally post on YouTube rather than NicoNico. Youtaites are, generally, non-Japanese fans who record and post covers of Japanese Vocaloid songs using translyrics, or lyrics translated into the singer's native language that preserve as much of the original messaging as possible. Some, like 2019 college graduate rachie, have been recording and posting covers in their spare time between classes and careers, while others, like anime voice actress Jubyphonic (Juliet Simmons), have pursued careers in related fields. There are even English Vocaloid producers and youtaites who have left everlasting marks on the Vocaloid community—like nostraightanswer (Kenji-B) and EmpathP (Aki Glancy), who are the voice providers for English VOCALOIDs DEX and DAINA, respectively.

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One of the most atypical forms of collaboration present in the Vocaloid multi-genre comes from Vocaloid community. The Vocaloid multi-genre itself developed through a means unique to the new era: instant online communication. Through forums and video comments, fans and creators have been able to engage in dialogue—giving fans a direct part in future voice synthesizer songwriting processes though consistent feedback on producer's content (i.e., "I love this art style," "The instrumental was my favorite part," "Your lyrics really resonated with me in a dark time."). This works both ways, however, and has often led to a sort of entitlement among Vocaloid fans which is reflected in both uses of VOCALOID characters and the treatment of *utaites* and youtaites.

Otaku—demographic which, quite literally, changed the face of VOCALOID—are, generally, heterosexual men who face stigma in Japanese society for their superfan tendencies. The VOCALOID multi-genre was not the first to target *otaku*: the Japanese pop (J-pop) industry did so, too, in the early 2000s.[35] They are deeply dedicated fans, consuming in anything and everything associated with their favorite J-pop idol groups: concerts, handshake events, physical CDs, posters, pornographic magazines, and more.[36] There are more than enough commercial appearances to get the idol product in front of consumers' eyes in whatever way speaks most to each one. The production firm "creates" the idol through its marketing, and then presents her to consumers as a series of "products," for lack of a better term. (Think of music performers who speak of being their own "brand." It's the idea same for Japanese idols: the product and the performer are made to be one and the same. The difference is that the production firm is,

commonly, in control of the idol's image rather than the idol herself, and that image becomes the means to profit.) The personas—and even the personal lives—of J-pop idols, though, are molded by the desires of *otaku* and enforced by production agencies. The production firms behind J-pop idol groups, then, create marketing opportunities out of the demand demonstrated by *otaku*, turning a niche community's wanton desire a into a lucrative fantasy acted out by young female performers in Japan. For example, Japanese idols are barred from dating or engaging in sexual relations because, should their relationships be known to the public, they no longer appear as "accessible" or "available" to those male fans which consume in the fantasy; idols caught in a relationship have even been released from their groups.[37]

The J-pop idol fantasy, as it is formed and consumed in by *otaku*, is similar to the relationship between *otaku* and the Vocaloid multi-genre. There is, principally, the effect on VOCALOID character images in the community in the sense that VOCALOIDs "have become part of a system of iconic anime-style characters known as *kyara* [キャラ]: image-beings that fans both idolize and consume"[38] *Kyrara* characters are most often "cute, infantilized, or animalized girls," and many VOCALOIDs—such as the most popular, Hatsune Miku, "with her short pleated skirt and green twintails"—embody such personas by being "sweetly attractive and consummately consumable."[39]

> *Kyara* [. . .] are not "deep," rounded subjects created to express one vision. Instead, they are more akin to surfaces that facilitate the play of desire. A figure such as Hatsune Miku has minimal personality and an exaggerated appearance. There are very few "official" facts about her. The

> first biography released by Crypton Future Media for their pop star in the making deliberately listed only the bare essentials: her age and birthdate (a sixteen- year- old born on August 31), her zodiac sign (Virgo), her height and weight, and her suggested musical genres, tempo, and vocal range. Her expression suggests a cheerful, "genki" (energetic, spunky) quality, but beyond that there is nothing: no background, no psychology. It is difficult to see her as a complex subject or "real person" to identify with. Instead, she is a figure made up of variable intensities of cuteness, aggressiveness, helplessness, and so on that can be adjusted depending on the scenario one wishes to produce using her image.[40]

Despite the fact that VOCALOIDs like Miku are quite popular, the increase in audience consumption of fiction (and, relatedly, fantasy) in music performance has imposed unrealism on living performers—namely, women.

The consumption of VOCALOIDs as *kyara*, though, raises two questions about the business of songwriting. Firstly, how do these fictional characterizations reflect and affect the music industry, its performers, and the expectations of audiences?

> [V]irtual idols, through their construction as kawaii, create idealized, unrealistic body images for both living female idol singers and their fans. [. . .] [T]he kawaii body is "a diminutive, rounded, passive, tidy body, almost or entirely lacking in orifices and appendages of any kind, implying an inability to exude anything (vomit, excrement) or act upon the world." It

> is a body without any substance or interiority, a literal body without organs.[41]

The second question, tailored more to the voice synthesizer music community and the effect of such programs on the future of music, pertains to the lore that the Vocaloid community creates for VOCALOID characters: Are creators using VOCALOID to define the norms of their community, or "are the users in fact the ones being used, as their affective labor turns the wheels of culture industry—like the expressive puppet that is Miku herself?"[42] Both of these questions are recurrent in the Vocaloid multi-genre. They are there when a female youtaite is accosted for not looking enough like a skinny *anime* girl for male fans, and they are there when a computer application's characters are hyper-sexualized in user-created art.

This potential sort of fantasy-fueled disregard for respect is particularly concerning when considered in tandem with the Vocaloid character voice model and traditional music industry branding strategies. Think about all those music artists who stand out the most to you as the definitive voices of genres and generations. Not imagine that singer being a voice provider: think about the day when holograms of long-deceased performers are singing new songs produced using voice synthesizer programs, their performances dictated indiscriminately by whatever agency holds the legal rights to it and molded to whatever demographic that agency targets. Potentially, this could mean an age of human exploitation in a way which has, largely, not yet been seen: the control over a person's posthumous image, their afterimage. On one hand,

your favorite artist can, in a way, continue to make music into perpetuity, but will it be the same without the most direct of human elements?

And what becomes of the future of music when its past is still around, never missing a note and strutting through a perfectly choreographed set in the uncanny valley?

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One of the most notable phenomena of the voice synthesizer music industry is that, as the Vocaloid community grew, fans began contributing more than just their perspectives. Listeners became collaborating songwriters, fan animators, translators, cover artists, and more. Consumers became the next generation of creators—a similar phenomenon as that which has occured in the traditional music industry as new songwriters are inspired by their experiences with the music of previous ones and have been recently equipped with the technology to achieve the same level of craft. More succinctly, then, Vocaloid producers are Vocaloid *fans*, and they follow much the processes as songwriters and music producers do while using Yamaha's VOCALOID program to bring something new to the music art form.

It is the cycle of Csikszentmihalyi's Domain in action: contemporary music communities—on multiple fronts—are influencing and shaping the craft of songwriting in the music industry. Songwriters are informed by their dual identities: they are listeners who (literally) enrich the form by bringing in new voices and becoming the next generation of creators.

(4) Vocaloid Song-type Recognition and the Voice Synthesizer Domain

In an academic article rebutting accepted notions about creativity, Phillip McIntyre examines songwriting in order to uncover how songwriters, specifically, are able to use their art to relate to others on levels which transcend their own humanity alone—inspirational, romantic, and otherwise. He borrows a term that psychologist Mihaly Csikszentmihalyi coined and contextualized over two decades to describe "the structures of knowledge that the individual, in this case a songwriter, can access" in creation.[43] Csikszentmihalyi calls these structures "the Domain," and he asserts that it governs a given culture's collective knowledge about a specific art form. Oversimplified, the Domain is what you reference when objectively judging artistic content and how you first recognize if that content qualifies as art in the first place.

Consider it like this, songwriter: when you see someone dancing, you can immediately tell that they are dancing (even when it's bad dancing), but how do you subconsciously know what qualifies as dancing? Similarly, when you see a painting or a sculpture, the word "art" probably comes to mind rather quickly. From a young age, even children can understand that certain tones and rhythms qualify as singing, but how does a child learn what music is? How do you know when what you are creating can be referred to using the word "song"?

Csikszentmihalyi attributes this intrinsic knowledge to the Domain. He describes it as a passive force which both influences and informs the art produced and consumed by individuals in a culture—an understanding of artistic production and consumption

founded, as put by Csikszentmihalyi in 1988, somewhere "'in the symbol system of the culture, in the customary practices, the languages.'"[44] That is, the Domain is just *there*. It formed at the first instance of what we now understand to be art (i.e., visual art, music and dance, etc.), and it's enriched with every new iteration of it in the world. The very language that we, as both songwriters and listeners, use to talk about and define it is determined simply by the natural development of our lives and communities.

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In songwriting, the Domain is what simultaneously informs both the songwriter's production *of* a song and the listener's recognition of that product *as* a song. It's what allows songwriters and listeners alike to understand what makes a song . . . well, *a* song. It informs your judgement of whether a song is objectively good or bad, sounds like a specific style, or fits within a particular genre. (Well, it is such inasmuch as you accept McIntyre's adaption of Csikszentmihalyi's Domain. The Domain is just one a theoretical explanation of many, but, I believe, it is useful in understanding how the Vocaloid multi-genre and community developed one another.) Whether you decide to accept such a theory or not, Csikszentmihalyi's Domain ultimately provides a working explanation for how, firstly, the knowledge and recognition of songs as art can be apparent to individuals in a culture or community, both the songwriters and listeners alike, regardless of whether or not those individuals received any form of formal music education and; secondly, it's core concept of how accessible and integral that knowledge is to the society within which that culture or community exists may explain

how the Vocaloid community has formed its collective knowledge of the voice synthesizer multi-genre over time.[45]

McIntyre sustains that it is from Domain-based conventions that songwriters gain creative structure—informing the technical tenets of lyric composition and music production, the stylistic markers of genre and style, and the marketing choices of intended audience. He asserts that

> [i]t is the task of the person, in this case a songwriter, to produce some variation in this inherited information, this set of conventions, rules, and ideas of what is, in effect, the structured knowledge of songs and songwriting that the individual songwriter has access to. [. . .] In acquiring this knowledge, a songwriter undergoes a long process of inculcation or immersion in the knowledge developing a feel for it, a sense of how it operates.[46]

In other words, at the same time that the Domain exists as the means through which you, as a songwriter, determines "how a song fits in relation to all other songs, McIntyre believes that it is simultaneously the "structured system that shapes and governs" your craft and the plane upon which you can "contribute to and alter that system."[47]

McIntyre goes on to analogize the relationship between creator-producers (e.g., the songwriter or Vocaloid producer), the fields they are in (e.g., songwriting or the Vocaloid multi-genre), and the Domains of those fields (e.g., the music Domain or the Vocaloid Domain). He equates a creator-producer's final creative product to a fire which, without air and tinder (the Domain) or the active spark which ignites it (the

creator-producer herself), would and could otherwise never exist.[48] This means tha you, assumedly beginning as a song listener, recognize songs as songs by the reference of previous ones accepted as such in your culture and community; you, as a listeners, then, may have become a songwriter who has, in turn, informed your craft—the intrinsic definition of your art—through the same exact lens as certain songwriters before you, bolstering the very Domain which first solidified the concept and vernacular of songs in your mind. This, says Phillip McIntyre, is the relationship between the songwriter, the songwriting field, and the lexicon of songs that is the Western music industry. I believe that the same relationship is present in—and explains, to some degree—the relationship between the VOCALOID application, the Vocaloid community, and the voice synthesizer music industry.

Original Voice and Relatable Songwriting

McIntyre's invocation of Csikszentmihalyi's Domain is a theoretical explanation of the forces which influence the craft of songwriting: it is an assertion, firstly, that there is a constant, unconscious internalization of songs on the part of both songwriters and listeners alike and, secondly, that the inherent knowledge gleaned from internalization influences what songwriters create because it *also* dictates what listeners recognize and (dis)like. By this theory, songwriters resonate with listeners on the basis of shared knowledge. (Though, it may be more accurate to say that Domain-minded listeners recognize and share in songwriters' dedication to craft to an extent.)

The Domain-minded songwriter is, again, simply one way to explain how songwriters relate to listeners: there are yet more. For example, whereas McIntyre outlines research and arguments pertaining to the success of the songwriter in a fourteen-page academic paper, Stewart's one-page "Songwriting and Science" article remains, instead, at a more surface-level—and, arguably, a more easily-accessible—message. Stewart states: "[I]n music, it goes without saying that the most successful songs are those that people like the most."[49] This conclusion, not unlike McIntyre's, presents the conscious appreciation and creation of "good" songwriting as a function of forces separate from the craft of songwriting. Rather than presenting a theory as abstract and foreign as the Domain as such a force, though, Stewart argues that it is a more familiar abstraction which dictates the relationship between songwriters and listeners: subjective experience. If each listener, being uniquely human, can experience the same song differently, how can the songwriter resonate with an entire audience? It would, arguably, require some sort of intimacy or understanding between the two parties. Some scholars have made attempts to distill exactly what that forms the bond between songwriter and listener; many have settled, simply, on emotion.

Paul Long, who teaches media and cultural history in Birmingham, and Simon Barber, who is both a songwriter and a songwriting podcast host, jointly believe that "songwriting is imbued with emotions—from the commitment of the author to the song itself and its consumption."[50] Furthermore, they argue that this idea, itself, is "conventional enough to appear intuitive to writers and listeners both"—making it so that emotional transparency in songwriting becomes the most direct way to reach common

ground between songwriters and listeners.[51] They conclude that, even amidst the imposition of technical and marketing strategies, relatability-minded songwriting at its core *must* be an emotional experience shared between songwriters and listeners; otherwise, songwriters may be seen as ingenuous by their listeners because, by the subjective way that humans discern the world, listeners *may* not resonate with a song devoid of the songwriter's human emotions.[52]

Long and Barber's argument is, truthfully, quite limited in scope, given the variety of intentions with which songwriters compose. One pitfall, to demonstrate, comes from the logic therein: vulnerability *can* achieve authenticity and authenticity *can* thusly achieve relatability, but that is not the *only* means to relatability. There are many songwriters who know the craft well enough to be able to formulaically write lyrics which sympathize (on the surface level) with listener feelings without deeply imbuing their songs with their emotions. See the overwhelming plethora of metaphors for a broken heart, first love, feeling happy, or being successful in popular music today for examples. Your personal music library is likely full of songs which feature similar lyrics, themes, and/or feelings.

This is not to say that Long and Barber are wrong, though (or to say that formulaic songwriting is wholly devoid of emotion): emotion *can* be a powerful tool for you as a songwriter, but it is not necessarily used to achieve successful songwriting through relatability in all music communities. For the purposes this analysis of the Vocaloid multi-genre, the gist of Long and Barber's argument—that, if the crux of successful songwriting is relatability, then the songwriting form *begs* authenticity

through vulnerability—sustains. Songwriting in the Vocaloid multi-genre is, often, narrative-based—meaning that the messages conveyed through lyrics are generally tied to character and story. Because of the creative license afforded in the Vocaloid creator community, these narratives are often used to express feelings that would otherwise be hard to articulate.

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One example of a narrative-based Vocaloid song is "My R (わたしのアール)" by KurageP (くらげP) (feat. Miku), tells the story of a girl who, day after day, talks to other girls who resemble herself through their problems as they stand waiting to jump off of a rooftop. She convinces each girl—one who is short and one with braided hair—that their problems aren't serious enough to warrant suicide and convinces them to keep living instead, but, near the end of the song, she comes across a girl with problems so similar to her own that she can't bring herself to talk the girl down from the rooftop. Soon after, the narrator returns to the rooftop, alone; the short girl unbraids her hair and takes off her yellow cardigan, and the song abruptly ends as she decides to jump—implying that the song's narrative was a characterized account of the daily battle those with suicidal ideation face and the tragedy that can occur in one day.

Another example is "The Wind Extolling Freedom (自由を謳う風)" by Kaoling (Ohkoshi Kaori [大越香里]) (feat. IA, Kaai Yuki [歌愛ユキ], and GUMI), a folk-style duet which narrates the story of young girl in a who witnesses a massacre in her medieval town. The girl's sister, a warrior, falls as part of the rebellion which was wiped out in the massacre, and so the girl, who grows into a young woman by the middle of the song,

eventually takes up the vanguard in her sister's stead—bringing into battle with her the lessons of fortune and freedom her sister instilled in her. Like Fortune's spinning wheel, the song juxtaposes the high points of life and freedom with loss and death. The subject, like her sister, charges into battle alongside new comrades, only to lose them all over time. The last warrior standing, she her end looms as she faces execution by guillotine, but the narrators continue to sing of fortune and freedom, teetering the line between eerie and beautiful as the subject becomes a martyr and the song becomes her requiem. Through narrative and character, Vocaloid producers have been able to convey their own feelings and life experiences through their music—and the relationship between producers and fans in the voice synthesizer music industry has led for a norm of communal vulnerability both in the music and in community's dialogue.

Not every Vocaloid song is narrative based, but many involve some re-interpretation or expansion of the VOCALOID characters used in some way or another. "Kimagure Mercy (気まぐれメルシィ)" by Hachioji-P (八王子 P) (feat. Miku) simply characterizes Miku as a girl who has a crush on a boy that doesn't give her the time of day, and "BRING IT ON (劣等上等)" by Giga (feat. Kagamine Rin and Len) follows a similar sort of expansive characterization by making Rin and Len into children at the cusp of growing up demanding to be taken seriously because they're ready for the world.[3] On the other extreme, "Witch Hunt (魔女)" by Suzuki-P and Ryotai (feat. Luka,

[3] "Kimagure Mercy" is not the official English title of Hachioji-P's song: there is no official English title. Instead, fans have coined this title by transliterating the katakana word "メルシィ," meaning "mercy," and preserving the Japanese word "気まぐれ"—which could mean "fickle," "moody," or "on a whim" in this

GUMI, Gackpo, Miku, Len, and Rin) gives a handful of VOCALOIDs different names and places them into a village where Miku, a priestess, has sentenced Luka to death for being a witch out of jealousy for the love between Luka and Gackpo, a prince. "The Lunacy of Duke Venomania (ヴェノマニア公の狂気)" by mothy (feat. Gackpo, KAITO, GUMI, MEIKO, Luka, and Miku) tells a narrative with a similar level of recharacterization, turning Gackpo into the vengeful predator Duke Sateriasis Venomania, who has the power to hypnotize women; after multiple kidnappings, KAITO (re-characterized and re-named as Karchess Crim) disguises himself as a woman and pretends to be hypnotized long enough to stab Venomania in the heart.[53] Some Vocaloid songs are social commentary, like the themes of over-consumption and depreciation of craft in "The Disappearance of Hatsune Miku -DEAD END- (初音ミクの消失 -DEAD END-)" by cosMo@Bousou-P (cosMo＠暴走 P).

> "The Disappearance of Hatsune Miku," has Miku reflecting on her precarious existence within digital files that can end up in the computer operating system's trash bin. As the song builds to the event of "an irreversible error" the singing is furious, glitchy, and rapid, effects achieved

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context—as romaji. "BRING IT ON," conversely, is the official English title of Giga's song provided by producer himself, but the transliterated title of the official Japanese title would actually be "Inferiority Superiority." This difference in title across language, however, is common in Vocaloid music, as many Vocaloid songs lack official English titles (or simply have community-coined titles that are more commonly used that the official ones). As a result, the Romanized names of all voice synthesizer songs referenced in this paper will be the most recognizable name of the song as used in the Vocaloid community, official or otherwise.

> as affordances of the software itself, leaving behind any desire for human fidelity.[54]

Regardless of whether or not a Vocaloid song is narrative-based or not, though, the direct engagement with the community at all steps of the songwriting process has by-and-large led to a body of songs which speak to the diverse experiences of the community. For more examples, please see the appendix of this paper, a playlist which may serve as a curated first foray into the Vocaloid multi-genre.

“Throughness” and Other Creative Metaphors

So now you, as the songwriter, know how to write lyrics and how to produce music, and you know that successful songwriting can be achieved by prioritizing relatability through vulnerability. Now what? At what point does your project go from being a work-in-progress to being a full-fledged song? When does it just *work*? How do you achieve something as abstract as relatability in as structured a way as possible? Psychology professor David Carless provides a way to talk about this point via the horse-riding concept of “throughness”—a concept he discovered after author Meg Rosoff related it to creative writing. His theory sets out to define one of the most abstract parts of the songwriting craft, and his conclusions—like Stewart’s, McIntyre’s, and Long and Barber’s—help to build the vocabulary needed to discuss the Vocaloid multi-genre.

In order to better understand how he writes songs, Carless researches the processes by which songs are written and assessed. As he begins seeking answers, though, he only finds that there are yet deeper questions of craft and analysis to consider.

> I feel an expectation to articulate process, to speak of method. Yet when I contemplate this task my mind clouds with questions: How do we write songs as qualitative research? What kinds of processes matter when writing a song? What can we do to support and nurture these processes?[55]

His musing inevitably turns from method to the source and manifestation of inspiration in songwriting. What do you draw upon when writing songs about your own (or another's) life, he asks, and how is it that culture, politics, and personal biography become so powerfully entwined in music?[56] Carless cannot discern just one answer, and, so, he determines that he, as a songwriter, can only find the answers to the questions he *personally* has about songwriting.

> At times in music it does feel like I'm being asked questions—and my only hope of finding an answer is through playing, singing, writing. Finding an answer is creating a song, and this necessitates making connections between different elements of my "hidden self"—thoughts, emotions, memories, experiences, sensations—by successfully connecting aspects of my "musical self"—melody, rhythm, phrasing, words and tones.[57]

He argues, then, that to create a song is to connect that which exists deep within yourself to the more technical tenets of songwriting. It is a personalized harmony, a reconciliation of what you know of yourself with what you know of songwriting, born by letting the two, disparate selves within you (e.g., the person, comprehensively, and the songwriter, specifically) engage in dialogue with one another. He stresses that the songwriting process you develop through that connective introspection, though, will likely be different from other songwriters': "Bob Dylan has said that some songs take about as long to write as they take to sing."[58] Instead, he ultimately concludes that songwriters should utilize connective introspection to cultivate their instincts of when their own songs just *work* for no utterable, or widely applicable, reason.

Carless' article is inspired by a BBC Radio 4 interview with Meg Rosoff, wherein Rosoff describes how she latched onto the idea of "throughness" after her riding teacher began to "instruct her to 'be more through'" during lessons.[59] The idea is loose, but throughness, reductively, refers to the connection between the two ends of a horse, the front and the back, and when it is present, the horse "works," so to speak: throughness is "a cycle of energy between horse and rider, connecting the two, which has to be soft but strong."[60] Rosoff uses this concept to explain how she can tell when a novel, too, simply *works* (or *fails* to work), and Carless finishes the thought as he reflects on his own songwriting: "I can feel when throughness is present—and see when it is missing. Yet I cannot control it," he realizes, "I cannot make it happen."[61] Carless argues that the path to achieving thoughness, that cycle of energy within a creative work, is found

through your original voice—a term he uses to describe the ever-mythical “zone” that writers access in composition.

> Original voice, she [Rosoff] finally understood, is determined by the flow of energy between the conscious and the unconscious mind. “If you’re working from the unconscious, from that powerful elemental place, represented by the horse,” she says, “then a book will have a voice and a book will feel individual and different and unique.” Without it, a story feels lifeless. This revelation, she tells us, solved a problem that had long been bothering her: how people talk about “being in the zone” but never explain where “the zone” is or how you get there. The minute Meg started thinking about a cycle of energy between conscious and unconscious, between horse and rider, she says it gave voice a place. “It tells you where the writing is coming from, from this deep, elemental, powerful unconscious.”[62]

I’ll leave you, songwriter, with this, then: when you write, don’t just think about the most technical or abstract components of your craft. Both are important, yes, but don’t forget to also think about every aspect of yourself. Bring those pieces—your experiences, your culture and community, your skill, and your feelings—through using the songwriting process as a tool, the medium through which your purest human mind and heart can be showcased and shared with the world.

(5) Afterthoughts on the Transhuman Implications of Vocaloid in Traditional Music

I have said all of this to say that songwriting, as an art, may currently be in one of its many periods of change. VOCALOID, truly, may or may not become a prevalent part of the traditional music industry one day, but I'd like to believe that voice synthesizer songs have a place in mainstream music. They can, oftentimes, present a menagerie of lovingly-crafted sounds and shared stories which consumers, having a high demand to see these things in the media they engage with, have created and popularized themselves. Vocaloid music is but one way in which creation and consumption have been shown to actively function in tandem with one another.

The community, being a largely unorganized conglomerate of individuals across numerous online spaces, still has its problems, of course: many creators and fans who have been a part of it since its early years often take to Twitter and other platforms to commune through jokes and memes which can be so deeply introspective that they become critical of the very conventions of the voice synthesizer music community itself. And, what's more, there is a sense of communal accountability which has led to dialogue about everything from the trend of community creators personally suffering—mentally, emotionally, and/or physically—for the sake of their art to the ownership of ideas and content in a highly collaborative scene. There is a sort of progress which has been, and still is, coming into existence through the voice synthesizer music community which speaks to the lives and craft of all creators, and I think that's something which will persist regardless of whether or not Vocaloid becomes popularized. Arguably, it is the

sort of thought, discovery, adaptation, change, and reflection which will change the music industries that the next generation of songwriters will inherit.

References

[1] C. Neal Stewart, Jr., “Songwriting and science.,” *Science* 349, no. 6246: 446, https://doi.org/10.1126/science.349.6246.446.
[2] Pat Pattison, *Songwriting: essential guide to lyric form and structure* (Boston: Berklee, 1991), 5, 8, 11-12, 19-20, 23, 37, 53-64, 74.
[3] Michael Zager, *Music production: For producers, composers, arrangers, and students*, second edition (Lanham, MD: Scarecrow Press, 2012), 72, ProQuest Ebook Central.
[4] Ibid., 72.
[5] Ibid., 136, 142, 139-44.
[6] Ibid. 147-9.
[7] Sarah A. Bell, “The dB in the .db: VOCALOID software as posthuman instrument,” *Popular Music and Society* 39, no. 2: 226, https://doi.org/10.1080/03007766.2015.1049041.
[8] Zager, “Music production,” 6.
[9] Ibid., 395.
[10] Ibid.
[11] Ibid., 6-7.
[12] Ibid., 102.
[13] Ibid., 151.
[14] Zager, “Music production,” 26.
[15] “Character Voice,” Vocaloid Wiki, FANDOM, updated January 6, 2018, https://vocaloid.fandom.com/wiki/Character_Voice.
[16] Bell, “Posthuman instrument,” 231.
[17] “Character Voice.”
[18] “Hatsune Miku,” Vocaloid Wiki, FANDOM, updated February 22, 2018, https://vocaloid.fandom.com/wiki/Hatsune_Miku; Mona Lawlani, “It takes a village: The rise of virtual pop star Hatsune Miku: The crowd-sourced singer will embark on a multi-city American tour this year,” *Engadget*, February 2, 2016, https://www.engadget.com/2016/02/02/hatsune-miku/.
[19] Bell, “Posthuman instrument,” 225; Person; Lawlani, “It takes a village.”
[20] Bell, “Posthuman instrument,” 222.
[21] Lawlani, “It takes a village”; “Miku Expo,” Crypton Future Media, INC., accessed March 28, 2019, https://mikuexpo.com/.
[22] Lawlani, “It takes a village”; “Hatsune Miku -Project DIVA- (series),” Vocaloid Wiki, FANDOM, updated January 20, 2019, https://vocaloid.fandom.com/wiki/Hatsune_Miku_-Project_DIVA-_(series).
[23] Lawlani, “It takes a village”; “MikuMikuDance,” Vocaloid Wiki, FANDOM, updated February 7, 2019, https://vocaloid.fandom.com/wiki/MikuMikuDance.
[24] “VOCALOID2,” Vocaloid Wiki, FANDOM, updated March 25, 2019, https://vocaloid.fandom.com/wiki/VOCALOID2.
[25] “For Creators,” Pirapro (website), Crypton Future Media, INC., accessed March 28, 2019, https://piapro.net/intl/en_for_creators.html; “Hatsune Miku V4 English,” SONICWIRE (website), Crypton Future Media, INC., https://sonicwire.com/product/vocaloid/special/mikuv4e.
[26] Bell, “Posthuman Instrument,” 225.
[27] Emily Petrarca, “Meet Hatsune Miku, the Japanese pop star hologram,” *W Magazine*, May 30, 2016, https://www.wmagazine.com/story/hatsune-miku-crypton-future.
[28] Bell, “Posthuman instrument,” 225.
[29] “UTAUloids,” UTAU Wiki, FANDOM, updated September 21, 2018, https://utau.fandom.com/wiki/UTAUloids.
[30] Bell, “Posthuman Instrument,” 225.
[31] Lawlani; “Sandbox/Supercell,” Vocaloid Wiki, FANDOM, updated October 24, 2014, https://vocaloid.fandom.com/wiki/Vocaloid_Wiki:Sandbox/Supercell.

[32] "Giga-P," Vocaloid Wiki, FANDOM, updated November 28, 2018, https://vocaloid.fandom.com/wiki/Giga-P.
[33] "Connected to Disney," Universal Music Japan (website), Disney, accessed March 28, 2019, https://sp.universal-music.co.jp/connectedtodisney/.
[34] Bell, "Posthuman Instrument," 233.
[35] holsetymoon, "A Brief History on Idol Culture in Japan and The Ascent of The Superfan," JpopAsia (website), https://www.jpopasia.com/feed/15621/a-brief-history-on-idol-culture-in-japan-and-the-ascent-of-the-superfan/.
[36] Sam Byford, "Dating AKB48: the J-pop cult banned from falling in love: Teenage sex symbols pay the price for breaking draconian dating rules," *The Verge*, Feb. 8, 2013, https://www.theverge.com/2013/2/8/3967268/akb48-minami-minegishi-how-a-j-pop-cult-took-over-japan; Emiko Jozuka and Yoko Wakatsuki, "Why a pop idol's stand against her assault sparked outrage in Japan," CNN, Jan. 16, 2019, https://www.cnn.com/2019/01/16/asia/japanese-pop-idol-sexual-assault-apology-bullying-intl/index.html.
[37] Byford, "Dating AKB48"; Jozuka and Wakatsuki, "Pop idol's stand."
[38] Sandra Annett, "What Can a Vocaloid Do?: The *Kyara* as Body without Organs," *Mechademia* 10: 164, https://muse.jhu.edu/.
[39] Annett, "The *Kyrara*," 168.
[40] Ibid., 169.
[41] Ibid., 172.
[42] Ibid., 165.
[43] Phillip McIntyre, "Creativity and cultural production: a study of contemporary western popular music songwriting," *Creativity Research Journal* 20, no. 1: 42, https://doi.org/10.1080/10400410701841898.
[44] Quoted in McIntyre, "Creativity," 41
[45] McIntyre, "Creativity," 42
[46] Ibid.
[47] Ibid., 49.
[48] Ibid., 43.
[49] Stewart, "Science," 446.
[50] Paul Long and Simon Barber, "Voicing passion: The emotional economy of songwriting,"European Journal of Cultural Studies 18, no. 2: 148, https://doi.org/10.1177%2F1367549414563298.
[51] Ibid., 148, 153
[52] Ibid., 153-54.
[53] "ヴェノマニア公の狂気 (Venomania-kou no Kyouki)," Vocaloid Wiki, FANDOM, updated March 17, 2019, https://vocaloid.fandom.com/wiki/%E3%83%B4%E3%82%A7%E3%83%8E%E3%83%9E%E3%83%8B%E3%82%A2%E5%85%AC%E3%81%AE%E7%8B%82%E6%B0%97_(Venomania-kou_no_Kyouki).
[54] Bell, "Posthuman Instrument," 227.
[55] David Carless, "'Throughness': a story about songwriting as auto/ethnography," *Qualitative Inquiry* 24, no. 3: 227-8, https://doi.org/10.1177%2F1077800417704465.
[56] Ibid., 228.
[57] Ibid., 230.
[58] Ibid., 229.
[59] Ibid., 228.
[60] Ibid.
[61] Ibid., 228, 230.
[62] Ibid., 230.

"[T]he many incarnations of Miku, from fan production to holographic distribution, offer a model of civic practice that provides insight into how collective action is leveraged in the digital environment. [. . .] [M]usic is the platform, as it has always been, and that Vocaloid is an instrument with affordances and constraints uniquely able to help us explore our complex relationship with conceptions of voice and its changing material and technological iterations."[63]

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[63] Bell, "Posthuman Instrument," 236.

(6) Artist's Statement: Traversing the Creative Journey via Transhumanism

Much like my love of writing, I stumbled upon the Vocaloid scene by coincidence and the non-linear stumble that is self-discovery. But I can remember *exactly* when and where it happened: during my first semester of college, sitting in front of the northern window of my third-floor single room.

I saw my first year at DePauw University as an opportunity to try new things, and, having never really had a hobby other other than reading, I had set out to find something I could be passionate about. I sang in choirs through much of my childhood and had always found something enrapturing about it—the feeling of music, the skill and sway of performance. So the first thing I tried was what was familiar to me: after one semester of doubting myself , I joined a choir at my university. (I was, in my mind, a liberal arts student woefully incomparable to the dedicated music school students in choir. It took time for me to begin using my voice despite those feelings.)

My high school choir director was more of a vocal coach. She had been on national—even international—musical tours and has an absolutely beautiful voice. But she wanted to teach; she wanted to teach young people of color how to use their voices, and she spent so much of her own time outside of our choir practices teaching

my peers and I about music theory and vocal techniques. She did this for years until she was forced to retire by a cancer diagnosis, but she's never stopped singing. I think I'll always remember that.

My experiences in choir, then, had already made me a lot more aware of the musicality inherent in popular music, but my time in choir at DePauw gave me an even deeper understanding and appreciation for everything that creators and performers put into a song. That appreciation made me want, desperately, to find and hear music that was well-crafted, emotionally stirring—songs that were *enrapturing*. I had, then, a determination to discover music which existed in multitudes: craft, empathy, skill, talent, and, yet, even further on and on into infinity. I hadn't heard much music at the time'; I kept to limited playlists. I could claim only a handful of artists and bands as ones I'd critically listened to and enjoyed. Much of my musical taste, really, has existed periodically.

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I associate my elementary school years with Yellowcard. I call it my Yellowcard phase, though that implies that I don't still sing "When We're Old Men" under my breath when I'm anxious, or that I don't still jump out of my seat when the intro of "Ocean Avenue" begins rising under the ambiance of restaurant chatter, when I most definitely do. I call it that, though, because it was a period of my life when I only listened to songs that were either on Radio Disney and preloaded on the twenty-dollar MP3 player my parents bought for me I as a Christmas gift when I was seven years old. (I later found out that my maternal grandmother actually bought the gift and that it was actually meant

for my younger sister and I to share. I knew neither of these things at the time, though, so I kept it for myself. At twenty-two, I still call it mine, but I thank my grandmother for the gift: it was more than she, or I, could have ever known.)

The music I had grown up with, then, was largely juvenile and, despite finding exceptions which I could qualify as noteworthy enough, I felt largely underwhelmed by the depth of lyricism or musicality in most of it; the songs on that cheap MP3 player, though, were different—new and completely foreign to me. I, up until high school, had neither the regular use of the internet the sort of friendships that could lead me to new music, so I had no way to listen to really know about most songs that weren't on a children's cable television channel or directly brought to my attention by another person. I didn't even know what sort of songs I liked. To have five songs that, to me, came from the ether became a godsend and a near-addictive fascination with the differences between styles, genres, and songwriters.

I haven't touched that MP3 player in years, but I can perfectly recall each song. There was Ted Leo and the Pharmacists' "Me and Mia," Communique's "Perfect Weapon," Yellowcard's "Sureshot," Thunderbirds Are Now's "We Win (Ha Ha)," and Of Montreal's "Wraith Pinned to the Mist and Other Games." My favorite of the bunch changed multiple times, but each wound up on repeat and looping through my headphones at some point between the time between my first and sixth grade years, by which time I had managed to search for other songs by each artist and, ultimately, fell in deeply into the album-to-album sound of Yellowcard. This solidified the longest period in the progression of my musical tastes, which continued until I was about fourteen.

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The second period is less defined, though. It was, more-or-less, a continuation of the Yellowcard phase with other groups and artists added the mix—namely, OK Go, Demi Lovato, Of Monsters and Men, and Panic! At the Disco. My tastes were still limited and largely based in the same few music scenes, but I had grown into more opportunities to search and connect with people: my palette hungered for more. Being in choir in high school, again, helped in developing that hunger, but it also led me to showtunes—which, in turn, made me realize the that I gravitate more towards music which exists within narrative schema: I realized that (between the genres and songs I liked most at the time) there *was* something obvious about what music I enjoyed and that I could use that to find even more.

In addition to narrative, I found certain feelings—certain emotions and inarticulable energies—to be enrapturing in song. My mother often said that my taste in music during middle school and high school was “depressing,” and I won’t *wholly* deny that. I was depressed, after all, and I hardly knew the language to talk about that even as I sought out music which resonated with how I felt. Regardless, what I listened to then was the music that I identified with: it was the music which spoke to me in many somber moments and, despite still having many of those songs on current playlists of mine, I do not now experience the same feelings in the same ways that I did when I first came across them. Who I am now at the end of my undergraduate career, my tastes and the energies I resonate with, is not still who I was high school. Many of the narrative and thematic frameworks of those songs have nonetheless remained references for my

current consumption and composition of music. I call this the Confrontation phase, named after one of my favorite songs from the *Jekyll and Hyde* musical score—which, collectively, is a prime example of the sort of complex, abyssal, darkly human multiplicity which I yearned (and still yearn) to find and hear in music. This period lasted until the beginning of the Vocaloid period, which came when I was eighteen years old.

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I can't accurately pinpoint the first Vocaloid song I came across, but I can detail my earliest interactions with Vocaloid songs vividly. The first song that comes to mind is "drop pop candy" by REOL feat. Kagamine Rin and Megurine Luka. I didn't actually listen to the song for at least a year after I first came across it, though. I simply saw the name a lot between 2015 and 2016 because that was when the indie video game hit *Undertale* had a thriving fan creator community.

The *Undertale* fandom, like many other, includes fans of a wide array of talents and interests, which has led to the generation of a lot of fan-created content. This content—namely, fan art—was shared through social media and video streaming platforms constantly after the game was released in late 2015. Two of the most popular types of fan works that gets shared online, though, is the fan-made promotion video (PV) and the animated music video (AMV). PVs and AMVs respectively involve setting pre-existing video clips or fan-made animation to pre-existing or original songs—relating the characters of source narratives and events pertaining to its source content to a song the creator(s) enjoy. The concept is similar to that of song-fics, works of fan-written fiction incorporating the lines of one or more songs which the writer sees as related to

the source content, and the traditional music video form. During my first year at college, I stumbled upon multiple *Undertale* PVs and AMVs and, seeing as I had previously found songs I enjoyed through song-fics in high school, I often ended up watching them simply to see what music I would stumble upon as a result.

Even though I came across them many times, I never actually watched an AMV of “drop pop candy” during that year. Succinctly, it’s a song about a girl who, on a rainy day, has re-affirms her drive to keep moving forward with the people who stand by her side. I came across a few different AMV versions, but the video thumbnails always looked too upbeat—the look too colorful, the song too seemingly shallow. I think, at the most, I tried watching *some* an *Undertale* AMV for the song, but I never actually finished it. I do distinctly remember the sound, though—the snippets of two male VOCALOID voicebanks mixed in harmony to simulate the wordless voices of *Undertale’s* video game characters. (So I suppose “drop pop candy” truly *is* the first Vocaloid song I ever heard, then.) It wasn’t until sometime during my sophomore year that I really listened to “drop pop candy.” There are actually two original versions of the song, both of which were released on the same day in July 2014. One uses Rin and Luka, but the other features the voice of Reol. I didn’t understand any of what I heard that first time, though, and I didn’t know what a Vocaloid producer or an *utaite* was. But I grew to like it. I saw more depth in it over time, the slight nuance in the lyrics and the dedication of the translators and cover artists that made its narrative accessible to me. I had come across something in the music world that I hadn’t before.

I yearned to find and hear more.

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I hadn't really gotten much into the Vocaloid scene by the middle of my sophomore year at DePauw. Most of what I was listening to was the same as what I listened to in high school. The main difference was a number of *Undertale* soundtrack songs, covers, and parodies. I remember listening to the entirety one Vocaloid song first, though: "Reincarnation (リンカーネイション)" by KEMU VOXX feat. Rin and GUMI. I made it the first Vocaloid song added to my "Liked Videos" playlist on YouTube. "Reincarnation" had the sort of shadow-embracing depth that I looked for in music at the time, and so I found myself revisiting an *Undertale* PV version of it often. And when I wasn't listening to it, the melody found its way into my head. I had only listened to it because someone related it to a video game I liked but, before long, I was interested in it for *itself*: I wanted to know the story that it *originally* told. I looked for the original video, and the rest of my Vocaloid phase, where I still find myself now, has progressed rapidly from there.

The next Vocaloid song I listened to was similarly unintentional and just as similarly explorative. There is a vibrant anime, video game, and voice synthesizer creator community on YouTube which has dedicated itself to producing quality covers of show openings, game soundtracks, end-credit songs, character themes, and voice synthesizer songs, and more. While the Youtaite community is often separate from other YouTube creator communities, these three communities, specifically, often run rather closely parallel to one another—sometimes even crossing paths—because of the shared experiences of fan creators across the platform. From 2015 to 2016, I listened to

anime and video game covers by artists like Amalee (Amanda Lee) and NateWantstoBattle (Nathan Sharp), which, through the hit-or-miss helpfulness of YouTube recommendation algorithms, eventually led me to Vocaloid covers.

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The second Vocaloid song I ever added to my "Liked Videos" playlist was a chorus battle cover version of "The Wind Extolling Freedom" by Kaoling (feat. IA, Kaai Yuki, and GUMI). The version I came across was sung by Électrude+—a collaboration of six utaites, one artist, and two animators who competed in Serendipity Chorus Battle (SCB) in 2014. Having learned even more about choral arrangements in choir at my university, I was drawn in by the group's voices and harmonies, and the vibrant fantasy-style character and art designs they included in their corresponding video—a nod to the song's original music video—only made their artistry all the more enrapturing to me. Once I took the time to parse through translations of the lyrics—and, eventually, saw Kaoling's original song and video—the juxtaposition of righteous rebellion uplifting the song's speaker despite the hopelessness of her situation and her bleak end invoked, in me, the sort of resonance with the somber-but-definitely-resilient energy that I rarely found, but wanted for, in music. It was a similar feeling as that which KEMU VOXX's "Reincarnation" incited in me, and, so, I began to listen more intently to the Vocaloid songs I came across on YouTube. With each one I added to playlists, I felt like I had finally found the sort of music that I could enjoy both listening to and singing, the sort of music that I wanted to one day write.

I was gradually listening to more and more cover artists on YouTube—Caleb Hyles, adriasaurus (Adriana Figueroa), Lizz Robinett, and Tsuko G., Static-P, Mandopony (Andrew Stein), and Black Gryph0n (Gabriel C. Brown), to name a few—but I ended up gravitating towards channels that focused primarily on Vocaloid covers. One of the main catalyst channels for me was LittleJayneyCakes (Jayn), whose video uploads ran the gamut from anime covers and video game parodies to original songs recorded using live vocals and Vocaloid voicebanks. Her renditions of "Again" by Crusher-P (Cien Miller) and The Living Tombstone (Yoav Landau) (feat. Araki)[4] and "O Light (光よ)" by Kikuo (きくお) struck me for their raw, emotive vocals and hauntingly heartbreaking lyrical themes of non-belonging, cycles, and defiance in the face of hopelessness. Through Jayn's vocaloid covers and original songs that I was eventually led to other Vocaloid cover artists—such as JubyPhonic (Juliet Simmons), Lollia (Adeyline Gabuya), rachie (れいち), Aruvn, Kuraiinu (Chisio, Nijigenki), and Anthong the Gay. I ended up listening to Vocaloid covers so many times that I wanted to hear the original versions, too, so I began seeking out Vocaloid producers whose styles I liked—like VocaCircus (Circus-P), DECO*27, KIRA, and Hachioji-P (八王子 P), and many more.

All of these artists, and more, have inspired me as I began to revisit creative writing in college. I took a songwriting course late in my Junior year, and I immediately

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[4] Crusher-P and The Living Tombstone released this vocal version of the song one year prior to the Vocaloid version, which was mixed using GUMI. The Vocaloid version is largely the same as the vocal version, though there are differences at parts—particularly the way each ends.

began to emulate what I had heard (and seen) in the Vocaloid multi-genre. It never felt like I had to change my style to fit into the form, either: I saw the songwriting form as a medium where I could enrich my style with the sounds and colors that I, uniquely, experienced in composition—different from all the other types of writing I've explored and enjoyed. Vocaloid is simply the multi-genre which has, recently, spoken to me the most, broadening my perceptions of song through resonance.

And I think that's a wonderful thing.

It's taken time, but I'm beginning to learn how to understand my voice and emotions as both a creator and a consumer. This project and its artistic supplement are meant to explore ways in which the Vocaloid multi-genre and the voice synthesizer music community can serve as transhuman components of the future of songwriting—voices and characters which can serve as examples of such indisputably human emotions, identities, and journeys in the same way that we humans can see ourselves in even the most inhuman images of visual art mediums. The original song I have written as the artistic supplement to this project, then, is but a chance for me to contribute to the development of those voice synthesizer song forms which may pave such a way and an application of my dual-knowledge of the multi-genre as both a writer and a fan—as both a creator studying its domain and a consumer resonating with its emotions, a songwriter and a listener run through into an endless loop of music.

(7) Artistic Supplement

The following lyrics are from an original song which was produced using the latest iteration of the VOCALOID application, VOCALOID5, as well as FL Studio: Premium Edition. The song is narrative-based and uses three VOCALOID voicebanks—CYBER DIVA II, CYBER SONGMAN II, and VY1—to fill four roles within the narrative: two narrators, which sing in duet, and two characters which largely sing solos. There are three versions of the song included on the supplementary CD to this paper: the song itself, the a cappella version, and the off vocal (instrumental) version.

Other programs used in the composition of the following song were Microsoft Word and MuseScore 3, both of which were used in drafting lyrics and melodies before production.

“My Heart Inside a Black Hole (私の心はブラックホールの中)”
(feat. CYBER DIVA II, CYBER SONGMAN II, and VY1)

Verse 1 | CYBER DIVA II (Narration, Main Vocals), CYBER SONGMAN II (Narration, Supporting Vocals)

Out in the dark, head in the stars,
dreaming of Mars,
a boy with awe-struck eyes sits watching the moon and stars.

And somewhere far, ten worlds apart,
so full of heart,
a girl with cosmic hands waves to him with shooting stars.

Hook 1 | CYBER DIVA II (Narration, Main Vocals), CYBER SONGMAN II (Narration, Supporting Vocals)

And when the planets turn, their eyes align.
The girl, she wants his love but shies (away).
But like the silent void consumes the light,
her voice is lost to space and time.

Bridge 1 | CYBER DIVA II (Character, Main Vocals; Narration, Supporting Vocals), VY1 (Character, Supporting Vocals), CYBER SONGMAN II (Narration, Supporting Vocals)

“How can I say
「私は君をあいしますよ。」[5]
From so far away?”

So she sends her heart
on a shooting star through space.
(Through space…)

And when it landed, this is what he had to say:

Chorus 1 | VY1 (Character, Main Vocals)

“この大切ことをなんですか
女の子の心ですか
いま、私の手のひらの

[5] This line translates to “I love you!”

中に
慎重に
この命を包みますよ。。。
でもできませんよ。”[6]

Verse 2 | CYBER SONGMAN II (Narration, Main Vocals), CYBER DIVA II (Narration, Supporting Vocals)

Out in the dark, head in the stars,
at home on Mars,
a boy with dumb-struck eyes sits holding a sun-bright star.

And somewhere far, ten worlds apart,
she sent her heart,
a girl with cosmic hands sent her love on a shooting star.

Hook 2 | CYBER SONGMAN II (Narration, Main Vocals), CYBER DIVA II (Narration, Supporting Vocals)

And when the planets turn, their eyes collide.
The boy, he sees her and shies (away).
And like the silent void consumes the light,
her heart's eclipsed in space and time.

Bridge 2 | CYBER DIVA II (Character, Main Vocals; Narration, Supporting Vocals), VY1 (Character, Supporting Vocals), CYBER SONGMAN II (Narration, Supporting Vocals)

"When will he say
「私も君をあいしますよ。」[7]
now that he knows I feel this way?"

So I (she) rode a comet
to ask him face to face.
(Face to face...)

And when I (she) landed, this is what he had to say:

Chorus 2 | VY1 (Character, Main Vocals)

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[6] This verse translates to "What is this precious thing? Is it her heart? Now, I'll wrap this life in my hands carefully... But I can't."
[7] This line translates to "I love you, too!"

"この大切ことをなんですか。
此れは貴方の心ですね。
だから、私の手のひら の
中に
慎重に
この命を持てないよ。。。"[8]

Hook 3 | CYBER DIVA II (Character, Main Vocals; Narration, Main Vocals), Cyber Songman II (Narration, Main Vocals)

And then the planets turn, the clock rewinds—
the love is lost, the lonely cry.
Just like a silent void consumes the light,
the memory's lost to space and time.

Chorus 3 | CYBER DIVA II (Character, Main Vocals)

So, in his hands, he held that precious thing, carefully:
my heart, my love, my everything.
I traveled far, he gave it back to me,
and then he left,
with no regrets
left in his soul—
my mind devoid, my body cold,
my heart caught in a black hole.

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[8] This line translates to "What is this precious thing? It's your heart, right? Well, then, I cannot hold carefully it in my hands..."

(Appendix) Vocaloid Selections

1. “World’s End Dancehall” by Wowaka (feat. Miku and Luka), Japanese [Link].
2. “A Tale of Six Trillion Years and a Night (六兆年と一夜物語)” by kemu (feat. IA), Japanese [Link]; see also the Suzuka Yuko (鈴華ゆう子) vocal cover version with Japanese musical instrument band [Link].
3. “Manic (マニック)” by *Luna (feat. Otomachi Una [音街ウナ] and Rana), Japanese [Link].
4. “Breathe” by Circus-P (feat. DEX), English [Link].
5. “PaIII.SENSATION” by Yunosuke (雄之助) (feat. Miku, GUMI, and Rin), Japanese [Link]; see also the rachie, Anthong the Gay, and Kuraiinu English vocal cover version [Link].
6. “Ghost Rule (ゴーストルール)” by DECO*27 (feat. Miku), Japanese [Link]; see also the Project DIVA gameplay video performance verison [Link] and the English vocal cover version by rachie [Link].
7. “The Disease Called Love (病名は愛だった)” by Neru and z’5, Japanese; see also the Mafumafu vocal cover version [Link].
8. “Nakakapagpabagabag (Troublesome)” by Dasu, Tagalog [Link].
9. “World is Mine (ワールドイズマイン)” by ryo (feat. Miku), Japanese [Link]; see also the Jubyphonic English vocal cover version [Link].
10. “glow” by keeno (キーノ) (feat. Miku), Japanese [Link]; see also the Lollia English vocal cover version [Link].
11. “ECHO” by Crusher-P (feat. GUMI), English [Link].; see also the Amalee vocal cover version [Link].
12. “O Light” by Kikuo (feat. Miku), Japanese [Link]; see also the Jayn English vocal cover version [Link].
13. “calc.” by JimmyThumb-P (OneRoom) (feat. Miku), Japanese [Link]; see also the Lollia English cover version, featuring a ballad arrangement by koma’n [Link].
14. “BRING IT ON (劣等上等)” by Giga (feat. Rin and Len). Japanese [Link]; see also the Magical Mirai 2018 (マジカルミライ 2018) live concert performance [Link], the and the Jubyphonic English vocal cover version [Link].

15. “The Disappearance of Hatsune Miku -DEAD END-” by cosMo@bousouP (feat. Miku), Japanese [Link]; see also the rachie English vocal cover version [Link]; see also the sequel song, “The Real Disappearance of Hatsune Miku (リアル初音ミクの消失)” (feat. GUMI) [Link].
16. “Pomp and Circumstance / Ifuudoudou (威風堂々)” by Umetora (梅とら) (feat. Miku, GUMI, Rin, Luka, and IA), Japanese [Link]; there are many different cover versions featuring other VOCALOIDs, MMD, and human dancers, but see also the Project DIVA gameplay video version [Link].
17. “Try to Say the P Names! (P 名言ってみろ!)” by MARETU (feat. Miku), Japanese [Link]; see also the popular response song “Let’s Say the P Names! (鏡音 P 名言ってみろ)” by Orebanana (おればなな) and Ouen Uta-P (にくきゅう改め応援歌P) (feat. Rin and Len) [Link].
18. “Lost One’s Weeping (ロストワンの号哭)” by Neru (feat. Rin), Japanese [Link]; see also the rachie Indonesian vocal cover version [Link].
19. “Monster” by KIRA (feat. GUMI), English [Link].
20. “SNOBBISM” by Neru and z’5 (feat. Rin and Len), Japanese [Link]; see also the Mafumafu vocal cover version [Link].
21. “Melt (メルト)” by ryo (feat. Hatsune Miku), Japanese; see also the rachie English vocal cover version of “Melt -10th Anniversary Mix-” by ryo (supercell) (feat. Yanagi Nagi [やなぎなぎ]) [Link].
22. “Rolling Girl” by Wowaka (feat. Miku), Japanese [Link].
23. “Patchwork Staccato (ツギハギスタッカート)” by TOA (feat. Hatsune Miku), Japanese [Link]; see also the Jubyphonic English vocal cover version [Link].
24. “NOVOCAINE” by Creep-P (Eyeris) and GHOST (feat. vflower), English; see also the Lollia vocal cover version [Link].
25. “‘Cause I’m a Liar” by Mcki Robyns-P (feat. Fukase [ふかせ]), English [Link].
26. “I’m glad you’re evil too (きみも悪い人でよかった)” by PinocchioP (ピノキオピ) (feat. Miku), Japanese [Link]; see also the rachie English vocal cover version [Link].
27. “I Was Human (人間だった)” by Picon (ピコン) (feat. Miku), Japanese [Link].
28. “‘Til the Day I Can See You Again (君とまた、会える日まで)” by kaoling (feat. GUMI and Kaai Yuki), Japanese [Link]; see also the mera-mera chorus battle version [Link].
29. “Patches” by nostraightanswer and Circus-P (feat. DEX and KAITO), English [Link]; see also the companion vocal version sang by the producers themselves [Link].
30. “Circles” by KIRA (feat. GUMI), English [Link].
31. “Sand Planet (砂の惑星)” by HACHI (feat. Miku), Japanese; see also the Jubyphonic English vocal cover version [Link).
32. “Exorcism” by Creep-P (feat. Cyber Diva), English; see also the SyDR0iD [Link] and Lollia [Link] vocal cover versions.

33. “Childish War (おこちゃま戦争)” by REOL (feat. Rin and Len), Japanese [Link]; see also the simultaneously uploaded Kradness and Reol vocal version [Link].
34. “Daughter of Evil (悪ノ娘)” by mothy_Akuno-P (mothy_悪ノ P) (feat. Rin), Japanese [Link]; see also the Jubyphonic English vocal cover version [Link] and the Kuraiinu English vocal cover version of “Servant of Evil (悪ノ召使)” (feat. Len and Rin), another work in Akuno-P’s Story of Evil (悪ノ物語) song series [Link].
35. “Dear Doppelganger (拝啓ドッペルゲンガー)” by KEMU VOXX (feat. GUMI), Japanese [Link]; see also the Kradness vocal cover version [Link].