Textual and Sonic Feedback Loops: Simultaneous conversations as a collaborative process in cmetq

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ABSTRACT

cmetq is an concert length work for baritone voice with live processing, fixed electronics and video projection. The text was created to highlight notions of etiquette associated with the emergence of the telephone in the 19th century and social media/mobile telephony in the 21st century. The text was collaboratively realized and began as a series of tweets between the authors that were collected and edited. This paper will articulate the motivation that influenced the formal design as well as the unique workflow for composing cmetq*. This collective development of a concert length work results in a synergy, exploiting the unique assets of the constituent collaborators.*

Tags: Composition Systems and Techniques, Collaborative Work

1. INTRODUCTION

cmetq is a concert length stage work for baritone voice with fixed electronics and live processing. The work collects statements around notions of communication etiquette as it relates to the 19th century telephone and 21st century cell phone and social media. The title of the work *cmetq* (pronounced c m e t q) is a compression of the words communication etiquette. This compression is a nod to the Hungarian Notation system and the title, collaborative methodology and dramatic scope of *HPSCHD* by John Cage and Lejaren Hiller. This compression reflects the intermingling of automated and intuitive processes that were used to create *cmetq*.

The work focuses on the language of etiquette surrounding communication technology. This paper documents the collaborative methods used to generate both the text and the musical composition. The text of *cmetq* was culled from a conversation between the authors, conducted over social media. The compositional and melodic material was created via an exchange between the performer and composer using sound recordings. We supplemented these exchanges with telephone, video conferencing, email, and in-person conversation. McLuhan reminds us "The medium is the message" [1] and *cmetq* emphasizes this influence of the medium on the message. The working process was designed to reveal the effects and artifacts of the medium. In compiling the final work these effects, such as brevity, the character of language and the quality of sonic material, define the complexion of *cmetq*. The creation of *cmetq* was dominated by two conversations and supplemented with several side channels of conversation. This paper will illustrate the two main conversations, the development of text and musical material, and the contributions of each process to the realization of *cmetq*.

We begin with a look at the conceptual framework for the *cmetq* project, discussing the relationship between our subject, communication etiquette, and the resulting composition. The following section investigates how the feedback loop of conversation serves as a model for the collaborative strategies. The conversation that generated the text occurred predominantly on social media, erupting in short bursts and moving across material in a nonconsecutive fluid manner. In contrast, the creation of each song follows a sequence from text to complete song, occurring as a series of recordings. Finally the composer reports about a compositional translation tool and how it evolved as a result of this particular work.

2. CONCEPTUAL FRAMEWORK

> Once the world is technologized, we can not go back. - *Nicholas Carr* [2]

cmetq is designed to motivate the listener to consider the unique position of technologies in our daily life. This is inspired by others who've asked similar questions, such as Youngblood [3] in *Expanded Cinema*.

> What happens to our definition of "family" when the intermedia network brings the behavior of the world into our home, and when we can be anywhere in the world in a few hours?

The relationship to technologies is manifest in the behaviors that arise socially. With the growth of population and the increasing range of inter-human communication options, the social aspect of the human experience expands. In the guise of etiquette, we collectively agree to a set of interpersonal rules. We vote on these rules through our actions, endorsing with adherence to convention and challenging by ignoring conventions of behavior. *Cmetq* is not a lexicon of the rules of etiquette, but rather a collection of observations that are drawn from considering the conversation around etiquette in both the present and historical realms. The authors are asking a question about the evolution, or lack thereof, in social conventions.

To generate text for the work we sent articles and comments to each other. From this conversation, we extracted particularly compelling lines that served as the text for songs. Presented as contiguous songs, these statements create a mosaic that invites the audience to discover connections, consider the unique social pressures of the era(s), and reflect on continuity of social trends across temporal divisions. In an era where social media provides a continuous flow of minutia, we endeavor to mimic the surface banality of a social media flood and position our chosen text as a unique filter. Where commercial products sift through data with an algorithm that is tethered to an advertising budget, the text of *cmetq* is adapted from the perspective of both message and sonic result. This approach leverages the caprice and artistic perspective of the collaborators and reflects the conversation occurring around these ideas.

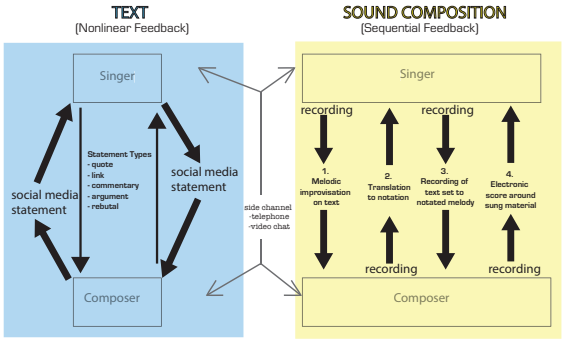

Figure 1. Parrallel Feedback Loops.

The creation of the work embodies how technical mediation is changing the essence of conversation. Our collaborative process embeds an embodiment of two different types of conversations in the design process of the work, the textual discussion that results in words for songs, and the sonic exchanges that results in the melodic and accompanying material (see Figure 1). Occurring simultaneously over fourteen months, these two approaches each leverage the characteristics of the medium in which they occur.

The first of these exchanges was the development of the text (see TEXT in Figure 1). Posting quotes, links, and commentary, the development of the text for *cmetq* occurred largely in a realm of social media. The textual restriction of twitter resulted in a conversation of short phrases. We refined the text in order to emphasize this brevity, shaping the text structures to represent the brevity and whimsy of internet memes or sound bites.

The second of these conversational feedback loops occurred as a sequential series of audio transmissions (see SOUND COMPOSITION in Figure 1), mirroring the sonic bias of telephony and the leisurely pace of letter writing. Developed through a series of recordings, the composition follows a linear pattern with the development of each song. The decelerated pace of this process invited time for consideration, reflection, and development of material, emphasizing craft in creating each iteration of the song.

Moving past the development phase to the presentation phase, *cmetq* is a stage work combining sonic and visual material. For this aspect of the work the composer generated some procedural drawing videos in the *Processing* language. These were in turn given to the visual artist Alejandro Casazi who, like the composer using the recording of vocal improvisations, utilized these videos as raw material for a visual narrative that frames and underscores the work (see Figure 3). The video's abstract imagery functions as a setting for the action onstage. To help intensify the distinction between the three characters, a unique color is utilized for each. To provide continuity with the score, the imagery is organized in a manner that reflects the texture and pacing of the electronic accompaniment.

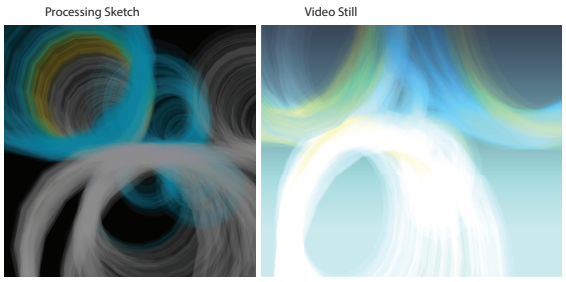

Figure 2. A still from the composer on the left and a still from the final video.

3. COLLABORATIVE METHODOLOGY

The collaborative methodology used to create both the text and the musical composition reflects how technology has altered the etiquette of communication. Here we discuss the specific steps involved in the development of the text and the composition. The various contributions of the composer and the performer are illustrated in Figure 3.

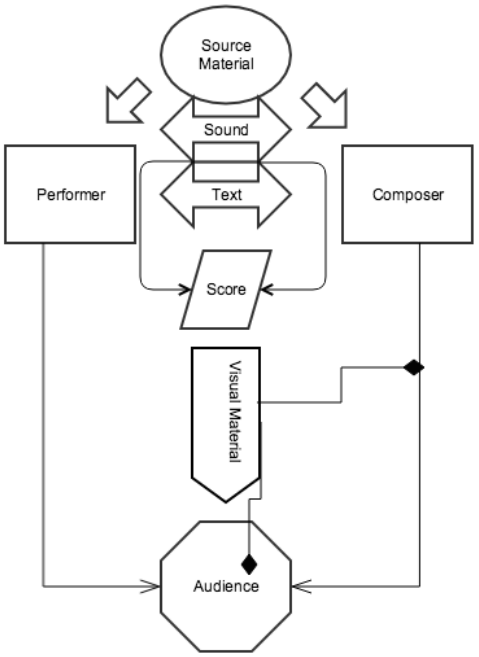

Figure 3. Flow from conception to presentation.

3.1 Generating text

The foundation for most vocal compositions are the texts that they are based upon. A significant hurdle to overcome

in this project was the text source. Rather than choosing an existing text to set to music, the collaborators decided to create text based on communication technology and etiquette by having a conversation on social media. The conceptual basis of the piece originated as a playful quip regarding cell phones. This evolved into a larger conversation around etiquette and the idea of mining text from a social media conversation. This format provides several advantages. First, the imposed brevity allows the flexibility of maintaining a conversation over a long temporal frame with the immediacy of constant updates. Secondly, it presents the opportunity to generate a text that reflects our tastes and sensibilities. Finally, it allows the authors to explore a creative or productive use for social media channels and to utilize the persistence of the cyber-footprint as a bibliographic trail.

The work proceeded as a conversation on twitter and tumblr where we would first share an article or other primary source and then tweet our reactions to the material. From this corpus of largely personal interaction we extracted the most salient and interesting material, defining the aesthetic of the text component with our taste. As Kenneth Goldsmith [4] puts it his introduction to *Against Expression*

> If you can filter through the mass of information and pass it on as an arbiter to others, you gain an enormous amount of cultural capital. Filtering is taste.

To further reinforce our aesthetic position this material was then edited and shaped throughout the translation process. There were several ways in which this process happened. In some cases, phrases that resonated with the authors were extracted and edited to be retold in our own unique voice. Other times reactions were distilled into a single phrase that summarizes an entire article or an aspect of it. The performer then selected portions of text from the social media forums, edited as necessary, and then improvised melodies on the text.

The final iterations reflect our ideas around etiquette and create space for the audience to both have opinions and interpretations. In the end, thirty-eight statements were chosen from the larger conversation. At this juncture, the authors considered the narrative framework of the text. In the end, we conceptualized a quasi-narrative where the statements would be spoken from two distinct points of view. Since the text juxtaposes both a contemporary and historical dialog we created two characters, both portrayed by a single performer. These juxtaposed characters represent the unique intersection of wall mounted telephones and cell phones that defines a very particular temporal moment. Exploring the similarities across epochs, these characters exhibit the similar reactions to different forms of technology that occur in their respective era. One character lives in the epoch where the first telephone was invented, and the second character lives amidst the advent of mobile communication and social media. The audience is located in a present that for the moment knows both worlds.

We began the process of dividing the statements by having a conversation about the meaning of each statement and assigning a subtext. The arrangement of the text suggests a flow from one mental state of being to another, reflecting the typical mental process of a human brain, moving from one idea/concept to another. This led to what became the final order of the text, an emotional journey that examines a wide gamut of emotions and reactions to etiquette and technology. In the end, we used only twenty-five of the thirty-eight statements.

Throughout this process, it became clear that we needed to devise a way to infuse the piece with our own commentary. In order to not distort the two-character structure we created a narrator component. The text for this narrator is a series of soliloquies. They not only provided context for the characters, but they also enabled us as the creators of the piece to comment directly in declarative statements. For example, a soliloquy in the third act stresses the role of creativity in how we use communication technology.

> In tracing the tales of communication that span one century the shift in what defines the topography of etiquette reveals that our potential is bound by the grasp of our aesthetic imagination.

3.2 Compositional Process

The composition of *cmetq* is rooted in a collaboration between composer and performer. The translations of voice via software and extensions via digital sound opens new opportunities, as Risset [5] notes

> digital sound should be used to expand the sonic world, as Varese longed to do, to take advantage of our perceptual features, to explore new territories, and to invoke powers of the inner self.

The compositional mechanism that enables this approach is a translation of recordings into notation, extending the composers previous work. [6] In *cmetq*, the motivation is similar to this earlier work but the actual translation process has been modified. The motivation for this translation technique is to utilize not only the sonic material of the performer involved but also the unique performance aspects that a performer brings to their instrument. In the case of the voice, the instrument is highly personal and the unique spectral profile and morphology of the performer is a rich point of departure. From the performer's perspective, the opportunity to provide musical material is uncommon and artistically stimulating.

3.2.1 Translation Technique

In previous iterations, the translation process located functionality of the procedure in different programs, such as analysis in one program and editing in another. In order to create a single melody, four to eight different realizations were edited into a single phrase by hand. Where previous projects had up to ten melodies, *cmetq* had thirty-eight textual phrases to be translated. To improve the efficiency of the process, a different approach is utilized. Instead of manually editing together multiple takes, real time controls were added and the composer rehearses and then performs the translation in a single take. By incorporating realtime performance, the system becomes more efficient. This change is implemented in two ways, rendering a score in real time and by dynamically controlling the lag time of the autocorrelation pitch estimation.

In this implementation we use an autocorrelation pitch follower implemented in *SuperColliders* `Pitch` *UGen*. As noted by Roads, autocorrelation is most efficient at mid and low frequencies. Thus it has been popular in speech recognition applications where the pitch range is limited. [7]. Working with vocal material of a relatively short length, autocorrelation was able to resolve the pitch content of the singer.

The first means of providing immediate feedback is the generation of a realtime score. To accomplish this the *bach library* [8] in *MaxMSP* environment is employed. Using *OpenSoundControl* the midi note value of the detected pitch is sent from *SuperCollider* to the *MaxMSP* environment where the `bach.transcribe` object is utilized to format the incoming information and present it via a `bach.roll`. This immediate presentation enables the composer to quickly judge the accuracy and usefulness of the translation and if need be, alter the parameters of `Pitch` *UGen*. To further judge the effectiveness, the transcription can be played back with a simple midi instrument while simultaneously playing the audio source. If the translation is judged suitable the bach library enables the quantization of the `bach.roll` into `bach.score` object. Having both the raw spacial notation and a quantized version side by side for both visual and auditory review means the optimal translation can be quickly determined with a few alterations of quantization settings. Once quantized the information is output as a `musicxml` file which is brought into *Finale* and the text is set.

The other control that was utilized in the rendering translations was the dynamic control of the rate at which the pitch analysis is performed in *SuperCollider*. The analysis routine utilizes a trigger for the rate at which pitches are reported. In previous versions of the translation process it was optimal to set the trigger to rapidly report notes. This not only renders all of the slight variations in pitch but also helps to show more precisely where a change in pitch occurs. The downside to this approach is that there is an excess of information that the composer must reduce. The addition of dynamic control means that through focused listening and several rehearsals, the composer can control the reporting rate to approximate the ideal rate per each section of the sound file.

3.2.2 Text Setting

Once these translations were completed, they were sent to the performer. The performer took the original text and reset it, making minor edits to melody, rhythm, and text as needed. In some cases, rhythms were adjusted for purpose of syllable stress and syllabification. In other cases, certain words in the phrase were extended to become melismatic, which supported the original integrity of the translation. These reworked melodies were recorded and sent to the composer.

The recorded melodies serve as a sonic point of departure for the composer in creating the final works. The melodies are set with a fixed electronic accompaniment. The goal of these settings is to create a series of unique songs that explore the ideas that the collaborators discussed with each text. Each melodic phrase was approached differently, often using excess material from the initial translations and aims to create songs which can stand on their own and work in the larger piece. The final compositional stage was the creation of connective sonic material between the successive songs. This material took the form of brief fixed electronic works.

4. CONCLUSIONS

The creation of *cmetq* was motivated by the authors' interest in etiquette and its relationship to technology. It is based to two simultaneous conversations. First, the discussion around the development of the text which explores etiquette and communication technology, while using various social media channels to maintain that conversation. Second is the development of the sonic material with the composer and performer communicating through recordings. Each of the conversations is supplemented with conversations via telephone and video chat. The formal design and workflow of *cmetq* were directly influenced by both conversations and results in a unique performance piece. It is through conversation, in multiple modalities that we discovered the optimal form of the piece and how to ideally articulate ideas in sound.

Acknowledgments

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