Statement of Relevance

'Typographic Play' forms part of an overall research plan exploring kinetic typography's potential to recreate the richness of oral communication with animated text-based communication systems. This proposed project involves preliminary research in which animated text models will be tested for their ability to communicate emotion. Research results will inform application of kinetic typography to live theatre. Actors' spoken words and gestures will be supplemented with animated text, thus extending meaning. In the final production, kinetic typography's potential to create its own "character" will be explored by creating a dialogue where actors interact with animated type. This new project follows current work animating recorded dialogue and previous creative research involving typographic animation of poetry (Aitken, 2005) as well as its application to captioning for the hearing impaired (Rashid, Aitken, Fels, 2006).

The project's artistic significance derives from bridging theatre and graphic design disciplines—a collaboration that may result in new ways of considering text in theatre. Combining animated text and live theatre is not entirely new. In Toronto, Theatre Gargantua (2005) mounted *e-DENTITY*, where actors responded physically to projected animated text. At MIT, Sparacino et al (2000), created ways of improving the interface between actors and various digital media, including typography. Yet no production has explicitly presented a character solely through the vehicle of animated type. This is a primary project goal. In collaboration with a prominent playwright/director, a narrative, dramatic dialogue will be explored. Both actors and typographic animators will be directed towards the shared goal of communicating emotional and subtextual meaning in dialogue. This collaboration of disciplines will generate a unique production combining typography and theatre in original ways.

It would seem impossible to present the full range of human emotion and personality in a medium devoid of voice and gesture. Yet a new and growing, body of literature suggests that by consciously manipulating type animation, it may be possible to infuse text with such meaning and emotion. Studies document a link between experienced emotion and kinetic typography (Stone, et al, 2004; Wong, 1996). Other work explores how well animated captioning communicates emotion to readers/viewers. For example, Rashid, Aitken, Fels (2006) constructed a framework that associates certain emotions with standard properties of animation. With 'Typographic Play', testing of preliminary animations for their ability to heighten emotional response in readers/viewers will inform the creation of the final production. The project's academic significance will add to this evolving body of research.

The project's social significance derives from its potential importance to deaf and hard-of-hearing communities. Personal interest stems from my progressive hearing loss and my increasing reliance on closed captioning in television and film. While captioning offers viewers access to dialogue and some sound effects, captioning has not kept pace with technological advances or societal needs (Fels, 2005; NCI, 2003). While somewhat successful in communicating dialogue content, it has proven less effective in communicating emotional and subtextual content communicated by tone of voice and sound. Viewers get only a partial experience of film and television content. The result contributes to a growing sense of cultural isolation already encountered by the deaf and hard-of-hearing when interacting with the hearing world. This project explores how emotive and subtextual content of spoken language might be communicated through text animation. Applied to captioning, results from the 'Typographic Play' project may prove significant in expanding captioning meaning/content for deaf and hard-of-hearing communities, as well as for an ageing demographic with progressive hearing loss.

Dissemination includes research results submitted to *International Conference on Computers, Helping People with Special Needs* and *International Conference for Computer -Human Interaction* (CHI), as well as articles to journals e.g. *American Annals of the Deaf*, and *International Journal of Human-Computer Interaction.* The final creative project will result in a dramatic performance incorporating actors, sound, and animated type to be mounted in a small theatre and also produced as a separate video for wider viewing. Papers documenting the unique collaboration between graphic design and theatre and its impact on the process of creating a play will be submitted to the *International Conference on the Arts in Society* and to *The International Journal of the Arts in Society* for publication.

Summary of Proposed Research/Creation

'Typographic Play', a research creative project, explores kinetic typography's potential to recreate oral communication's richness with animated text-based communication systems. The proposed project involves preliminary research in which animated text models will be tested for an ability to communicate emotion. Research results will inform application of kinetic typography to live theatre. Actors' spoken words and gestures will be supplemented with animated text, thus extending meaning. In the final production, kinetic typography's potential to create its own "character" will be explored by creating a dialogue where actors interact with animated type.

Creative questions that will be explored include: Can we recreate oral communication's richness with a text-based delivery system without an arbitrary system of learned symbols? What might happen to a reading/viewing experience if kinetic typography attempts to create a parallel experience to sound? Can kinetic typography visually replace oral speech's paralinguistic features such as prosody, voice tone, volume, etc? What is this new medium's creative potential within the context of live theatre? These questions are summarized by the hypothesis *kinetic typography can present sufficient emotional and paralinguistic content for a typographic actor to create a believable character interacting with traditional actors in a play.* To test the hypothesis, this project must apply existing research to creative outcomes as well as contribute its own results to the emerging field of kinetic typography.

The first project stage entails identifying semantic speech elements that affect meaning. This phase draws heavily on existing research. Identified elements will be correlated to typographic motions in a similar manner to robotics research that correlates emotion to sound. A simplified emotional framework will be created with specific text animation modes corresponding to a sample set of basic emotions. Animations will be presented to a group of viewers to evaluate them for emotional content according to an accepted mood rating scale (eg. Plutchik, 1980; Plutchik & Kelleman, 1989). Outcomes will inform the next project stage and give the creative work a scholarly context and validity. Results will be submitted to journals e.g. *International Conference on Computers, Helping People with Special Needs* (ICCHP), and *International Conference for Computer-Human Interaction* (CHI) and scholarly papers to journals e.g. *American Annals of the Deaf*, and *International Journal of Human-Computer Interaction.*

Results will be applied to the project's creative stage. A script will be created by Sheldon Rosen, an accomplished playwright and professor in Ryerson University's Theatre School, The play will include a theme of hearing loss and will communicate this through a dialogue between two or three actors. The script will express a wide range of emotions in order to best explore kinetic typography's potential to present emotion. Once complete, we will make creative decisions around the presentation of the play's characters. One character will be presented by a "typographic actor" and others by traditional actors.

Primary challenges (both artistic and technical) relate to the character's believability as portrayed by the typographic actor. The typographic animations must present a roughly parallel experience to spoken language. Emotional and subtextual meaning need to be presented with motion just as voice does with such prosodic features as length, loudness, and pitch. Creation of animations will draw heavily from existing research and our own study in order to infuse text with this paralinguistic content. Presentation of animations to the audience and traditional actors will also be considered. Finally, interaction between the typographic actor and traditional actors ought to appear fluid and transparent. Solutions include various technical devices and software currently being developed by other researchers.

The final typographic play will be mounted at the Abrams Studio Theatre, Ryerson University, open to the general public and an invited list of specific guests. To test the hypothesis, audiences will be asked to complete questionnaires relating to the success of kinetic typography in communicating emotion and creating a believable typographic actor. Results will inform future papers and conferences.

The process of creating the typographic play will be documented at each stage. Sketches, notes, videotaped interviews, etc will form the basis for scholarly papers documenting the unique collaboration between graphic design and theatre and its impact on the process of creating a play. A video recording of the final performance will be made for conference presentations.

Project Description

1.0 Introduction

Spoken language conveys meaning both in content (words) and voice (the manner in which words are spoken). In fact it has been estimated that up to 70% of meaning is communicated with such paralinguistic features as intonation, pitch, volume, etc. (Birdwhistell, 1970). Anger, fear, sadness; all are lost to the reader unless explicit in text. Sarcasm, particularly, is primarily communicated with tone of voice. Conventional text is not able to communicate this sub-textual meaning without resorting to narrative description. In situations where descriptive language is not possible due to temporal restraints, such as closed captioning for television, or live theatre, this meaning is lost. New research discussed below suggests that animated text may offer some possibilities in conveying this missing information

This animated text is referred to by various names (e.g., kinetic typography, moving text, type in motion). This proposal uses *kinetic typography* as the most descriptive and all encompassing term. Kinetic typography produces an often surprising effect of changing connotative meaning of words or phrases. This additional level of meaning has been used to manipulate the experience of reading to imbue words with a mood or emotion. It can therefore create a deeper experience in the reader/viewer than is possible with static text. (Stone, Alenquer, & Borisch, 2004; Wong, 1996).

Early applications of kinetic typography date from the first use of film credits. While some film pioneers made creative use of moving type in their work (notably Fishinger, 1933 and Leger, 1924) this was uncommon. In fact, film credits were often so tedious before the mid 1950s that projectionists delayed opening the curtains until after the credits had rolled. This started to change in 1955 with the release of *The Man with the Golden Arm*, by Otto Preminger. The film cans were delivered with a cautionary note: "Projectionists – pull curtain before titles" (Design Museum, n.d.). Preminger had contracted the creation of the animated credits to Saul Bass, a notable American graphic designer with the purpose of establishing a mood before the movie had begun. Dynamic film credits soon became the norm and Bass went on to create many fine opening credit sequences with Alfred Hitchcock, pioneering an art form that continues to this day.

From such early beginnings, kinetic typography was slow to be widely applied. In the mid 20th century it depended heavily on tedious animation techniques. Expensive and slow, it required large resources of time and money and was used only for big projects with corresponding budgets. From film, it gradually migrated to television. Advertisers, in particular, saw the power of moving type. Ever in need of new media to attract attention in an increasingly visually clogged environment, moving type was seen as a way to imbue a message with a stronger emotional impact.

Current research into the effect of kinetic typography on experienced emotion is relatively recent. In one study, Stone, Alenquer and Borisch (2004) presented viewers first with a series of static words, then identical, but animated words and tested emotions at appropriate points using an accepted mood rating scale (Plutchik, 1980; Plutchik & Kelleman, 1989). Results showed a clear, though small increase in emotional response to moving words. Stone et. al. (2004) also videotaped viewers' facial expressions. These presented more compelling evidence that viewers' responses were heightened (interest, laughter, etc.) yet there is no standard method of analyzing facial expressions, so results are more interesting from a descriptive point of view rather than having any real statistical significance.

One limitation of Stone's study was that emotional responses were gathered from subjects after emotions were experienced. To overcome this limitation, Wang, Prendinger, Igarashi, (2004) made use of a physiological real-time measurement using a galvanic skin response (GSR) sensor, which detects arousal using skin conductivity. Study results showed that users' emotional response was heightened when using kinetic type.

Research is also being conducted on the ability of animated text to convey a sense of "voice" to the written word. Published research is largely descriptive rather than offering empirical evidence; yet offer some important insights. Forlizzi, Lee and Hudson (2003) present a research overview into the relationship between voice, emotion and kinetic typography by examining paralinguistic and prosodic,

or linguistic, features. They found it difficult to portray paralinguistic features such as a "husky" vocal quality, and more success with conveying linguistic features such as pitch, loudness and tempo.

Applications of kinetic typography are varied. I am hard-of-hearing and interested in kinetic typography's potential to offer increased depth of meaning to captioning. To that end, I have been involved in a Ryerson University research project, where animation of television and video captions for the hearing impaired is tested to measure effect on viewer emotion. This work is recent and highly experimental; however preliminary work is being developed that associates basic emotions with standard animation properties to make their application consistent (Rashid, Aitken, Fels 2006). The project continued in summer 2006 with user testing to measure emotional response to animated captions versus conventional captions. Project results will be submitted to *CHI 2007* (Conference on Human Factors in Computing Systems) and/or *American Annals of the Deaf* or *International Journal of Human-Computer Interaction*.

Kinetic typography has also been successfully applied to the arts. Poets, particularly, have been early adopters of the medium. The power of moving type to convey emotion and meaning was intuitively recognized by visual and concrete poets and its adoption by them in the early 1990s was a natural progression. This new genre of poetry has come to be known as Electronic Poetry and a Google search for the term finds 190,000 hits (2006), attesting to its popularity. There are many significant poets contributing to this oeuvre. Some, such as Jim Andrews, use java applets in unusual ways. In *Yes, I'm a pop-up poem* Andrews (1996) cheekily proclaims the poem's origins, inviting the viewer to click and view the poem as a javascript pop-up menu. In another, *Seattle Drift* (1997), he uses Dynamic HTML to cause letters to cascade across the screen letters. Others, like William Poundstone or Bill Marsh use Flash to create short animations using letters and words, as well as shape and sound (Poundstone, n.d.). Brian Kim Stefans is known for *The Dreamlife of Letters*, a Flash animation where type moves sensually within a small window. My contribution to this genre includes animations of haiku written by a prominent Canadian poet, George Swede (Aitken, 2005). As poets have created increasingly complex electronic poetry, they have pushed the medium into quite sophisticated forms.

In considering the adaptation of kinetic typography to live performance, the line between performance art and avant-garde theatre is blurred. Both have contributed to this application of the medium, but arguably, have not pushed it as far as electronic poets. From the 1960s, new media has been combined with live actors/artists creating blended performances. Type played a role in some early instances of these works, but it was not common, nor did it play a strong role.

This began changing in the late 1980s: Dumb Type, the Japanese performance art collective, is a good example. Founded in 1984, the group incorporated video, music, websites, installation, dance and text into their performances (Neave, 2001; Rush, 2005). In *OR* (1997), text was simply used as a narrative device. Words are projected on a screen supplementing video content, almost as captions or subtitles. Another work, created as a solo project by the group's founder Teiji Furuhashi, *Lovers* (1994), uses text more abstractly by combining phrases projected on walls and stage floor with images of naked actors moving from wall to wall. Here text becomes a kind of "prop", creating visual elements on stage.

One might consider Ping Chong as an example of an early adopter of typography to theatre. In his work *Deshima* (1990), type is projected on a large screen in the background, creating a poetic context for the action on stage. Yet there is little interaction between actors and type. Type is seen as part of the mise en scène, adding meaning and content to the stage. In a contemporary work by the Canadian company Theatre Gargantua, entitled *e-DENTITY* (2005), type becomes much more integral to the performance. Here, type is animated and projected on scrims between audience and actors. This brings type into a plane in front of the actors, making it part of the performance. In some scenes, actors type on keyboards and the resulting text is projected. In another memorable scene, an actor speaks on one side of the stage, and words seem to materialize from his mouth, moving in a gentle arc across the stage where another actor catches and eats them. This level of interaction between type and actor is beginning to involve kinetic typography as an important element in a theatrical performance.

Interactivity between actors and text is being pursued by several artist/researchers. In performance art, one such example is *Text Rain* (1999), by Camille Utterback and Romy Achituv. Letters of a poem are projected onto and appear to "rain" down a screen. Audience members stand in front of a camera and are able to "catch" and play with the raining letters. The type is an integral component of the performance piece. At Concordia University, Jason Lewis has created interesting audience/typographic interactions. One, entitled *WordNozzle* (1998), involves an interesting interactive device where a fire hose has been hooked up to a computer. A person enters text, then "sprays" words onto a screen, controlling several variables (size, font, etc) as well. At MIT, researchers are considering more complex modes of interaction (Sparacino et al, 2000). One project *Improvisational TheatreSpace*, involves unique modes of actor/text interaction. Through gesture, vocal tone and simple phrases, actors directly manipulate a "typographic actor" (their term for this application of kinetic typography). The type responds to these various inputs and adjusts its motion accordingly. Viewers are able to modulate the appearance of text with head and mouth movements, or by singing. The project is significant to this proposal in at least two ways. In modeling software architecture which is sensor-driven and personality-based, the researchers have made a huge leap towards creating a more natural interaction between a media actor and a person. As well, they have identified kinetic typography as having the potential to behave as one kind of media actor.

Examples cited do not focus directly on typographic design. Lewis and Sparacino directed attention to exciting modes of interaction. Chong and Theatre Gargantua focused on a seamless way of integrating technology with live theatre. This leaves room for further research into kinetic typography and its capacity to communicate emotion within the context of a "typographic actor" in a live performance.

2.0 Research Creation Objectives and Questions

Research creation questions that this project will explore include the following. Can we recreate the richness of oral communication with a text-based delivery system without relying on a parallel system of arbitrary symbols? What might happen to a reading/viewing experience if kinetic typography attempts to create parallel experiences to sound? Could such motion imbue meaning into words in a similar way as tone of voice does to speech? Can kinetic typography visually replace paralinguistic features of oral speech such as prosody, tone of voice, volume, etc? What is the new medium's creative potential within live theatre's context? These questions are summarized with the hypothesis that *kinetic typography can present sufficient emotional and paralinguistic content for a typographic actor to create a believable character interacting with traditional actors in a play.*

The proposed project builds on previous creative research which explored similar questions. Animated typography was applied to both poetry (Aitken, 2005) and captioning for the hearing impaired (Rashid, Aitken, Fels, 2006). The first project involved two different streams. In one, haiku were animated in order to extend a poem's emotional "depth" and meaning. Resulting works offer a new dimension to haiku, essentially creating a "hybrid" where meaning was present both in literal content as well as in the text's motion. This work was presented at *The Third International Conference on New Directions in Humanities 2005* and published in *The International Journal of the Humanities*. The second ongoing stream involves developing custom software specifically for poets to create their own animated poetry. This work has been part of The *International Conference on the Arts in Society 2006* and has been submitted to the *International Journal of the Arts in Society.* The second project considers whether the animation of captioning for the hearing impaired might communicate some meaning and emotion present in voice. Results are preliminary, but encouraging and have been presented at the *10th International Conference on Computers Helping People with Special Needs 2006*.

As mentioned previously, existing research indicates that it is possible to communicate at least some paralinguistic features of speech using kinetic typography. Studies cited find support for the hypothesis that animated text conveys more emotion than static text. Current research (Rashid, Aitken, Fels 2006) links animation characteristics to specific emotions, creating a framework, or model, which could be used to apply the technique to captioning. Work will continue with user testing of the hypothesis that

animated captions may communicate more emotional content than conventional static captions. Further research is required to test a wider variety of animations and their effect on emotions.

I intend to continue this research. A preliminary exploration will be conducted to provide conceptual validation for the hypothesis that kinetic typography can recreate paralinguistic meaning and emotion communicated with oral speech. Using accepted psychological models of emotion (Plutchik, 1980, Ekman, 1999) readers will be tested for emotional response to a sample set of animated sentences against corresponding static text. Another set of animated sentences will be tested for other paralinguistic features, such as word-stress, pause, volume, or pitch (Cruttenden, 1997). Results from this preliminary research will inform the creation of the typographic play.

This typographic play will build on the work of Sparacino et al, by creating a performance that presents live actors interacting with typographic actors. Rather than focus on Sparacino's well considered ground of interaction design, the project will attempt to create a believable typographic actor acting a part in a play with live actors. Authenticity of this actor depends to a large degree on research—existing research linking kinetic typography to emotion and results from the project's own preliminary tests linking kinetic typography to emotion and other paralinguistic features.

3.0 Methodology

3.1 Stage One: Research

The first project stage entails identifying semantic elements of speech that affect meaning. This stage will draw heavily from existing research. The seminal text on intonation (Cruttenden, 1997), carefully examines paralinguistic elements of speech that affect meaning and identifies prosodic features of speech to include length, loudness, pitch, tempo and pause. The second project stage will apply this research to understand specifically *how* semantic elements of speech affect meaning and emotion. Increased pitch and a fast rhythm, for example, may be associated with anger (Juslin & Laukka, 2003); low pitch and a slower rhythm with sadness (Pierre-Yves, 2001). Here again, there is ample existing work to form the project's starting point. Interestingly, research in robotics may provide clues. In attempts to make robots capable of understanding and expressing basic emotions, Pierre-Yves has considered acoustic correlates to emotions. Breazeal (2001) has associated specific physical manifestations of emotions and their effect on speech. With anger, for example, "the sympathetic nervous system is aroused, the heart rate and blood pressure increase, the mouth becomes dry and there are occasional muscle tremors. Speech is then loud, fast and enunciated with strong high frequency energy" (Pierre-Yves, 2001, p 159).

If this information can be deconstructed and applied to robots as acoustic correlates in order to give them emotional "capabilities", it may be possible to create motion correlates and apply them to our project's "typographic actor" to create a believable character. To do this, we would summarize research findings and apply results to a simplified emotional framework. Included in this framework would be correlating motions for emotions. Anger for example, is associated with increased volume and a rise in pitch. The correlating motion may involve increased size (volume) and an upward motion (pitch). Current research into animated captioning by Rashid, Aitken, and Fels will also help inform this process.

A customized framework for this project will be applied to a simplified set of emotions. For each emotion, several alternative typographic animations will be created. These animations will be presented to a group of viewers who will evaluate them for emotional content according to an accepted mood rating scale (eg. Plutchik, 1980; Plutchik, & Kelleman, 1989). We anticipate that results will support the hypothesis that kinetic typography enhances the emotional and paralinguistic content of text. The results will inform the next project stage and provide the creative work with an important scholarly context and validity. Research results will be submitted to the *International Conference on Computers, Helping People with Special Needs* (ICCHP), and *International Conference for Computer -Human Interaction* (CHI). Scholarly papers will be submitted to journals such as *American Annals of the Deaf*, and *International Journal of Human-Computer Interaction.*

3.2 Stage Two: Creation

The project's creative stage involves scriptwriting, animating, directing and production. The script will be written by a project collaborator, Sheldon Rosen, an accomplished playwright and faculty member at Ryerson University. The theatrical production will include the theme of hearing loss communicated through a dialogue between a few actors. Initially, the typographic actor will consist of a normal voice track and accompanying static text captions. As the play progresses, the typographic actor's voice will become increasingly distorted, with a loss of different pitch frequencies, mirroring the sensation of hearing loss. As voice becomes distorted, typography becomes more and more expressive, moving from static captions to truly kinetic typography. Here, words and text become animated, trying to convey emotion that the voice is no longer able to carry. The script will express a wide range of emotions in order to best explore kinetic typography's potential to present these emotions.

Following the script's completion, we will make creative decisions around the presentation of the characters in the production. One character will be presented by a "typographic actor," the other character(s) presented traditionally. Challenges, both artistic and technical, of presenting both typographic and live actors together will be considered. Artistically, the challenge is twofold.

First, can we imbue kinetic typography with enough emotion and personality to create a believable character? I am currently engaged in preliminary explorations of this problem with Professor Rosen and three research assistants. We are typographically animating sample scripts provided by some of Rosen's undergraduate students and comparing their relative effectiveness with an audience. Samples consist of dual projections run by separate computers, one "typographic actor" per screen. The "actors" then speak with each other, creating a dialogue between monitors/screens. Our tests include comparisons with audio on and off, captions animated and unanimated as well as combining live actors with typographic actors. Results to date are promising, though much work remains to be done. Samples of this work are included with this proposal. Further, the project's proposed formal user testing of alternative typographic animations for key emotions will form a theoretical grounding for a large amount of this work. Additionally, we will draw from much of the literature previously mentioned.

Second, can we design lighting and set to facilitate natural interaction between an artificial medium and a person? Can typographic actors present their character both to audience and other actors without occluding audience sightlines or necessitating actors turning away from viewers? Theatre Gargantua faced similar problems with *e-DENTITY* (2005) and resolved them by presenting a scrim between audience and stage. The scrim was alternatively back lit and front lit, depending on the situation; it disappeared and appeared accordingly. Type and image were projected without blocking audience's vision of stage. Other possibilities include projection onto drapery, including screens within the set.

Technical challenges include all natural components of producing a live performance with the added one of interaction. How can live actors and typographic actors interact naturally? A scripted performance runs the risk of becoming out of sync as actors naturally speak at slightly different rates from performance to performance, while the typographic actor is necessarily prerecorded and unvarying. If the typography is cued manually, will there be a slight time lag from cue to motion? Any deviance from normal speech patterns will draw attention to the typographic construct's artificiality, reducing its believability as an actor. Sparacino's work on interactive theatre (1996) provides a guide here. In this work she presents various media actors interacting with performers by using a wireless real-time body tracker based on computer vision techniques. This technique offers huge advantages in creating a natural interaction by closely mimicking 'real life' interaction of observance and response. The Roger's Communication Centre at Ryerson University will provide valuable technical support for interaction design with the proposed project. Their existing expertise in various forms of interactivity will facilitate use of existing technical solutions that are beyond the project's research scope.

3.3 Stage Three: Production

The final typographic play will be rehearsed and mounted at the Abrams Studio Theatre at Ryerson University. The play will be open to the general public as well as to specific guests including the Ryerson community, the deaf and hard-of-hearing community, and theatre groups. To evaluate the performance's success and kinetic typography's effectiveness in creating a typographic actor, performances will be followed by videotaped question and answer periods and audiences will be asked to complete questionnaires. Questions might include: Was the typographic actor believable as a character? Was interaction between typography and live actors natural? Did the kinetic typography communicate emotion? Video recordings and questionnaire results will form a valuable resource in testing the project's hypothesis.

3.4 Stage Four: Dissemination and Future Work

Creative research from this project extends forward in two ways: further dissemination of project results and other performances. The process of creating the typographic play will be documented at each stage. Sketches, notes, videotaped interviews, etc will form the basis for future scholarly papers documenting the unique collaboration between graphic design and theatre and its impact on the process of creating a play. These articles will be submitted to the *International Conference on the Arts in Society* and to *The International Journal of the Arts in Society.* A video recording of the final performance will be made. This will form the basis for future conference presentations and workshops.

It is certainly expected that the process of creating a live performance incorporating typographic actors will inform future work. This work could pursue more streamlined and effective methods of human/text interaction; alternative modes of presenting kinetic typography on stage; or techniques in combining voice recognition software with interactive software to create live animations. Certainly it is hoped that it might challenge others to consider use of text in theatre in original ways.

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