Introduction

In a digital space, text is fluid and may be expressed through a spatially flexible and kinetic combination of written, visual and aural media. These texts may be represented in ways that move beyond words or letterforms. This challenges the nature of alphabetic representation and has the potential to lead toward new forms of communication. A (Dis) Connected Twenty-Six is an interface developed by this author to explore the extent to which an alternative, digital alphabet system may be used to ‘write images’ in a screen-based environment. The project is comprised of a media database, a text entry field and a screen space that serves as an empty stage. When a user enters written text of their choice on screen, letters are converted to images and sounds, and the screen becomes a playground for composing new personalised messages. Morse code is used as a conceptual and functional bridge between text entry and audio-visual media. Though the project contains audio, it is primarily focused on text as a mode of interaction, reconstructing written language in a way that is visually configured according to user input. The project is an inquiry on how these visual messages relate back to a user’s original text, and what might be learned through the process of composing and the resulting collage-like products. In this paper, the project is situated in historical and contemporary contexts, and then detailed in terms of its design. The study continues with analysis of collage compositions made by users and concludes with reflections on the project as a whole.
Disrupting Language

This project was motivated by a single speculation: if a letter is represented by a pictorial image, then a word might be a collage-like composition. A written text could digitally transform into an image-through a system of signs, using the logic of the alphabetic code. Letters of the alphabet are building blocks for writing, and represent ideas, sociocultural standards, and phonemes, the units of sound in a language. Our written history is permeated with pictographic writing systems; eventually, the alphabet – as it is known today – grew into visual representations of speech from a variety of origins, which included Semitic, Phoenician and Greek systems. As a visual and verbal interface, the alphabet “also served as a paradigm for the process of abstraction, for the written word is an abstraction of the spoken word which, in turn, is an abstraction from the holistic experience” (McLuhan and Logan 1977, p.377). The form and accessibility of writing has evolved through practical use and technology: scratched into clay, hand-txed on parchment, printed on paper with moveable, metal type and programmed as pixels on a screen. Letters arranged in the form of words, sentences and larger compositions rely on general agreement within a specific society in order to communicate.

The alphabet itself, however, is a modular interface and language may be against reading when its synthetic, hypergraphic and malleable possibilities are explored typographically (Hopman, 2012, n.p.). Pushing the idea of a text beyond organised, written graphemes alters its form and the reader’s understanding of it. Unity in a text inevitably occurs when formal and conceptual content come together; it is never fully controlled by its author, and a reader actively produces an interpretation rather than passively consumes it (Derrida, 1967; Barthes 1974). In this regard, a text is continually changing and interactive, and the work “can only signify upon the active perceptual and cognitive engagement on the part of the reader or viewer” (Kac, 1995, p.56). These assertions, while directed at literature, may be adapted to interactive and visual design work; in particular, a reader actively participates in the production of a text. By moving away from the author as a sole originator, the reader takes a more central role in the dialogue by pulling pieces of information together and crafting a response. Consequently, text is a product bound tightly to cycles of being written and read, made and experienced, sounded and heard.

An array of language-based sign systems, such as images, sounds, keywords and typographic characters, have the potential to cross with one another to create work that is, on a broader scale, an inquiry into the transformative nature of language itself. The groundwork for A (Dis)Connected Twenty-Six was guided by artistic collage practices that involve selection, disconnection and building. These activities have challenged a prevailing status quo and a reader is critically involved in the production of a text. By moving away from the author as a sole originator, the reader takes a more central role in the dialogue by pulling pieces of information together and crafting a response. Consequently, text is a product bound tightly to cycles of being written and read, made and experienced, sounded and heard.

Historically, collage is closely aligned with avant-garde art and poetry. Restrained perhaps only by the paper and ink media available of their time, Dada artist-poets actively cut language open and reassembled its sign systems to invite multiple reading and listening experiences. Many of these works may be read both optically and phonetically; though these experiments were creatively progressive, they were also very political. In practice, their artistic and activist works were uncompromising breaks with the established standards they observed in the dominant world order (Schaffner, 2006, p.126). Freely working against tradition, visual and verbal signs break apart and come together in cut-and-paste paper collage such as ABCD (Hausmann, 1923-24), a self-portrait that invites making meaning through a combination of type and image. The letterpress-printed poem In the Evening, Lying on Her Bed, She Reread the Letter from Her Artilleryman at the Front (Marinetti, 1919) is an expressive assemblage of what language looks and sounds like. Its arrangement suggests movement with emotional weight, and clusters of type appear to be cast as hypothetical stand-ins for pictorial information. Dada visual-textual works such as Un coup de dés jamais n’abolira le hasard (Mallarmé, 1914) and Calligrammes: Poems of Peace and War 1913–1916 (Apollinaire, 1916) visually explore the breaking and building of narrative within the finite space of the printed page. In these works, the visual compositions of poetic sounds turn the signified into the signifier; language is no longer what it had been in the past. The novel combinations of texts, and their spatial configurations on the printed page, have the potential to provide a listening or reading experience that is unexpected. In 1959, Brion Gysin moved these ideas further into literary practice with his cut-up technique, which was grounded in the view that words have power and are owned by everyone, and therefore the method itself was a way to oppose any given establishment (Geiger, 2005, pp.130-131). Cutting apart printed text and re-composing the pieces into new texts could intervene and upset a system of control. Beat writers, most notably William Burroughs, adopted Gysin’s cut-up technique and aligned its elements of random chance and discovery to the nature of everyday human experiences.

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The aforementioned examples make use of language as it exists within a shared, sociocultural commons, freely broken into parts that can be reassembled into new texts. Contemporary practices of mashup and remix, however, are also agents of change that parallel the goals of avant-garde poetry, but with the caveats of appropriation and digital technologies. The democratization of cut-and-paste software technology allows for anyone to actively consume and reconfigure media to produce their own ‘new’ messages. A remix is generally considered a reinterpretation of a single piece of media, while a mashup pulls at least two or more together. Mashups show ‘possibilities for new forms of cultural production that question standard commercial practice’ (Navas, 2010, p.157) and are critiques of themselves in that their making is often a challenge to intellectual property and copyright law (Sinnreich, 2010, pp.186-187). By cutting apart pre-existing material and recombining into new texts, these forms protest the convention of ‘one work, one author’ in favour of ‘multiple works, multiple authors, one (or more) producers’. This shift in attribution challenges the prevailing political and social fabric of ingredients available for creative work. An example is The Grey Album (Burton, 2004), which mashes together copyrighted content from the Beatles’ White Album with tracks made freely available by artist Jay-Z from his Black Album. Similarly, in The United State of Pop 2014 (Do What You Wanna Do) (Roseman, 2014), 25 individual pop songs are edited and layered into a cohesive, single track of multiple voices, styles and rhythms. Whether made by an author or reader (or both), these works are made up of individual parts that retain enough of their original identity to be recognised as such, yet are combined in ways that communicate as different, transformed texts.

In collage and related practices, media are re-worked into narratives that are read, heard or otherwise experienced, and expectations of syntax and logical cohesion may disappear. A reader’s conceptual connections may range from ordinary and facile to that which is startling or nonsensical. These interactive dialogues are between author and reader, and through this relationship, a text shifts and shapes. By displacing parts of a message, inclusive of its visual and verbal associations, a form inevitably becomes something different. The relationship of ideas to text may be understood as a complex form of translation (Neef, 2012, p.371), and this is a cycle, a series of echoing iterations and a linear process permeated with change. A translation process between two things might be assumed to be ‘if A translates to B, then B should translate back to A’. Meaning, however, is nearly always lost or gained in the exchange. Though not perfect, a more fitting description might be ‘if A translates to B, then B translates back to something that is like A, but somewhat different, and may include factors or contexts such as X, Y and Z’. A text being translated to image involves a potential loss of objective reading and in turn, the gain of subjective viewing. The outcome may be different when the process is reversed. Surrealist language translation games provide insight to how a text might playfully transform through dialogue. A spoken experiment, commonly known as the telephone game, begins when one person thinks of a sentence and whispers it into the ear of a second person. This person attempts to repeat the message to a third person, and so forth. The final person to receive the message ends the game by reading it aloud to the group. Similarly, in a written version of this game, a poem is circulated and translated to a different language by each participant. These experiments are considered successful if the end message bears little resemblance to the original; the cumulative effects of errors, and free associations in the message relay, are considered a favourable part of the game. In effect, the societal agreements of communication are modified when a text moves in an unexpected way between sender and receiver.

**Representing the Alphabet**

In A (Dis)Connected Twenty-Six, letters and words are recast as media for collage. To do this, they must begin as one thing and emerge as another through a transformative process. Letters and their established rules of representation needed to be redesigned. The alphabet was taken apart to expose its 26 individual units and these were connected to a collection of media: images, keywords, typographic characters and verbal sounds. In practice, written text entered into the interface would be recomposed with these media in lieu of letters, and with fluctuating spatial arrangement rather than fixed linear organization. Liberated from their original form, the 26 units of the alphabet would have new modular associations.

Historically, the alphabet is a written code that could be used and deciphered by a select few, typically those in positions of authority and influence. This significance of code, as a means to reveal and conceal meaning for those engaged with it, was brought into the interface as Morse...
code, which was appropriated as a functional bridge between letters and media. Morse code is a simple alphabetic proxy that has been used in situations where secrecy or rapid transmission is critical. The number of dashes and dots per letter is inversely proportional to its frequency in the English language. Like the alphabet, its letters can be seen, heard, read, written and spoken. Morse code’s graphic capacity, however, allows for designing a system of representation that diverges from a direct letter-to-code correlation. Within A (Di)Connected Twenty-Six, each individual Morse code dash and dot was assigned an image-sound-keyword-letterform combination for its given letter (Fig. 1). This extended the 26 letters of the alphabet to two hundred ninety-eight ingredients for the interface. For example, the letter G in Morse code is two dashes and one dot, which provided three possibilities for representing G on screen. This differs from a typeface, where one character typically represents one letter. The number of media in the database was intended to provide a rich user experience, in which there are multiple possibilities for letters and thus, greater variety for writing collage-like images.

Inventive and adaptive, the word ‘dialogue’ stems from the Greek dia, meaning to cross or move through, and logos, referring to word or speech. In A (Di)Connected Twenty-Six, dialogues as ‘crossings of words’ were considered as interactive ‘crossings of media’ between a user and the media contained within the prototype. This is based on letters and their correlating images and keywords, typographic characters and phonetic audio clips. Designed as a visual-language system with dialogic potential that is ‘conceptual and empirical, conscious and intuitive at the same time’ (van Toorn, 2006, p.62), the images range in subject matter from mundane to humorous to subversive. This required an ongoing awareness in the ways a user might recognize and respond, and how they might mix, shape and reconfigure the modular bits in relation to their original text entry. Since the goal of the project was to see what might be created, rather than direct a specific outcome, the collection of media was approached in the spirit of a Dada-like language game.

The images in A (Di)Connected Twenty-Six are thematically unrelated to one another, yet have cohesion in their visually rough, pixelated qualities. They are derived from photographs and line drawings found online. Keywords function as both nouns and verbs in everyday English; they informed image selection, and vice versa. A set of parameters was developed to guide the image-selection process. These, however, were merely guiding principles and in many cases the rules were interpreted liberally or completely broken:

- If the shape is a dot, then the image is a line drawing.
- If the shape is a dash, then the image is a bitmap.
- If the shape is a dash/dot, then the image is a bitmap.
- If the shape is a dash/dot and is in black, then the image is in colour.
- If the shape is a dash/dot and is in colour, then the image is in black.
- If the dash/dot is...
  - first, then the image shows a person, place, or thing.
  - second, then the image shows a person, place, or thing.
  - third, the image is in colour.
  - fourth, then the image is in black.

In some cases, there are clear, direct word-image associations while others possess a more ironic, or even political, correlation. These keywords begin with their associated Morse code letter, or, in some cases, begin with a silent or phonetic variation of that letter. For example, the word ‘kiss’ corresponds to a line drawing of two anime characters kissing; ‘craft’ is correlated with a genetic mapping of Dolly, the famously cloned sheep; and ‘break’ is paired with a cup and saucer, which could be interpreted as the potential breaking of ceramic material or a social coffee break (Fig. 2). A phone represents part of ‘F’ because ‘ph’ sounds like that letter as used in the English word ‘phone’.

Sound is included as a secondary element in the system, and reinforces synergy between visual, written and verbal signs. These audio clips were derived from digitised, modular renderings of human speech, using phonetic spellings in digital text-to-speech tools. The Morse code letter R, for example, has four dashes/dots that trigger audible ‘bee’, ‘bih’, ‘bah’ and ‘beh’ sounds recorded from various speech synthesizer voices. The sounds are intended to provide a range of audial information and do not necessarily correlate directly with images.

Typographic characters are from a typeface designed as part of the project and are the final stage of translation. This part of the system was intended to lead the cycle of translation back to alphabetic characters, which can be used to spell words. These letters of the alphabet show that they have undergone a change, and follow the earlier idea that ‘if A translates to B, then B translates back to something that is like A, but somewhat different’. Each character possesses the same total number of dashes/dots in Morse code, and these were liberally worked into letterforms with varying levels of legibility (Fig. 3). Dots are circles shown as positive or negative elements, and dashes are often extended or rotated.
The images, audio, keywords and typographic characters are comparable to a cast of theatrical characters, ready to be directed in a performance of the alphabet or an adaptation of the designer’s original script. This moves beyond the standard binary relationship between designer and user; the latter is not handed a finished product. Instead, A (Dis)Connected Twenty-Six is an ‘open’ interface that is concerned with method as much as product. It invites a user to discover connections between text and image, and compose letters and words into collage to direct their individual compositions. This relates to attitudes in contemporary DJ practices in which “the producer is only a transmitter for the following producer…the product serves to make new work” (Bourriaud, 2002, p.14, italics in original). An open work requires completion by another person through performance or reading (Eco, 1989), and similarly, open or participatory design has moved the role of the designer from a maker of finished products to that of participatory frameworks (Herst, 2011). Through these types of creative work, the designer engages the user in a dialogue that is interpretive as well as geared toward making a product. A (Dis)Connected Twenty-Six was coded in an object-oriented programming language, and its back-end development was divided into three distinct parts. The first part is text entry field, a space for a user to key in a word or words. Second, a custom API (application programming interface, a set of rules) was coded to convert letters to corresponding Morse code graphics, image PNG files, audio MP3 files and so forth, contained within a database. Third, the majority of the screen area was allocated as a page for writing text as image, which could also be seen metaphorically as a stage for performance.

With the simple direction to enter a word, a user initiates the program by typing text of choice on screen. By pressing the ‘return’ key or clicking the nearby icon, the program breaks the word into single letters, and displays each on screen as stylised Morse code graphics. The program recognizes only letters and disregards spaces and punctuation, then distributes Morse code into pre-determined x, y coordinate positions on screen. This breaks the order of letters within the written text and forces an alternative spatial arrangement; it also defies the Western practice of a left-to-right reading process. The Morse code graphics can be dragged and positioned anywhere on the stage. When rolled over with a mouse, the dashes and dots launch images, sounds and keywords from the database. Images layer visually according to the order of letters within the original word(s). For example, if the word entered is radio, the image for R will be in front, A is layered directly behind it, D behind A, and so forth. The visibility of keywords provides another continuous layer of text-image associations. Clicking on a button within each Morse code graphic forces final transition to typographic characters. These can also be moved around the stage. They correspond directly with letters from the original word; although their shape and form have been altered, they bring the entire experience back to letters of the alphabet.

**Connecting Text as Image**

During the development phase, the project went through user testing. Verbal responses were documented to gain insight as to how users perceived the interface and alphabet system. Below are selected examples of their feedback:

“"It has a lot to do with words and wordplay. One thing leads into another, there’s always that constant change. So you’re always seeking more information on it, on it…””

“"Playful and typing in current and relevant words in my life…using images and symbols to create words instead of actual letters. It’s like an alphabet, like a symbol alphabet based on an actual alphabet.””

“I understood it the way I wanted to interact with it, which is just being more playful and typing in current and relevant words in my life.”

“Could I get the sounds to say the word, if they’re lined up just right? It can say my word back to me?”

“You want to keep playing with it to make a new collage…not necessarily able to reflect on why it’s happening because it feels spontaneous…”

Upon completion, A (Dis)Connected Twenty-Six was launched at a public university event as a participatory design performance, using a laptop, LCD projector, large screen, audio-system and color inkjet printer (Fig. 4). This particular setting was used to collect project responses through visitor observation, conversation and gathering printed collages as material evidence. Visitors were invited to enter words, then make and print their resulting visual compositions. Many saw it as a creative playground, typing in various kinds of text to see which images and sounds would appear – and what they might come to mean in reference to their original entry. Groups gathered to watch compositions being written on a projection screen, and this turned the activity into a performance of public messages. A number of images were printed and hung on a display wall during the event (Fig. 5) and others were taken home as personal mementos. Each print bears the original text entry for comparison.

During the event, there was a tendency for people to give attribution to, or take ownership of, their image compositions. Some wanted this author to sign their printed works, indicating they felt the designer was responsible for what they made. In contrast, other participants claimed their artworks by signing their print before displaying it on the wall (Figs. 6 and 7). The assignment of authorship to the collages relates to issues of control, appropriation and legitimacy. A (Dis)Connected Twenty-Six is comprised of elements that are personally, as well as collectively, ‘owned’. The alphabet and writing are a kind of cultural commons, paralleled in the media contents of the project. All users have access to the same interface, images and so forth. The user appropriates them by typing a word, and forming creative work through personal decisions. It remains, then, that these works are stories that are shared between designer (framework, letters, images, sounds, keywords, typographic characters) and user (text of choice, collage compositions). But, like the rules for playing a surrealism game, A (Dis)Connected Twenty-Six provides a sense of creative freedoms that is both true and false. The method and products contain two oscillating layers of textuality. Awareness of the first (the designer’s mediated, ‘fictional’ writing system) is hushed as the second (the user’s tangible, ‘real’ visual composition) is amplified. On the other hand, it could be argued that the first is more authentic and the latter is merely a by-product. When these layers intersect, however, they become more difficult to delineate from one another.
Figure 3. Typeface created for the project, based on the number of dashes and dots in Morse code letters.

Figure 4. Visitor composing a collage through the interface at a public event.

Figure 5. Collages made by users and pinned to a display wall during a public event.

Figure 6. Collage composed and signed by a user from text entry ‘fiscal space’.

Figure 7. Collage composed and signed by a user from text entry ‘hello again’.
Figure 8. Collage composed by a user from text entry ‘lazy fox’.

Figure 9. Collage composed by a user from text entry ‘alive’.

Figure 10. Three collages composed by a user from single text entry ‘colored parrot’.

Figure 11. Collage composed by a user from text entry ‘imaginary friend’.

Figure 12. Collage composed by a user from text entry ‘deus ex machina’.
Nonetheless, from the moment a user enters their word(s) on screen, the experience becomes their own. The final compositions differ from one another like fingerprints, in that each is personal and unique to a user (Figs. 8 and 9). From the letters in their original text entry, to their decisions on moving or displaying media on screen, there is a sense of that person’s identity – their expressions, attitudes and sensibilities – coming to light as images form into a momento. Frequently, a user entered another person’s name on screen, and the resulting print became a gift. Words were also purposefully misspelled or made up. Interacting with the prototype carries similarities to the writing process and personal voice shown through selection, syntax and phrasing with the media. In the series made with text ‘colored parrot’, a composition was printed at various stages of making (Fig. 10). These prints show the transformation of a written text as it becomes an image, then returns to a purely typographic form. Given the user decisions for spatial arrangement and image selection, making a composition is an indeterminate creative activity; there are a number of possibilities for the text to be an image. It is also determinate, however, in that all letters eventually ‘end’ in a written form similar to the way they began.

If the opposite of ownership is sharing, A (Dis)Connected Twenty-Six takes on a metaphoric style of collaborative disruption: messy, raw and unpredictable. Singular images, with their pixelated edges and seemingly arbitrary positions on screen, are combined in ways that resemble cut and paste collages. Blending and visual cohesion are at a minimum, and the compositions defy established sensibilities of beauty and order. As in cut-up practices, or a Dadaist game, the user is also discovering unexpected material and figuring out how to use the interface at the same time. Reflecting on his visual sign systems, Marcel Duchamp wrote that “this alphabet very probably is only suitable for the description of this picture” (Sanouillet and Peterson, 1989, p. 32). In this regard, descriptions of these collages are primarily referential to the alphabet system and text entry from which they were developed. Consequently, the collages made through the prototype cannot be judged as ‘good’ or ‘bad’, nor are they illustrations that make use of text entries as captions. Rather, the relationship between the text entry and final composition is poetic and open to imaginative storytelling. Reading them requires viewer discovery and subjectivity. The collage of the text ‘imaginary friend’ (Fig. 11) contains three images, Morse code graphics and a few typographic characters. There is a repeating image of a person holding a camera aimed at something we cannot see, and in the lower left appears a silhouette of two children playing a game. Layered between these is an image of a Victrola record player. The Morse code graphics and type are placed as if dancing, or representing sound. The camera is aimed at the viewer, or that which is imaginary, while the two children are showing a closeness that might be friendship. Maybe it is a story of a memory and an adult is carrying a camera to capture a childhood friendship that has faded away. Or, perhaps from a child’s point of view, only they can see their playmate and the camera is an antagonist representing the evident capture of reality. The text ‘deus ex machina’ (Fig. 12) is expressed with multiple images and Morse code graphics, but no typographic characters. Literally ‘god from the machine’, the user’s text is a literary device that would move a story forward in an unexpected way. The images in the collage represent a conflux of everyday life: traffic, an electric spark, shoes, a bar of music, children playing, a phrenological human head drawing and an asymmetrical circular chart of information. It may read as a chaotic arrangement, though movement is implied through formal composition and the subject matter. For example, the circular chart leads a viewer through possibilities of travel, musical performance and thought processes. Some parts of the collage are so layered and mashed together that they cannot be recognised.

**Conclusion**

The project brings together activities of writing, reading, listening, composing and personalising. When used as a creative tool, a user becomes aware of their language as something beyond a combination of letters with familiar meaning. Users can discover and invent ‘new’ text-image associations within the constraints of this interface. The poetic transformation of text to image provides further insight to language as a tightly bound social and personal construct. Words have power and language is unfixed; the sociocultural structures in which these things exist are represented here by design, through freedom and control. Within A (Dis)Connected Twenty-Six, these activities parallel those that typify collage practices: selection and assembly. By splitting these between the roles of designer (aggregating the media) and user (configuring the media), the conceptual ‘glue’ holding the collages together becomes more significant. This grey, fuzzy zone of multiple authors and semantic overlap disrupts expectations: parts can no longer be separated into ‘yours’ and ‘mine’, yet the collages are not necessarily collaborative either. In effect, this is the point at which novel products and ideas come to be in a way that defies societal standards of attribution. The politics of copyright in collage-like products, whether visual, audial or textual, are beyond the immediate scope of this paper, but present opportunity for additional study. The interface’s structure allows for the entire project to be reiterated, and the various media housed within the database can be replaced or altered. There are compelling possibilities in re-populating the database with media specific to social, political or environmental subject matter. For example, images associated with human rights or sustainability could be used to generate dialogic collages leading toward critical discussions and participatory making, which may have pedagogical value as well. The investigation reveals potential in how the modularity of language affects the ways text as image may be written and read – and how this alternative way of making, and thinking, could affect both self-expression and mass communication.

A (Dis)Connected Twenty-Six can be accessed at: [http://disconnected26.jessicabarness.com](http://disconnected26.jessicabarness.com)

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