Northumbria Research Link

A Typographic Dilemma: Reconciling the old with the new using a new cross-disciplinary typographic framework

AUTHOR

JOYCE S R YEE

JOYCE.YEE@NORTHUMBRIA.AC.UK

CENTRE FOR DESIGN RESEARCH

SCHOOL OF DESIGN

NORTHUMBRIA UNIVERSITY

NEWCASTLE, UNITED KINGDOM

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Abstract

Current theory and vocabulary used to describe typographic practice and scholarship are based on a historically print-derived framework. As yet, no new paradigm has emerged to address the divergent path that screen-based typography is taking from its traditional print medium. Screen-based typography is becoming as common and widely used as its print counterpart. It is now timely to re-evaluate current typographic references and practices under these environments, which introduces a new visual language and form.

This paper will attempt to present an alternate typographic framework to address these growing changes by appropriating concepts and knowledge from different disciplines. This alternate typographic framework has been informed through a study conducted as part of a research Doctorate in the School of Design at Northumbria University, UK. This paper posits that the current typographic framework derived from the print medium is no longer sufficient to address the growing differences between the print and screen media. In its place, an alternate cross-disciplinary typographic framework should be adopted for the successful integration and application of typography in screen-based interactive media. The development of this framework will focus mainly on three key characteristics of screen-based interactive media – hypertext, interactivity and time-based motion – and will draw influences from disciplines such as film, computer gaming, interactive digital arts and hypertext fictions.

Biography

Joyce is a practising designer and researcher in New Media design. She has worked on a number of design consultancy and research projects for the last two and a half years at the Centre for Design Research, Northumbria University in the United Kingdom. Prior to this, she has worked as a graphic designer and Typography lecturer for four years in Malaysia. She completed her MA in Visual Communication at London's Central Saint Martins School of Art and Design. Her final thesis was about repositioning the role of letterforms in the face of technological change. Joyce is currently pursuing a part-time PhD degree at Northumbria University, on developing a practice-led framework for the application of typography in screen-based interactive media. She recently presented a paper on the subject of Literature Mapping as part of her PhD investigation, at the fifth European Academy of Design (EAD) conference in Barcelona.

1. What is the Dilemma?

This paper describes the theoretical background and review conducted as part of a PhD research study currently undertaken by the author. The primary aim of this research enquiry is to investigate the relevance of current typographic knowledge for screen-based medium and to devise an alternate framework to address the critical issues arising from the application of typography in this medium. This paper will focus on the theoretical review carried out so far and a description of the proposed new conceptual framework.

The designer and typographer Stanley Morrison in 1928 defined typography as having a 'specific purpose; of so arranging letters, distributing the space and controlling the type as to aid to the maximum the readers' comprehension of the text' (1928: p4). While this principle still holds true for screen-based type, its application is compromised through technical constraints of current type display technology. The problem of legibility is as relevant for print as it is for screen, however the strategy and approach in application is very different between the two. Print's answer is for absolute control, while screen's solution is for flexibility and compromise. This example illustrates one of the many current difficulties faced by designers practising in a discipline (new media) which has only begun to develop its own critical theory and language. Many current examples of 'good practices' for print are in direct conflict with what can be considered to be 'good practices' for screen. Similarly, our ideas about the print medium are also in direct contrast to our ideas about the screen-based medium. Text on print is fixed, authoritative and tactile. Text on screen is transient, multi-voice and virtual. A strategy is needed to resolve this conflict between applying old knowledge into a new medium.

1.1 Old knowledge + new media = dilemma

Whenever a new and significant visual technology is introduced to society, there is bound to be a process of 'remediation' (Bolter and Gruisin, 1999) where all new media borrows and appropriates from previous media in order to make sense of it. Bolter and Gruisin argue that new technology does not really imitate reality but rather another medium. In fact, they state that 'this is all new technology could do, i.e. define itself in relationship with earlier technologies of representation' (2001: p28). Photography strove to provide a more realistic representation of reality compared to paintings. In turn, digital images strove to achieve photo-realism, as real as actual photographs. Film was influenced and compared initially to the theatre experience. It started to develop its own visual language by first appropriating the techniques from the tradition of theatre (for example, filming from a fixed distance, to mimic the view of a theatre viewer) to the development of montage and editing techniques developed specifically for the film media.

Media theorist Steven Holtzman (1997) takes a different view from Bolter and Gruisin, by suggesting that repurposing is a transitional step which paves the way for the development of

new roles and techniques. In his view, 'repurposing is a transitional step that allows us to get a secure footing on unfamiliar terrain' (p15). Unlike Bolter and Gruisin who argue that the process of remediation continues throughout the development of the media, Holtzman sees the repurposing phase ending when new media is able to exploit its own unique qualities.

Generally, the balance between appropriation and creation will shift as new media matures. The shift in balance is a gradual and evolutionary step. The development of screen-based media is no different. However, unlike visual culture where imagery has been commonly applied across many different media (such as painting, photography and film), typography as a textual form has (up till 15 years ago) always been represented in a print-based environment. Even now, the written culture is still considered synonymous with the medium of print. This attachment and reliance on print medium and its technology, is what I believe to be the major stumbling block to the understanding and application of typography in a screen-based interactive medium.

1.2 What is wrong with the current framework?

Our current framework is entirely dependent upon a print-derived framework and is inadequate to cope with the radical changes that have been bought about by the digital medium. There is no denying that the nature of type professionals was very much linked to the technological advances of the printing industry. The first four hundred years were controlled by compositors using handset metal type and then layout artists with the introduction of machine-set type like Linotype and Monotype. Designing typefaces and composing type were handled by punch-cutters and compositors respectively. However, technological advances – such as the automatic punch-cutting machine and machine-set text, spurred a shift to typeface and layout design delivered by a specialised group of professionals who we now call the modern typographers.

This reliance on print technology and medium extends to the development of knowledge surrounding the discipline. Existing terminology still reflects typography's print origin. Terms used to describe the anatomy of a typeface (x-height, counter, baseline, descender, ascender), type composition (kerning, leading, tracking) and the measurement units (em, en, pica, points) have been derived from printing and punch cutting activity. Not only do we still use print-derived terms, we tend to think, write and read using a print model (Chartier, 1995). The transition from print to screen involves much more than taking our print model and adapting it for the screen. It requires a complete review of how we approach, view and apply typography.

2. Proposals to reconcile the differences

2.1 A new conceptual framework

The development of this framework can be broken down to two main stages or in this case, two fundamental questions. Firstly, how relevant is current print-derived knowledge for screen-based media? If so, what are they? Secondly, what characteristics of screen-based media will have a significant effect and influence towards a new approach to screen-based typography? The next two sections will attempt to provide some answers to these questions.

2.2 How relevant is current print-derived knowledge for screen-based media?

Based on a questionnaire sent out to design practitioners and educators, it was clear that many of the fundamental principles, knowledge, traditions and skills are still considered to be essential and relevant for the screen-based medium. Unsurprisingly, the issues of legibility and readability still remain one of the most fundamental factors for designers when learning and applying type in any medium. The role of type remains the main tool of communication, despite the rise of other visual and aural media employed to communicate a message. There was a general acknowledgement and awareness that screen-based media brings with it its own nature, characteristics, freedom and constraints. Keeping this in mind, it is crucial for the framework to integrate new knowledge (appropriated from other disciplines) with fundamental principles of type. The challenge of this approach is to balance the emphasis between core knowledge with medium specific knowledge.

2.3 Influences of external disciplines

Historically, the craft of typography was a closely guarded affair. Both Kinross (1992) and Jury (2003) have commented on how printers and later typographers practiced their 'black art' in secret. It was as Jury said, 'an activity founded on impiricalism and, to the outsider, shrouded in secrecy' (Jury, 2003: p6). While typographers were focused on practising and perfecting their art to an accepted standard, it was left to artist, poets and other non-typographers to experiment with the subject. Examples of early typographic experimentation came from poets such as Guillaume Apollinaire (1880-1918) and Stephan Mallarme (1842-98), artists such as Filippo Tommaso Marinetti (1876-1944) and composers such as John Cage (1912-1992). Much early typographic experimentations were influenced by artistic and literary movements of the 20th century: Futurism, Constructivism, Dadaism and Modernism. Hence, typography is no stranger to the influences of external disciplines. According to Teal Triggs, experimental typography developed in the 1990s 'borrowed heavily from Postmodernist theory, developing many characteristics from varied approaches: fragmentation, hybridity, parody, pastiche, wit and play' (2003: p15).

In the past few years, there have been a growing number of designers and typographers advocating a more cross-disciplinary approach towards the subject of typography in light of

new media developments. David Jury insightfully pointed out that 'the study of typography cannot (and more and more is not) confined to any one special branch of learning' (Jury, 2002: p152). While the work of designer / typographer / performance artist, Elliot Peter Earls have challenged the traditional purpose and aesthetic of type by using it with other kinds of media such as music, performance art, digital video and spoken word poetry in his work[1]. New concepts brought about with the introduction of New Media concepts such as 'digitality, interactivity, hypertext, dispersal, virtuality and cyberspace' (Lister et al, 2003: p13) now require the discipline of typography to question its own principles and embrace new ideas from external disciplines.

2.4 Synthesising the old with the new

Identifying these strategies must first begin with a critical examination of diverse and growing realm of issues in new media. This is not an easy task, as the discipline is itself still developing its own critical discourse and historical genealogy. However, key texts have begun to emerge in the field of new media critical discourse from authors such as Lev Manovich (2001), Martin Lister (2003), Noah Wardruip-Fruin and Nick Montfort (2003). In their introduction to their book, *A Critical Introduction to New Media*, Martin Lister and his co-authors acknowledge that the 'field is so complex that it cannot be addressed other than by combining, or synthesising, knowledges' from 'visual culture, media and cultural history, media theory, media production, philosophy, the history of sciences, political economy and sociology' (2003: p1). Unsurprisingly, the discipline of new media has become a large and complex field of study. It would be unrealistic in this paper to try to represent and capture all the changes brought about with the introduction of new media. Instead, my first task is to understand how these changes have impacted on the discipline of typography and how it challenges our current understanding and application of typography in new media. Similarly, rather than focussing specifically on issues that have arisen from the discussion about the technological impact on typography, I sought to draw theories, concepts and strategies specifically from external but relevant disciplines such as film, media, communication and literary studies to shed light on the application of typography in interactive screen-based media.

Pursuing new knowledge in other discipline does not imply that existing knowledge will be discarded. Fundamental knowledge and principles are the backbone to the proposed framework. It gives the framework a historical and theoretical foundation on which new medium specific knowledge is built upon. To use an analogy, before the process of restoring a five hundred year-old house could begin, the architect must first decide how much of the

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[1] His latest project is a film on DVD-ROM entitled Catfish, released by Émigré Fonts. The film is described as a fusion of Earls's ventures into varied disciplines including graphic design, music, poetry, criticism, performance art, writing, type design and more.

existing house is still suitable for current housing and environmental needs. Revisiting and challenging existing principles is the first step towards building this new framework.

3. Beginnings of a framework

The framework presented in this paper is still in its formative stage. The final definitive version will be presented as a conceptual framework aimed at:

1. Developing a set of modules for the delivery of the subject of typography within a new media design curriculum.
2. Developing strategies for design educators to integrate typographic principles with new media attributes.
3. Forming recommendations to guide the development of a parallel, practice-based framework.

3.1 Core principles

One of the framework's main attributes is the separation between non-medium dependent principles with medium specific knowledge. This relationship is illustrated in the diagram below.
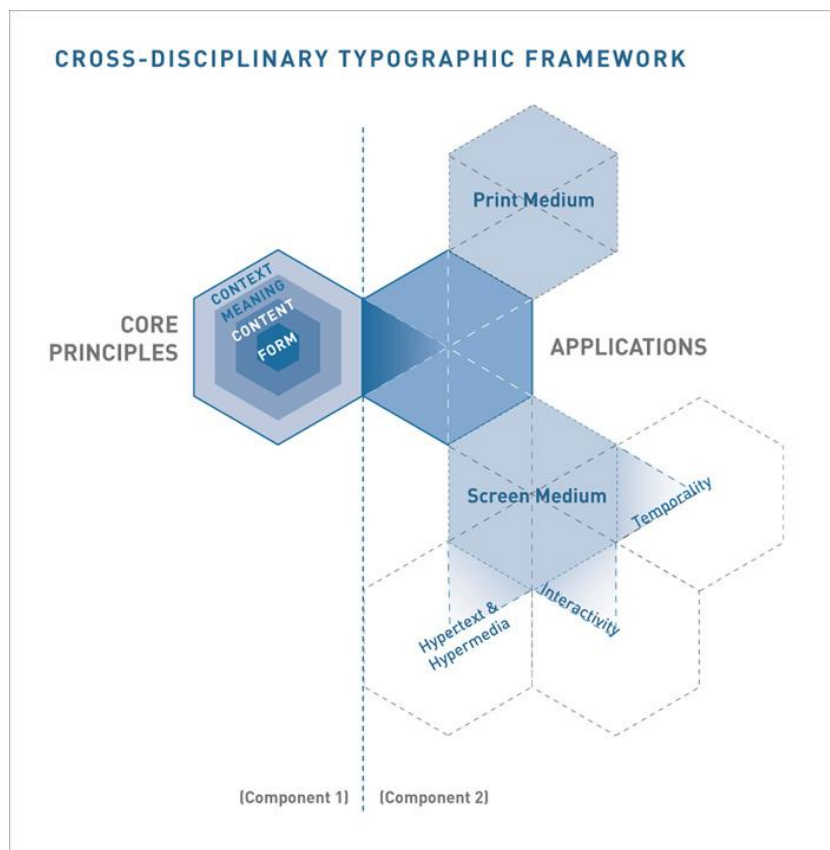

Figure 1.

Cross-disciplinary typographic framework model

The component consists of a set of core-principles (including theories, terms and applications), which are global in their applicability. The second component consists of a set of medium-specific principles developed for new media. The strategy employed in this study, to determine how existing print-derived principles are identified, investigated and selected, is based upon four different sets of discussions and applications of typography. In this way, each part highlights different sets of critical issues and roles typography plays in relation to the delivery of a message. These four parts are:

Typographic Form
This classification refers to the kind of typographic usage which explores the usage of the letterform as a physical and abstract form, independent on its semantic meaning.

Typographic Content
This classification refers to the kind of typographic usage which explores the physical and metaphorical construction of letterforms and typographic layout with the transmitting medium.

Typographic Meaning
This classification refers to the kind of typographic usage which explores the way meaning is communicated and understood through the examination of the semantic relationship between type and language.

Typographic Context
This classification refers to the kind of typographic usage which explores the shifting relationship between text, audience and medium.

In each section, general themes, historical precedents and current issues are listed and questioned on the level of 'medium dependency'. This term is used to indicate, if an issue is significantly influenced, caused or as a result of a specific medium, it will be excluded from Component One in the framework and instead moved to Component Two.

3.2 A strategy of questioning
The strategy used in this study, to investigate the relevance of existing principles, is based on a simple, systematic posing of critical questions. These key questions generally fall within three themes. Listed below are tentative examples of some possible questions in each theme. I have chosen to concentrate on the term 'practice' as I believe that the discipline of typography emerged from the actual 'doing' process of setting and laying out type in a specific medium. Terminology and principles arising from this discipline are a result of an accumulation and reflection of practical knowledge in the engagement of practice.

1. Historical context

- Where did this practice originate?
- How was this practice used originally?
- Has that changed from current usage? If so, what are the factors involved that has brought about this change?
- Did this practice originate from a printing technique?
- Is there any equivalent practice in other media today?
- Is there any equivalent practice in other disciplines?

2. Application & Design

- In which area is this practice most commonly used?
- Has that changed due to technological, social or political factors? If so, how has this practice changed?
- What are the issues associated with this practice?
- Which media is this practice most associated with? Why is this so?
- Are the terms commonly used in this practice medium specific?

3. Technology

- Has the shape and form of this practice been changed due to the changes in technology?
- Has technology played a part in the creation and development of this practice?
- Is so, which part and how?

4. Introduction of cross-disciplinary themes

This study has identified three new media characteristics which will have an increasing influence in the application of screen-based typography. They are discussed in more detail in the sections below.

4.1 Hypertext and hypermedia

4.1.1 A Model of the mind

The vision of associative links was first elaborated by Vannevar Bush in his article "As we may think" first published in the Atlantic Monthly, July 1945. He was the Director in the Office of Scientific Research and Development (US) during World War Two. He was motivated by the problem of information overload and its subsequent retrieval. As a result, he envisioned the Memex, a machine where data could be stored and retrieved by association rather than by alphabetical or numerical system of indexes. Bush was first to advocate the idea that associative linkage is a more natural model of information management as it closely resembles the way our own mind works (Lister et al, 2003), (Wardrip-Fruin and Montfort, 2003). This idea of associative links has greatly influenced the development of the now familiar terms and concepts which are Hypertext and Hypermedia.

The term Hypertext was actually coined by a computer scientist, Theodor Nelson in the 1960s, and he refers to it as, '…non-sequential writing – text that branches and allows choices to the reader, best read at an interactive screen' (quoted in Landow, 1992: p4). Landow proceeds to explain that the term Hypermedia extends the notion of links within text to visual information, sound, animation and other media elements. According to Lister et al (2003), the history of Hypertext is tied to a dual history of literary and representational theory and the computer development industry. This parallel development has influenced the way hypertext is used and is thought of. The idea of multiplicity and non-linearity of text has been in existence prior to the invention of the digital media. These 'ergodic' literature as Aspen Aarseth describes it (1997), were often marginal works in the history of literature which according to Lister et al (2003) sought to challenge the linearity of text. These diverse works range from literature classics such as the I Ching, stories by Jorge Louis Borges (1964), Italo Calvino (1981), George Perec (1987), poems by Guiliamme Appolinaire, William Burroughs (1978), Raymond Queneau (1961) to popular children's fiction such as the *Choose Your Own Adventure* series. Academics have long been using the idea of externally linked text as footnotes to provide a second or a third thread of narrative in their arguments.

The second strand of theories and usage of hypertext comes from the theories of text proposed by Barthes, Foucault and Derrida. These theories are used to understand hypertext through the ideas of fragmentation, non-linearity and reader author relationship (Lister et al, 2003). This second characteristic of hypertext has moved beyond Bush and Nelson's notion of hypertext as merely being an aid to information retrieval through associative links. There is

a triangular relationship between the reader, text and author in textual documents. For print documents, the balance of power lies very much with the author. While in hypertext documents, the balance of power has shifted to the reader, in that he/she has the additional opportunity to change or challenge the flow of narrative set out by the author. This does not imply that the reader is powerless to question or even physically change the way he/she reads a printed text, however it will require a much more conscious intervention by the reader.

4.1.2 Hypertext & typography

Designers of a printed document tended to think of narrative in terms of physical structure, page after page, top to bottom. With hypertext, the physical placement of a text is replaced by multiple entries and exits as a series of points in a virtual space. Instead of a single arrival and exit point, the designer is faced with deciding how to synthesise the semantical and aesthetical relationship between different units of text in separate locations.

Re-presenting an existing text in a hypertext environment might even revert the text back into a form closer to its original, conversational and multi-strand quality. Bolter (2001) cites the example of texts by Aristotle, which were put together by Aristotle himself or by other ancient editors. In a printed version, all these texts would be put together in a linear, chronological manner. However, if constructed in a hypertext environment, the text could be arranged according to various thematic and chronological orders that might better fit the way the text was constructed.

4.2 Interactivity

4.2.1 A definition

Interactivity has become a term which has becomes increasingly used to describe new media and as such needs to be defined in clearer terms if it is to be of any use. According to Lister et al (2003), ideas and definitions of interactivity operate at two levels: one ideological and the other instrumental. At the ideological level, interactivity is one of the main differences between 'old' media, which offers passive consumption. This idea treats the users as consumers and uses this concept as a key selling point of new media, where it is seen to give more personal choices and experiences to consumers.

I am however, more concerned with the second level, where interactivity is used and seen as a functional element of new media. Many authors have tried to define this concept and I have chosen to use the one closest to how I view the concept of interactivity. Lister et all defined it as:

> 'Being interactive signifies the users' (the individual members of the new media 'audience') ability to directly intervene in and change the images and text that they access' (2003: p20).

Interactivity in this sense allows users to participate in the viewing and reading of the media in order to produce meaning. It becomes a physically and mentally bi-directional communication conduit. Within this functional definition, there are three levels of interactivity.

4.2.2 First level of interactivity

At this level, the physical structure and hierarchy of the content remains unchanged. However, physical and cognitive interaction occurs when a user decides about the content and sequence of how it is viewed. Lev Manovich describes this as 'closed interactivity' (2001: p53). A common example of this kind of interactivity is hypertextual navigation (Lister et al, 2003), where a user selects from a fixed collection of information, text, images, and sound to construct an individualized page or sequence of pages through the navigation process.

4.2.3 Second level of interactivity

At this level, the hierarchy of the content changes and adapts to the user's behaviour and selections. Manovich describes this as 'open interactivity' which refers to situations where the user plays an active role in determining the order in which the generated elements are accessed, and the system has the capability to modify or generate new objects or responses for the user. This level of interactivity can also be described as an immersive experience when encountered in 3D spaces like 'Tomb Raider' or 'Doom'. The user and system respond continuously to each other's actions in a continuous feedback loop. In a more traditional hypertextual environment, web sites like Amazon remembers a user's

past purchases and viewings in order to create a more personalised merchandise selection for the user.

4.2.4 Third level of interactivity

This third level of interactivity is found in an open and live system where there is continuous engagement between a producer, a user and the message. There are two kinds of system described here, one is a system that will respond in an understandable manner towards the user; by changing the way it operates and executes commands. One common example of this kind of interaction is found in the field of artificial intelligence. The other is a system which facilitates direct communication between one to one or one to multiple users, for example in web logs, Multi-User Domains (MUD), and multi-user chat environments.
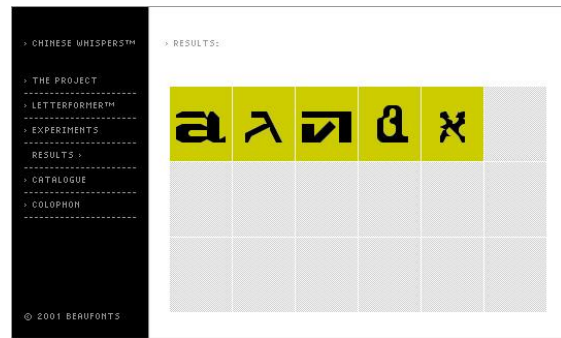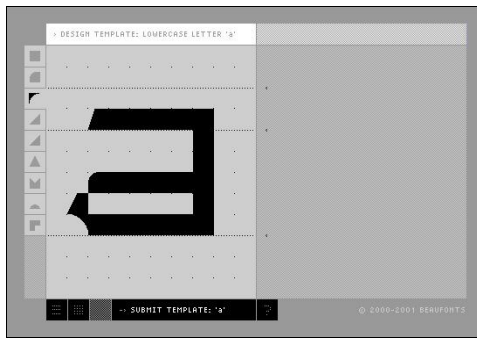
4.2.5 Interactivity and typography

Current examples of work combining different levels of interactivity with typographic elements can be divided into several groups. The first group deals with what Shedroff (1994) describes as 'intervention and control'. For example, in the *Visual Thesaurus* (www.visualthesaurus.com) web site (refer to figure 2 and 3), the user is given many different ways in which to control the types of information shown. He/she can select to view different linguistic relationships between words for example, synonyms and antonyms. The second and most common group deals with the core idea of 'productivity and creativity' (ibid). Projects which fall into these groups provide the opportunity for users to create, build and alter content in their sites. Some typographic examples (illustrated in figures 4-7) include the *Beaufont's Chinese Whisper* (www.beaufonts.com/pssst/) and the *Alphabet Synthesis Machine* (www.alphabet.tmema.org/) projects.
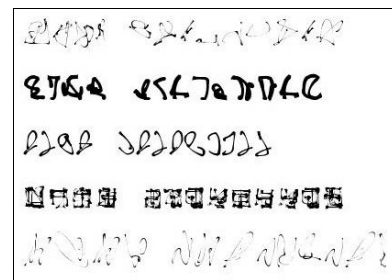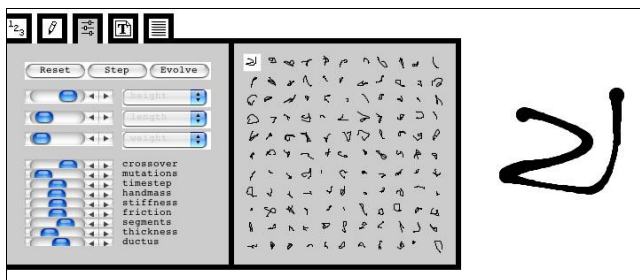

Figures 2 & 3.
Screen shots of the Visual Thesaurus application

Figures 4 & 5.

Screen shots of Beaufont's Chinese Whisper project. Five original lowercase 'a's were created by a set of international designers using the Letterformer^{TM} software. These were then posted on the website where other people could use them as a basis to create the next letters in the alphabet.

Figures 6 & 7.

Screen shots of the Alphabet Synthesis Machine. Figure 6 illustrates the variety of parameters which a user can change in order to evolve the alphabet. Figure 7 shows some of the archived alphabets generated by this machine.

The examples given in the previous paragraph illustrate the more functional aspect of incorporating interactivity with elements of typography. However, designers must not ignore an important theoretical understanding of interactivity, in which authorship is being transferred from the traditional producer to the reader/user. This transference of authorial power has questioned the definition of text, and in this case, interactive text. The traditional reading and creation of meaning from a text makes assumptions about its stability but also the fluidity of its interpretation. However, within an interactive environment, the stability of text has also become fluid. Designers must be wary of the level of control and feedback given to users in order to deliver a coherent textual experience. At the same time, designers must also accept that the level of typographical control is no longer possible and learn to design for multiple user experiences that remain close to the original intent of the message.

4.3 Temporality

4.3.1 A definition

The term 'temporality' is defined as the passage of time represented in a virtual space. In relation to new media, it describes the passing of time or a representation of live events viewed from a static screen (Manovich, 2001). In this section, I will discuss two areas in which temporality is commonly found.

4.3.2 Narrative delivery

Temporality is used as a technique to deliver a story (or construct one through the playing of a game) through different narrative structures to an audience or player. It is most commonly found in television, film, animation and role-playing games such as Doom or Tomb Raider. In non-interactive media such as television, film and animation, the delivery of a narrative is the final objective of the producer. However in role-playing games, the delivery of a narrative is used as a strategy to facilitate what Janet H. Murray (1997) calls the 'active creation of belief'. In this way, the player continuously contributes to the narrative as he/she plays the game.

4.3.3 Communication facilitator

Temporality as a condition that facilitates the communication with one to one or one to many users. It can be found in online instant messaging engines, MUDs (Multi-User Domains) environments, online chat engines and SMS (Short Messaging System). These exchanges are synchronous, ephemeral and interactive. This kind of communication is more akin to face-to-face conversation than formal non-digital written communication.

4.3.4 Temporality and typography

The act of writing on cave walls, clay tablet, parchments and books are our attempts to capture time and to preserve our stories in a permanent state. Prior to writing, attempts to deliver stories and information to others have been orally based. Poets and writers narrated their stories from memory and it would be passed on from generation to generation using oral means. The inevitable decline of these stories meant that another form of communication was needed to preserve the knowledge gained in previous generations. When the switch from oral to the written occurred, the way in which we deliver and process textual information also changed.

The written word achieved a status of authority and fixity. Readers expect text to be static and delivered in a linear fashion (although authors like Joyce and Borges have challenged this). Temporality in printed material was largely controlled by the reader. The author and designer are limited to what they can achieve structurally and semantically to control the pace of delivery. In contrast, early time-based media such as television, film and animation, the pace and narrative delivery depends largely on the producer. However, with the introduction of the

interactive digital environment, the viewer becomes much more active in the viewing and creation of meaning. Users are free to intervene and contribute to the narrative during the delivery of a narrative in role-playing games or in interactive television such as Liquid Stage, which was built as a prototype to explore the possibility of enhanced television (Meadows, 2003).

The delivery of text in a purely time-based environment was first used by pioneers of motion filmmaker such as George Melies and D.W Griffith in the early 1900s. It consisted of two-dimensional cards handwritten with dialogues, announcements, news and credits (Bellantoni and Woolman, 1999). By the 1950s and 60s, the use of animating letterforms in title credits were used extensively by pioneering designers such as Saul Bass and Pablo Ferro.

The experience of time-based is ephemeral, kinetic, three-dimensional and transient. In this environment it is crucial for designers to create a strong visual impression and transmit emotional attachment to the message. Letterforms are now expected to perform both verbal and visual function, employing techniques normally found in film and animation media.
In an *interactive* time-based environment the development of these features are enhanced and distorted at the same time. This is because the additional factor of user intervention on the path of the message from the producer to the viewer is moved 'beyond the representation of reality into the seamless manipulation of reality' (Bellantoni and Woolman, 1999: p9). For example in both the *Intersection* (www.thesystemis.com/intersection) and *Nomad Typeface* (www.typophile.com/cgibin/show.pl?29/381.html) projects, the user has the choice of leaving the display running as an animation or to intervene in order select different combinations of letters to be displayed.
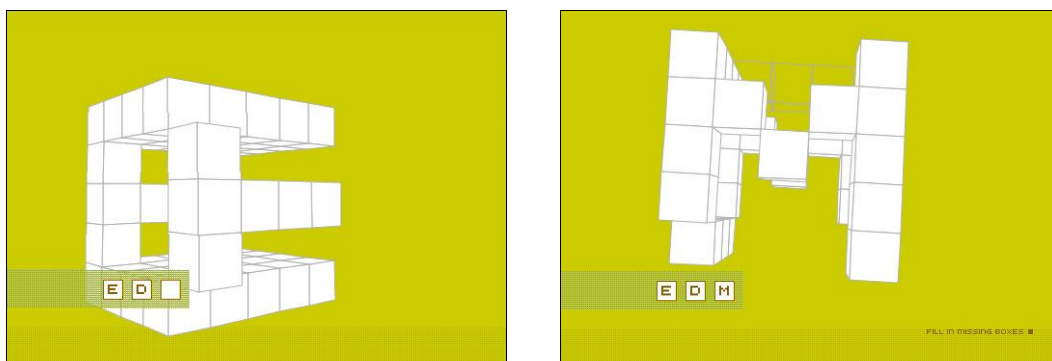

Figure 8 & 9.
Screen shots of the Intersection application. This project is an exploration of how letterforms intersect when projected along the x, y and z-axis in a three-dimensional space. If the user chooses not to intervene, the object will continue to animate in a random manner. In Figure 8, the letters 'E' and 'D' are projected along the x and y-axis. While in Figure 9, the letter 'M' has been added to project on the z-axis.
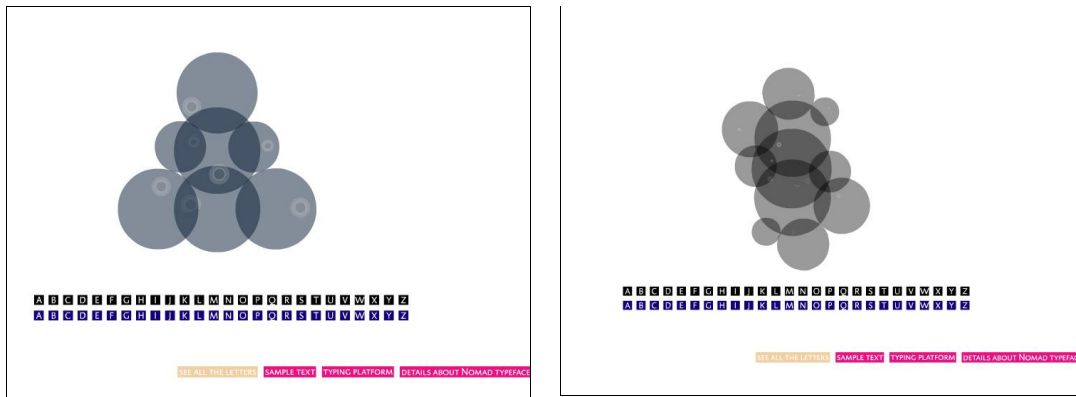
Figure 10 & 11.

Screen shots of the Nomad Typeface. Each character in the Nomad Typeface is animated and has its own individual movements. The character shapes are derived from multiple overlapping cells. Figures 10 and 11 show the letters 'A' and 'S'.

5.0 Discussion and conclusion

This framework is still very much a work in progress. The result of this theoretical review (described in this paper) sets the context for the next stage of action research educational projects. A pilot study was carried out using an educational model of this framework with second year multimedia design students at Northumbria University. These students were asked to design a series of book covers and to create complementary interactive type promotional pieces. The study was underpinned by a combination of knowledge and project-based learning, rather than a purely project-based learning. Students' responded positively to this approach and rated an increase in their overall typographic knowledge and awareness at the end of the project. Key areas where students struggled were the translation of concepts across print and screen, and the application of basic typographic principles. The first problem might indicate that the students are more focus on the aesthetic and technical characteristics of the medium rather than the communication aspects of it. While the second problem might indicate that the students are lacking understanding in formal typographic knowledge. Further refinement of the framework will be tested through two more student projects, with graphic and multimedia design students respectively.

The new conceptual framework draws upon, in equal amount, between relevant current principles and new knowledge obtained from external disciplines. Research conducted so far indicates that this new knowledge should be derived from issues and ideas developed out of new media, specifically the themes of associative linking, interactivity and temporality. This paper advocates for a balance between the need to repurpose existing media with the need to create new languages of expression. At the same time, it presents a strategy in which to question existing typographic principles from four different perspectives: form, content, meaning and context. This framework is offered here for critical reflection and as a basis for a debate on its applicability in the wider context of practice-based environment.

References

Aarseth E. (1997). <u>Cybertext: Perspectives on Ergodic Literature</u>. Baltimore, Md. ; London, Johns Hopkins University Press.

Alphabet Synthesis Machine, <u>URL: http://alphabet.tmema.org/</u>. [accessed 12 June 2004].

Beaufonts, 'Chinese Whispers', <u>URL: http://www.beaufonts.com/psst.</u> [accessed 12th June 2004]

Bellantoni, J. and M. Woolman (1999). <u>Type in Motion: Innovations in Digital Graphics</u>. London, Thames and Hudson.

Bolter, J. D. (2001). <u>Writing Space: Computers, Hypertext and the Remediation of Print (2nd ed)</u>. Mahwah, New Jersey, Lawrence Erlbaum Associates.

Bolter, J. D. and R. Grusin (1999). <u>Remediation: Understanding New Media</u>. Cambridge, Massacusetts, MIT Press.

Borges, J. L. (1964). <u>Labyrinths : selected stories and other writings</u>. Harmondsworth, Penguin, 1980.

Burroughs, W. (1978) 'The Cut-up Method of Brion Gysin.' <u>The Third Mind</u>, New York, Viking. 29-33.

Bush, V. (1945). As We May Think. <u>Atlantic Monthly</u>. **176 (1):** 101-108.

Calvino, I. (1981). <u>If On a Winter's Night a Traveller</u>. London, Secker & Warburg.

Chartier, R. (1995). <u>Forms and Meanings</u>. Pennsylvania, US, University of Pennsylvania Press.

Holtzman S. (1997). <u>Digital Mosaics: The Aesthetics of Cyberspace</u>. New York, Simon & Schuster.

Intersection, <u>URL: http://www.thesystemis.com/intersection</u>. [accessed 12 June 2004].

Jury, D. (2003). <u>About Face: Reviving the Rules of Typography</u>. Switzerland, Roto Vision.

Kinross, R. (1992). <u>Modern Typography: An Essay in Critical History</u>. London, Hypen Press.

Landow, G. P. (1992). <u>Hypertext: The Convergence of Contemporary Critical Theory and Technology</u>. Baltimore, US, The John Hopkins University Press.

Lister, M., J.Dovey, S. Giddings, I. Grant and K. Kelly (2003). <u>New Media: A Critical Introduction</u>. London, Routledge.

Manovich, L. (2001). <u>The Language of New Media</u>. Masssachussets, MIT Press.

Meadows, M. S. (2003). <u>Pause & Effect: The Art of Interactive Narrative</u>. Indianapolis, Indiana, New Riders.

Morrison, S. (1928). <u>First Principles of Typography</u>. Leiden, Academic Press.

Murray, J. H. (1997). <u>Hamlet on the Holodeck: The Future of Narrative in Cyberspace</u>. New York, NY, The Free Press.

Perec, G. (1987). <u>Life a users manual : fictions</u>. London, Collins Harvill, 1987

Queneau, R. (1961). 'One Hundred Thousand Million Poems'. H. Mathews and A. Brotchie (Ed.) <u>Oulipo Compendium</u>, Trans. Stanley Chapman. London, Atlas Press, 1988, 15-33.

Shedroff, N. (1994) 'Recipe for a successful website'. URL: http://<u>www.nathan.com/thoughts/</u> <u>recipe/content.html</u>. [accessed 12 June 2004].

Triggs, T. (2003). <u>The Typographic Experiment: Radical Innovation in Contemporary Type</u>. London, Thames & Hudson.

Typophile Forums, 'Nomad Typeface', URL: http://<u>www.typophile.com/forums/messages/</u> <u>29/nomad_typeface.swf</u>. [accessed 12 June 2004].

Visual Thesaurus, <u>URL: http://www.visualthesaurus.com</u>. [accessed 12 June 2004].

Wardrip-Fruin, N. and N. Montfort (2003). <u>The New Media Reader</u>. Cambridge, Mass.; London, MIT.