Effective methods for incorporating typographic design principles in responsive web design

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THESIS

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DECLARATION

I hereby certify that the material submitted in this thesis towards award of the Masters in Professional Design Practice is entirely my own work and has not been submitted for any academic assessment other than part-fulfillment of the award named above.

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ABSTRACT

This research is concerned with identifying the most effective methods for incorporating typographic design principles in responsive web design. These methods surrounded the importance of considering online reading, and the different types of online reading, taking considerations such as legibility and readability into account. Responsive web design is design which provides an optimal viewing experience across a wide range of devices such as mobile devices and a range of screen sizes. This study discusses the use of CSS, HTML and JavaScript to enable responsive web design as well as incorporating text hierarchy and traditional typographic details. This is achieved through a combination of research from literature and a series of semi-structured interviews with Irish web designers who have either have personally won awards in their field or who are working in award-winning agencies.

Firstly the study determines what practices are currently in use internationally and what are the main problem areas which arise in typographic web design. This is established through a literature review which studies the principal elements which must be considered when incorporating type into any design and how these elements are affected when implemented into a web design. The issue of typography in responsive web design is also analysed and the solutions available to prevent issues occurring are reviewed.

Primary research is then conducted in the form of interviews to evaluate the response of Irish web designers to these issues and explore the practicality of the solutions available to designers in Irish web design agencies when incorporating typographic design.

The most salient points from the research are collected in the conclusion to form general guidelines for implementing typographic design in responsive web design projects and recommendations are then provided that outline the most appropriate methods for overcoming issues which arise when implementing typographic principles to ensure the most consistent results in responsive web design.

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TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND

We need to look at screen based typography as a new language, with its own grammar, its own syntax, and its own rules. What we need are new and better models, models that go beyond language or typography per se, and that reinforce rather than restrict our understanding of what it is to design with electronic media.

Jessica Helfand, 2001, p. 107

This statement, made by Jessica Helfand in her 2001 book 'Screen', suggests their should be another set of design principles for online typographic design which are distinct from typographic design for print. As stated by Clark, Studholme, Murphy and Manian (2012, p. 397) over the years, online typography was a much neglected field. Advances in typography were used mainly for the print industry and the most common way to render a font that was not available on a user's machine was to serve it as a graphic which created large website files and prolonged download times, thus forcing a designer to choose between aesthetics and functionality. From 1996 until 2008 typefaces where chosen by the browser rather than the designer and were limited to the Internet's Core Fonts developed by Microsoft. Thanks to new technologies, such as CSS3 the use of typography online has developed rapidly over the years, changing from styles controlled by web browsers to designed images and then to the designed typography that can be read by search engines.

According to Franz (2012, p. 2), people read online in only three different ways: scanning with purpose, casual reading or sustained reading. Casual reading is skimming over a text, reading sentences here and there (the first sentence of each paragraph, the caption, the pull quote) to get a general idea and flavour of the text. Scanning with purpose is scanning down or across a text, jumping from section to section, looking for a specific piece of information. The reader may glance only at the first letter or word of each section, dismissing incorrect matches and moving on. Sustained reading is engaged reading. It includes pleasure reading (pursued for its own sake) and reading for understanding. Readers slow down, read the entire text, and may go into a trance-like state. Through web typography, designers help their readers to gain the information they need by predicting what type of reading they will be doing, choosing and combining the appropriate typefaces and creating hierarchy. Effective typography for responsive design has become an unavoidable necessity within web design as sites are viewed across varying platforms.

Web design in Ireland is presently undergoing considerable change with web users becoming more proficient in digital technology and the demand for higher standards across multiple platforms increasing and emerging from this is the need for improved methods of typography, now made possible with the introduction of tools such as TypeKit and the advancement of CSS3. Today, web designers need to know as much as possible about each user's reading environment.

After defining typographic principles, including designing using a grid system, golden ratio typography and hierarchy, this study will explore the most relevant services which enable designers to embed fonts into online documents and the effective methods for improving online typography. It will determine the factors that effect responsive online typography and suggest solutions for common typographical concerns. This will be done by researching the common issues experienced by web designers in Ireland using both primary and secondary research methods.

This study will also explore the importance of licensing typefaces for online use and the best practising when taking copyright requirements into consideration. Many fonts are protected by copyright and cannot be reproduced without the expressed permission of the copyright holder. This can create licensing problems when implementing typography in web design.

1.2 RESEARCH QUESTION

The research presented in this thesis attempts to determine the main issues that occur when implementing typographic design principles in responsive web design and what are the most effective methods for resolving these issues.

1.3 AIM

The primary aim of this research is to establish the best methods for implementing typographical design principles when designing for the web.

1.4 OBJECTIVES

The following objectives have been selected in order to determine what are the effective methods for incorporating typographic design principles in web design.

1. Determine what practices are currently in use in Irish web design agencies when incorporating typographic design.

2. Ascertain the most common issues that arise when implementing typographical design online.
3. Exploring the solutions available to web designers in Ireland today to help counteract these issues.
4. Determine how well each online typographical solution works and what difficulties arise when put in use, including any cost issues.

1.5 RATIONALE

This study will determine the effective methods for incorporating typographic design principles in web design by researching current practices being carried out by Irish designers as well as the most common issues that affect responsive design. The study will examine the current methods used by Irish designers and try to determine the most effective solutions for resolving these issues. The study will then state conclusions and make recommendations for implementing typographic principles in web design.

Chapter one establishes the background of this topic and determines the need for future research to improved methods of implementing typographic design principles within responsive web design. Following from this, it identifies the research question as well as the aims and objectives of the study. Rational and context for the study is also given.

Chapter two will reveal the findings of the literature review conducted and outline a brief history of web typography. This chapter will then establish the definition of typography and web typography as well as establish the principles of typography, discussing the control of layout and spacing using design grids. It will then continue by outlining the differences between a 'font' and a 'typeface' and discuss web font formats and considerations such as screen resolution and anti-aliasing. Typographic matters such as legibility and contrast, hierarchy, line height and length and letter spacing are also examined. Factors that affect typographic design online, include establishing the different ways people read online and the factors that affect readability. Issues caused by the need for responsive web design and changing platforms are also examined. The study then goes onto determine the copyright issues surrounding the use of typefaces. The chapter will conclude by discussing the findings of the literature review surrounding the use of HTML, CSS and JavaScript and the potential provided by recent developments these languages.

Chapter three discusses the epistemology and research design in relation to the study. It outlines the research design methodology that has been applied and the reasons for using these research methods. It will discuss both the primary and secondary research undertaken and the ethics and scope of this research.

Chapter four continues by presenting and analysing the primary research conducted, expanding on the level of success of this research. It will contain an analysis of both the interview questions and the purpose of each question and its key points, as well as the conclusions drawn from these questions. Chapter five will contain the study's conclusions and recommendations.

1.6 CONTEXT

As a designer working in both the area of print and web, experience in the industry has led to the belief that recent developments within the web design industry has led to a need for improvement in the methods of incorporating typographic design principles, especially when considering responsive web design. Improved methods for incorporating typographic design principles in responsive web design would enhance online readability as well as aesthetics and accessibility of online material.

Although the interest in typography on the web has grown heavily over the last few years (Casario, 2012, p. 49), as an online reader, experience has shown that typography is often neglected and web designers often do not consider it an important aspect of their web design projects. As stated by Green and Clawson (2012, p. 173) 'Web typography, deservedly, has a really bad reputation'. Through examining factors such as hierarchy of text, designing using a grid system and issues surrounding readability the study will show were improvements can be made in this field and what steps should be taken to implement these methods.

The study facilitates a greater understanding of web typography and the opportunity to conduct research into the current state of online typography and the common issues faced by Irish web designers face when designing for the web. The primary research will include exploring the financial issues involved in this area as well as the problems relating to copyright issues that occur.

The findings from this research may be of interest to web designers and students of design, especially those studying typographic design for online use. For those already designing using typographic principles it may be useful as a guide to

improving typographic design, especially within responsive web design. In an academic environment this study will attempt to outline what methods can improve the implementation of typography and give a conclusion from research which may provide an insight into the practices of working web designers in Ireland today.

1.7 RESEARCH METHODS

The research conducted for this study consists of both primary and secondary methods. Secondary research in the way of a literature review is used initially to identify the research question and then to become familiar with the subject area. A literature review involves 'reflection and analysis and comment on contributions to the field of study' (Wisker, 2008, 173–4). Published material is used to identify various theories, concepts and arguments around the subject of web typography.

Primary research in the form of interviews is used to establish some of the current practice strategy of Irish web designers, as well as their level of interest and knowledge in web typography. The interviews will establish the professional background of the respondent as well as the level formal education, if any, they received surrounding the topic of typography. These interviews will also establish the most common issues that occur when implementing typographical design online and what the designer sees as the limitations they have encountered when implementing text in their web design projects. It will also indicate whether the respondents use design methods such as typographic grids in their web designs and if their habits are changed when using content management systems like WordPress. The issue of finance is also briefly discuss and the affect this may have on typographic choices in the respondents designs. The respondent will also discuss web safe fonts and their use of languages such as CSS and JavaScript as typographic solutions. Brand identity and search engine optimisation is also discuss as these are both factors which may be a consideration for the respondent and may affect their design choices.

CHAPTER 2 TYPOGRAPHY: A LITERATURE REVIEW

2.1 INTRODUCTION

In order to gain a deeper understanding of typographic web design and determine what areas need further study it is necessary to carry out a literature review. This involves examining current research in the areas of traditional typographic principles as well as typographic web design and exploring the key issues surrounding the topic. This chapter outlines the findings of the literature review and provides a brief history of web typography. The chapter is broken up into multiple sections under the following headings: typography; font and typefaces; traditional typographic details; scale and rhythm; emphasis and contrast; grid and composition and then CSS (Cascading Style Sheets) and JavaScript. These particular topics are decided upon for the study's literature review as these issues arise repeatedly in the research as either important factors for consideration or problematic issues. The findings from the literature review is then analysed and summarised.

While the first part of this chapter introduces and outlines the topics to be discussed within the chapter and explains why these topics where chosen, the second part of the chapter discusses typography in a wider sense. After presenting a brief history of web typography, it explains the difference between the words 'font' and 'typeface' and outlines the factors which affect online reading. This chapter also outlines the importance of web typography to web design, taking responsive design into account. The topics discussed in this section will provide a basis for the study as well as outline what points need to be covered and why these points are important in web typography.

The third part of the chapter discusses font and typefaces and discusses existing font formats and which ones should be considered for this study. This section also discusses the use of 'web safe' fonts, and determines whether these can still be considered safe for responsive design. The effect of screen resolution and anti-aliasing in web typography is also discussed.

The fourth part of the chapter will examine emphasis and contrast, outlining the factors that the literature review reveals as considered the most important elements for both readability and legibility. This section also outlines the difference between readability and legibility and goes onto discuss how people read online and how typography can affects people's ability and willingness to read online.

The fifth part of the chapter outlines the importance of scale and rhythm in web typography, taking responsive design into consideration as well as discussing hierarchy, why it is important and how it should be implemented to improve web typography. The use of grids and composition in web design is also explored and how this affects typographic decisions in design projects.

The sixth part of the chapter discusses traditional typographic details such as drop caps, hanging punctuation and opentype features, outlining the suggested methods for implementing these typographic details as well as their importance in design. Although some of these details are traditionally considered more important in design for print rather than web, this study attempts to determine the main issues that occur when implementing typographic design principles in responsive web, design and the most effective methods for resolving these issues, therefore has resolved to include traditional typographic details in this research.

The seventh part of the chapter covers the web design languages CSS (Cascading Style Sheets) and JavaScript and discusses how recent developments in both languages have affected how typography can be implemented, outlining some new and useful elements in both languages that can improve typography in responsive design. The eighth part of the chapter will provide an analysis of the literature review, pointing out disparities revealed by the research and gaps discovered in the available literature. The final part of the chapter will discuss the conclusions drawn from the literature research and make suggestions for further research.

2.2 TYPOGRAPHY

2.2.1 Introduction

This section presents a brief history of web typography and explains the difference between the words ‘font’ and ‘typeface’. It also the factors which affect online reading and the importance of web typography to web design, taking responsive design into account. The topics discussed in this section will provide a basis for the study as well as outline what points need to be covered and why these points are important in web typography.

As the main topic of this study is typography and it is beneficial for this study to define typography and give a brief outline of the history of web typography. Teague (2009, p. 3) describes typography as ‘the practice of arranging type within a design.’ He states that this not only includes the selection of a typeface, but also the

size, spacing, colour and style of the text. At a higher level though, typography also deals with the design of type on the page and its interaction with other elements such as photos, illustrations and interface chrome (Teague, 2009, p. 2). Teague suggests that typography adds a voice to text through the following:
Characters & Symbols: Text is created by individual glyphs, each with its own unique shape and meaning. Teague suggests always crafting your message with the right cast of characters.
Font & Typefaces: Typefaces are the skin on the bones of text. They make the first impression. Find the right fonts to sepal the right message.
Scale & Rhythm: Spacing and alignment control how the reader comprehends the text through space and time. Learn how to control the tempo of your message and guide the reader from beginning to end.
Emphasis & Contrast: Styles determine the impact your text will have on the reader. Use styles judiciously to add highlights and counterpoints to your message with bludgeoning the reader.
Grid & Composition: Layout of text in a regular sequence aids the reader's comprehension of the page. Use the grid to create order and establish hierarchy.

This study will use these five divisions, along with other considerations, to conduct a literature review in the field of web typography.

For this study it is necessary to provide clarity by defining the word 'typography'. Lynch and Horton (2009, p. 1) defines typography as 'the balance and interplay of letterforms on the page, a verbal and visual equation that helps the reader understand the form and absorb the substance of the page content.' They states that typography 'plays a dual role as both verbal and visual communication … readers scan a page and are subconsciously aware of both functions: first they survey the overall graphic patterns of the page, then they parse the language, or read.' This statement suggests that typography is more than legibility or readability but works as a 'first impression' in design. It can affect a readers understanding or willingness to understand the content.

This statement is reinforced in the case of web typography by Casario (2012, p. 97) who states that good web typography is about more than making pretty type. 'It's about helping the reader scan your text and quickly grasp where to start looking and what it is about. It's about subtly guiding your viewers over your page's content' (Casario, 2012, p. 97). Web typography can be defined as anything that refers to the

use of fonts on the web but Teague (2009, p. 12) gives us a more complete definition: 'web typography is the practice of typography applied to text marked up using HTML, and styled using CSS.' Teague (2009, p. 1) also states that everyone who has set type on a computer is a typographer defining a typographer as 'someone who sets written material with moveable type'. The role of web typography—as is the case with other uses of typography, such as in print—is to administer a set of techniques that aid in the readability of text (Casario, 2012, p. 79).

For this study it is also necessary to clarify the difference between a font and a typeface, as Jon Tan stated 'A typeface is not a font. A font is not a typeface.' Clark, Studholme, Murphy and Manian (2012, p. 397) set out a definition for both the term 'font' and the term 'typeface' to differentiate between the two. They state that the term typeface 'refers to type designs that are created by type designers.' They give Georgia, Helvetica, and Futura as examples of typefaces and explain further by stating 'typefaces can be created on paper and then tweaked in a type design application or created in software programs like Font Lab. Letters that form parts of a typeface have characteristics that can be tweaked with various settings.' Clark, Studholme, Murphy and Manian (2012, p. 397). They define fonts as enabling the printing of a typeface, 'fonts can be metal or, in the case of the web, digital' (Clark, Studholme, Murphy and Manian, 2012, p. 397).

2.2.2 History of Web Typography

To understand the development of web typography it is useful to this study to review the its history. In the early days of web design stylesheets were not created by the web authors but by the user. The user could specify a universal stylesheet and had full control of the fonts that were used to render the web pages (Clark, Studholme, Murphy and Manian, 2012, p. 399). In 1996 the standard changed so the author set a list of fonts in the order of preference according to what was available on the users machine. The author could also set a default generic font that the browser would use to find a suitable font from the user's computer if none of the author-chosen fonts were available. Microsoft also created a freely distributable font stack that was legible on the screen and supported internationalisation so that it could be used as a base for web typography. This led to the proliferation of Arial, Courier, and Comic Sans across various operating systems. Due to the lack of font variations this led many designers to use image placement within web design which cause many problems concerning accessibility and download speeds. The most common way to render a font that is not available on a user's machine is to

serve it as a graphic. This technique came in countless variations, each eliminating or adding constraints to the manner in which these images could be used (Clark, Studholme, Murphy and Manian, 2012, p. 400). This standard remained in place until 2008.

In 2001, the SVG 1.1 Working Draft was released with a font element that allowed users to specify glyphs in SVG syntax (Clark, Studholme, Murphy and Manian, 2012, p. 403). SVG fonts have gained prominence recently as iOS devices do not support the ability to render Open Type font but Mobile Safari and Opera Mobile do render SVG fonts. Unfortunately, this means the fonts lose the hints and–depending on the font–look worse on small screens (Clark, Studholme, Murphy and Manian, 2012, p. 403). CSS 2 specification in 1998 saw the introduction of the @font-face rule, which gave the designer the ability to embed their own fonts on the pages. This was intended to allow the viewer to see your design as it was designed but unfortunately, as it was not widely implemented on all browsers, was later removed from the recommendation for CSS 2.1. The @font-face rule re-emerged with the CSS3. A new font format was agreed upon, called WOFF.

With the re-emergence of the @font-face rule the term 'web fonts' emerged, rather than the previous 'web safe' fonts. This term simply refers to all the fonts that are available to be used by declaring them in the @font-face rule. Typically all of these fonts have been optimised for web usage; thus they have small file sizes and are aliased to render correctly when used with smaller font sizes (Clark, Studholme, Murphy and Manian, 2012, p. 404). The biggest drawback of web fonts that are offered as a service is that users can't easily use them in Photoshop mock-ups of web designs. (Clark, Studholme, Murphy and Manian, 2012, p. 412). Current browsers support the @font-face rule but there are logistical issues as using the @font-face rule may increase the download time of fonts. The @font-face rule also causes concern over copyright issues as most fonts can be converted into the formats that can be used by the @font-face rule. Alternatively, using Google Web Fonts removes this concern as it does not directly let users download font files but make them available with open source licences but are hosted by Google and served via its web fonts API. Google Web Fonts can be implemented with the Google Web Fonts Loader which can automatically request from several font repositories that serve fonts upon request, such as Google, Ascender, Typekit, Monotype, and Fontdeck. As stated by Clark, Studholme, Murphy and Manian (2012, p. 407) 'In addition, we can use the custom configuration on fonts that we host on our server'.

There are now many sites that offer web fonts as a service, the most popular being as TypeKit, FontDeck, WebInk, Typotheque and Fonts.com. Users need to link to their stylesheet or a script file and then use the font in our stylesheet. Costs vary across the services and are accurate at the time of writing

2.2.3 Online Reading

The issue of online reading has become more prominent as web design progresses. As Harry Roberts reminds us 'We visit websites largely with the intention of reading. […] With this in mind, does it not stand to reason that your typography should be one of the most considered aspects of your designs?' (online article, *Technical Web Typography*, 2011). To determine the best practices for improving the readability of text online is important that this study examines the topic of online reading. Franz (2012, p. 2) describes how people read in three ways: 'People read casually, skimming over text, reading words or paragraphs here or there to get a sense of what it says. People scan with purpose, jumping from place to place on a site, looking for a specific piece of information. They may only read the first word or character of each item as they scan the screen and finally people read in an engaged manner. When they find an article or blog post they are interested in, they will slowdown and read the whole text. They may even go into a trance like state. Good web typography must facilitate all three ways of reading' (Franz, 2012, p. 2). Good typography promotes reading, as stated by Gould (1987, p. 499) 'good typography improves reading speed and comprehension and makes reading easier on the eyes'. Therefore improving online typography should improve the online reading experience.

2.2.4 The Importance of Web Typography

> *Typography is what language looks like.*
>
> Ellen Lupton

Most of the content found on the web is text, so when it comes to planning a website, web typography is an important detail. According to Gerry Leonidas in his article *Type Design and Development* (*Typography Referenced*, 2012, p. 31) 'the explosion of smart phones, ebook readers, and tablets bring typefaces to the foreground of the design process.' He continues 'as less-than-forgiving surfaces with constant dimensions replace format, colour fidelity, and material properties, typefaces and typography emerge as the dominant ways to distinguish one publication from the

next.' (Leonidas, G., 2012, p. 31). Web typography is a major part of web design, as stated by Reichenstein (2006) in his online article for ia.net, the proportion of written language is as high as 95% of web information. He goes on to state that 'it is important for web designers to get acquainted with the discipline of shaping written information.' The availability of a wider selection of typefaces has increased the need for a concentration on typography as part of web design. According to Carter, Day and Meggs, 2011, as web designers gain access to a greater percentage of the world's font libraries, the need to understand typography from historical, technological, and communicative perspectives is critical.

The literature review reveals a prevalence of authors encouraging their readers to take a more important view of the role of typography in design. This is most obvious is more recent literature: 'Recognizing type as the atomic element in web design affords us the opportunity to make better design decisions that resonate upward and outward into the experience.' Tim Brown, 2011, *More Meaningful Typography* and according to Laura Franz (2012, p. 17), 'fonts are like clothing; we take them in and process their underlying meaning constantly'. Typeface, or a set of characters of the same design, is an integral part of design. Franz states that typography 'sets the tone for the logo, the website or any other message included in a design piece. Typeface can communicate the feeling or intention behind the design piece, as well as the practical denotation and emotional connotation of the piece (Franz, 2012, p. 25).

This section contained the research which outlined the importance of web typography to web design, taking responsive web design into account and discussed online reading. The topics discussed in this section provide a basis for the study as well as outline what points need to be covered and why these points are important in web typography.

2.3 FONT & TYPEFACES

2.3.1 Introduction

This section discusses font and typefaces and outlines existing font formats and which ones should be considered for this study. In this section the use of 'web safe' font and their place in responsive web design is also discussed. The effect of screen resolution and anti-aliasing in web typography is also discussed. The choice of font type and format and the display environment will play a key role in designing a consistent, responsive website. Franz (2012, p. 25) states 'the words themselves communicate the message, the font plays a supportive role'. In other words, typeface

should support the material's message and lend visual impact, rather than overtake the actual message. Before discussing typeface choices we must first look at what web font formats to use.

2.3.2 Web Font Formats

Choosing the right font formats is essential to ensure consistency in typographic design. There are a huge variety of web font formats in existence (for example EOT, TTF, OTF, WOFF, SVG, CFF, AFM, LWFN, FFIL, FON, PFM, PFB, STD, PRO and XSF) however, for the purpose of this study, only five of these need to be considered: EOT, OTF, TTF, SVG and WOFF as these, according to Teague (2009, p. 80) are the five font formats commonly used within web design. Casario (2012, p. 52) maintains that a cross-browser web font kit should support at least these three font formats: TrueType/OpenType, WOFF, and EOT. The web font format EOT is exclusively supported by Internet Explorer. Smashing ebook #6 (2011, p. 192) states that 'Even though it might not succeed as web font format in the future, it still makes sense to use this format today in order to supply the users of various IE versions with modern web fonts.' TrueType Fonts (TTF) and OpenType Fonts are standard font formats and until the existence of the @font-face rule could not be embedded in web design without any prior conversion. SVG fonts are text files that contain the glyph outlines represented as standard SVG elements and attributes, as if they were single vector objects in the SVG image. According to Smashing ebook (2011, p. 194) it's one disadvantage is 'While EOT, WOFF and PostScript-flavoured OpenType have compression built into the font format, SVG fonts are always uncompressed and usually pretty large.' Large fonts may cause a delay in rendering a web page and create problems with file size.

Developed by two font designers (Erik van Blokland and Tal Leming) in cooperation with Mozilla developer Jonathan Kew, WOFF was published as a working draft in July 2010 by World Wide Web Consortium (W3C), the web Open Font Format (WOFF) is in the process of being standardised as a recommendation by the W3C Smashing ebook (2011, p. 193). WOFF provides lightweight compression of font data along with additional metadata for informing users of licensing information. John Dagget, a contributor for Mozilla, notes some key differences between WOFF and TrueType and OpenType fonts. First, the compression of the WOFF allows web designers to optimise the size of fonts used on their pages. The compression scheme is lossless, which means the uncompressed data in WOFF will match the data of the original OpenType or TrueType font on which it is based. Web designers can

also use HTTP compression, a feature of some browsers and servers that allows data to be compressed before it is stored on a server for bandwidth optimisation purposes. This is simpler to use and does not require access and knowledge of the server configuration the website is hosted on. Although the WOFF is compressed, it is not encrypted and thus should not be considered a secure format for use in regulating and controlling its use. The second key difference is that the ability to embed metadata in the WOFF font files allows font vendors to attach information related to font usage. The metadata does not affect the performance of the WOFF, but font utility tools can use the information to determine the source of the given font for usage and tracking purposes (Dagget, 2010).

2.3.3 Web Safe Fonts

'Web safe' fonts are the fonts most likely to be present on a wide range of computer systems, and used by web content authors to increase the likelihood that content will be displayed in their chosen font. The fonts that are considered most safe to use are: Arial, Helvetica, Times New Roman or Times; Courier New or Courier. Other options that are considered safe to use cross-platform are: Palatino; Garamond; Bookman; Avant Garde. Verdana and Georgia were first designed as bitmaps of pixels, then they were translated into online fonts which result in better on-screen fidelity than most typefaces originally designed for high-resolution output. However, as Phinney (2013) points out in his online article *Web Safe Fonts Are Dead*, most of the mobile devices linked to significant growth in web browsing in recent years don't support traditional 'web safe' fonts. 'These fonts aren't available on Android, Chromium or most other Linux devices—which collectively make up the majority of mobile devices sold today—just ahead of iOS.' Phinney (2013, online article). This highlights the issues surrounding web typography, especially when considering responsive web design. The term 'web safe' fonts should not be confused with the term 'web fonts'. Web fonts is a term used to refer to any font which can be used on the web. There are two ways of using web fonts, a designer can store the font on their own server and access them through the @font-face syntax or access the font files from another server using the syntax provided by that system, as with TypeKit. With the introduction of web fonts which are accessed from a server, the issue of screen resolution must be addressed, as many fonts now available for web where designed initially for print and may not be suitable when screen resolution is taken into account.

2.3.4 Screen Resolution

Resolution refers to the quality of the screen display. The choice of typeface and weight of font use in web design requires taking screen resolution into consideration as font size and weight will be affected by the display resolution. Franz (2012, p. 11) explains this in detail, 'Macintosh screens are 72 ppi (pixels per inch), and Windows screens are 96 ppi. A font set at 12 px will appear approximately 1/6' tall on a Mac and less than 1/8' tall on a Windows screen. In either case, the screen will have (at most) 12 px by 12 px to render a letter. Thin strokes and small spaces in letterforms will start to disappear. And, as in the photocopy example, the text will be harder to read. In 2007 Beaird stated in his online article *The Principles of Beautiful Typography* 'while the size of type in the print world is measured by an absolute value, the size of type on the web must be relative to the resolution of the viewer's monitor.' Anti-aliasing is used to counteract the negative effect of screen resolution on typography.

2.3.5 Anti-aliasing

As fonts are not displayed in vector format in an online environment, on-screen font rendering from a vector format into raster may cause significant changes to the shape and form of a glyph, 'the translation of a font's outlines into pixellated text of varying quality, consistency, and sharpness is not straightforward. It involves both a font and a rendering engine, and only so much can be controlled by type designers and web designers' (Adobe Systems Incorporated, 2010, online article *Type rendering on the web*). Therefore, additional techniques have been developed in order to avoid substantial changes in the form of glyphs. Anti-aliasing is a font-smoothing rendering method 'uses partial opacity to emulate smooth curves of the glyphs. As the final result, the shape of glyphs is more true to the type's design' (Szafranek, 2009, online article *Font Smoothing Explained*). Anti-aliasing is dependent upon hinting, a technique which uses mathematical algorithms to determine not only the exact position of a pixel, but also to determine what areas of a glyph need to be smoothed. However, anti-aliasing cannot be used for small font sizes as this causes the text to appear blurred.

2.3.6 Copyright and Licensing of Fonts

The development of web typography has until recently been restricted by the issue of font licensing, one of the main concerns when choosing a typeface for a web design project being the copyright of the font. The development of CSS3 enabled designers to link to a font, rather than embed the font on a website. One of the

biggest problems is to understand the difference between the permission to link and to embed a font on the Internet. Most of the fonts have a web embedding agreement. This means that the designer is allowed to embed the font in a file and this file is embedded on the website (Franz, 2012, p. 57).

2.4 EMPHASIS & CONTRAST

2.4.1 Introduction

This section examines the importance of emphasis and contrast, outlining the factors considered the most important elements for both readability and legibility and the difference between the two. It then continues by discussing how people read online and how typography can affects people's ability and willingness to read online.

Emphasis and contrast are necessary in web design to provide focus points in the content to improve the readability and promote understanding of the content, as stated by Smashing ebook #6 (2011, p. 31) 'focus points are essential in web typography. By emphasizing these objects, you provide focus points for the user.' Tselentis (2012, p. 230) states 'Contrast is one of the best ways to create differentiation between graphic elements. With typography, contrasts in size, weight, width, color, position, and typeface are just some of the means to separate information or catch a viewer's glance.' The choice of typoeface and the combination of fonts and typefaces also affects the contrast of the content, as Jason Santa Maria stated in his 2009 online article *On Web Typography* 'Very different typefaces can play off of each other in complementary ways or resist each other to create a bit of tension, while typefaces that appear too similar can weaken the message and confuse a design's visual language.' (2009). As with printed typography, the balance of emphasis and contrast affect not only the legibility but also the readability of the text. The traditional way of expressing emphasis typographically is through bold and italic faces. Variations in size, by comparison, typically indicate a hierarchy of information: titles are bigger than headings, for example, which are bigger than text. Felici (2012, p. 75) states that 'of the two, italics are far more commonly used. Italic type is assigned many roles by typographic convention, among the principal of these are emphasis and distinction (Felici, 2012, p. 76). Franz (2012, p. 23) states that words set in italic feel humanistic because they reference letters written by hand. The font-style property accepts one of three possible values: normal, italic, and oblique. Coyier (2013, online article) mentions that, according to the spec, 'Italic forms are generally cursive in nature while oblique faces are typically sloped versions of the regular face.' However, if the

font being used does not have italic or oblique faces available, in most cases there is little, if any, difference between italic and oblique.

2.4.2 Setting the font weight

Changing the font weight, for instance making a word bold, will inform the reader of the hierarchy of that text and convey emphasis to the words. The weight of a font refers to the varying degrees of thickness built into a font. Using the 'font-weight' property we can set text to render darker and heavier. Clark, Studholme, Murphy and Manian (2012, p. 419) outline the possible values for this property:

- 100 to 900: These values form an ordered sequence, where each number indicates a weight that is at least as dark as its predecessor.
- normal: The font renders as though a weight of 400 has been specified.
- bold: The font renders as though a weight of 700 has been specified.
- bolder: Uses a weight that is bolder than the inherited value.
- lighter: Uses a weight that is lighter than the inherited value.

They also point out that one of the problematic features with this property is that the browser generates bold/light font faces for fonts that have no defined settings for bold or light values. This can cause inconsistent results across browsers.

2.4.3 Colour

The colour chosen for designing text will affect the readability of the content, as Franz (2012, p. 165) states 'Type set in color can lose legibility if the text color is too similar to the background color. It can also lose readability (the reading experience becomes uncomfortable) if the text is too bright, or "vibrates" with the background color.' She recommends avoiding colours that are too light or too bright as these are difficult to read (Franz, 2012, p. 165). Colour can be used to create an emphasis on one word or sentence, as Franz (2012, p. 166) says, emphasis can be obtained if an element is brighter, darker or a different hue from the others. Felici (2012, p. 79) states that 'the text typefaces of today were designed for black ink on white paper. The shapes, proportions, and stroke weights of their characters assume a high contrast between letter and background.'

2.4.4 Legibility and Readability

Legibility and readability are two terms used to describe how easily type can be read (Bosler, 2012, p. 62). Legibility refers to the design of the words, while readability refers to the way a designer arranged the words. Felici (2012, p. 106)

outlines the difference between legibility stating that legibility refers to a reader's ability to easily recognise letterforms and the word forms built from them whereas readability refers to the facility and comfort with which text can be comprehended. He clarifies this statement with the point that text with good readability must also be legible, but mere legibility doesn't make text readable. In his online article *It's About Legibility* (2013), Haley differentiates between the two by stating 'legibility is a function of typeface design. It's an informal measure of how easy it is to distinguish one letter from another in a particular typeface. Readability, on the other hand, is dependent upon how the typeface is used. Readability is about typography. It is a gauge of how easily words, phrases and blocks of copy can be read.' This statement could lead to the conclusion that readability has a higher importance than legibility when considering typographic web design. Smashing ebook #6 (2011, p. 25) states 'readability is one of the more important aspects of web design usability. Readable text affects how users process the information in the content.' Although Felici (2012, p. 72) states that readability studies are notorious for coming to clouded and contradictory conclusions, there are many factors which are agreed upon that affect readability, both online and in print. Franz (2012, p. 11) states that online readability (how easily text can be read) depends on how type is used on the screen. One factor of readability is choosing a legible font. Legibility is the physical appearance of text – the way shapes of letters and numbers enable people to read text 'quickly, effortlessly, and with understanding' (Schriver, 1997, p. 252). According to Franz (2012, p. 11) 'text is meant to be read and if it feels hard to read, people won't want to read it. When we read, we don't read every letter. We read the shapes of words. These shapes are primarily created by two things: the strokes that make the letters and the spaces in and around the letters.'

It is essential to this study to identify the factors that affect legibility before determining how to improve it. The typeface and fonts chosen by web designers impacts greatly on legibility. Carter, Day and Meggs, 2011 state that given the limitations of rendering type on screen, the choice of typeface will either help or hinder legibility. While Teague (2009, p. 170) identifies only two factors to consider for improving the legibility of a font – its x-height and letter-spacing, Franz (2012, p. 247–8) gives us a more expanded view stating 'the elements required in a legible font are open spaces and healthy strokes such as generous x-height, open counter forms, generous bowls, discernible terminals and generous strokes.' The x-height is the centre area of the baseline and cap height, measured against the height of the lowercase *x* (Bosler, 2012, p. 97). Fonts with a generous x-height looks larger and

are more comfortable to read at smaller sizes. Fonts with smaller x-heights need to be set a little bigger. Franz (2012, p. 12) states a legible on-screen font should have a healthy x-height without sacrificing the ascenders and descenders. A counter is any enclosed space in a letterform. If the space is completely enclosed it is referred to as a closed counter. An open counter occurs when a curved, straight or angled stroke does not connect to another stroke but still creates an enclosed space (Bosler, 2012, p. 19). An open aperture creates more visual space. Slightly loose letter spacing also promotes legibility (Franz , 2012, p. 248). The bowl is a curved stroke that connects to either a vertical stroke or to itself (Bosler, 2012, p. 32). The bowl is the shape of the rounded forms in the lowercase letters. If a bowl is too narrow, the counter form is too small, if it's too round, the counter form gets too big. A font with a bowl that falls somewhere in the middle should be used (Franz, 2012, p. 13). Also related to bowls and counter forms are shoulders. A shoulder is a short rounded stroke that connects two vertical strokes or a vertical stroke and a terminal (Bosler, 2012, p. 30). Shoulders are where the curved line meets the stem in letters like H, D and M. The stem is the straight vertical stroke in a letter. This helps keep the counter form open even at smaller sizes and at low resolution. A legible font has prominent A centres and D centres (Franz, 2012, p. 248). Serifs are small structural extensions that are at the end of a letter's horizontal and vertical strokes. Serifs come in a variety of shapes and sizes (Bosler, 2012, p. 96). A font with serifs is called a serif font and when no serif is present a san serif font. Both serif and sans serif fonts can be legible or lack legibility. According to Franz (2012, p. 248) 'delicate serifs can get lost on the screen while strident serifs can draw too much attention to themselves and undermine the flow of words.' Bosler (2012, p. 28) defines a terminal as simply 'a stroke ending without a serif.' Franz (2012, p. 12) states that a legible font has discernible terminals. Terminals are the ends of strokes in letters like A, R, and F. Some terminals have a ball or pen-formed shape. Other terminals don't have any extra shape to them. Having a discernible shape to the terminal can help readers differentiate between the letters in text. A Stroke is a straight or curved line that creates the principle part of a letter (Bosler, 2012, p. 29). Legible fonts have generous strokes. If strokes are too thin, they get lost. If they are too thick, you run the risk of losing space in the letters … A font with very thin stroke get lost on the screen Franz (2012, p. 248).

2.4.5 Back-Lit Environment

Another factor to impact the text legibility is the back-lit environment it appears in. 'Since a lit monitor is much brighter than the reflective light of paper, the

contrast between black and white on a monitor is much greater than it is on printed materials. To promote readability, screen typography should have enough contrast to be legible, but not so much contrast as to unnecessarily irritate the viewers' eyes' (Rabinowitz, 2006, p. 260).

It is suggested that on-screen text should be laid out as in reverse, using black background and white colour of the text. Taking into account the basic colour theory rules, black, grey, and white are considered to be neutral colours. However, Rabinowitz (2006, p. 261) states 'high levels of contrast can cause an optical dazzle effect. High contrast can also cause type glow, which occurs when the brightness of a background permeates the edges of darker or duller letterforms, making them appear thinner. Type glow can also happen when the brightness of letterforms seems to overflow into a darker or duller background, creating an optical aura that makes the letters seem to glow'.

2.4.6 Line Height

Line height, traditionally referred to as leading in print design, is the amount of vertical space between lines of type. Bosler (2012, p. 91) states 'This space, called leading (pronounced ledding), changes the texture of sentences on the page. As with tracking, legibility issues result if the leading is either too tight or close, or too loose or wide.' (Clark, Studholme, Murphy and Manian, 2012, p. 413) reveal a very simple rule for ensuring legibility: 'It's a good practice to set a unitless value for line-height that is greater than 1 to ensure your text is always readable.'

2.4.7 Line Length

The length of a line of text in a design can negativity or positively affect the readability of the text, as Franz (2012, p. 92) explains 'Readers want to scan across and down the text at the same time, focusing on a couple of words and filling in the rest. When lines of text are long, readers need to work harder to scan across an entire line, and then go back to find the start of the next line' Bringhurst (2012, p. 26) states 'Anything from 45 to 75 characters is widely regarded as a satisfactory length of line for a single-column page set in a serifed text face in a text size. The 66-character line (counting both letters and spaces) is widely regarded as ideal.'

The CSS3 property, 'hyphens', is a way to truncate long text so that it is still easy to read, but doesn't spill outside the confines of the page's design boundaries. This property can be can use to control how text gets hyphenated when it spans across

two lines. (Casario, 2012, p. 79). Clark, Studholme, Murphy and Manian (2012, p. 426) state 'For years, web designers have attempted to find a solution that would allow them to justify text beautifully with hyphens. Fortunately, a lot of work has recently been done to get some control over the hyphens in CSS.' The hyphens property controls the display of hyphens. It takes one of the following values:

- NONE: Words are not broken into separate lines.
- MANUAL: Words are broken into separate lines if there are line-breaking characters within them like a soft hyphen () or a hyphen character (-).
- AUTO: Words are broken at appropriate hyphenation points. Note that a browser requires the knowledge of the language used for the text that gets hyphenated, so this only works on text that has an appropriate language declared and for which the browser has the right hyphenation resource.

To target individual words in a sentence which contains an unbreakable word (like 'antidisestablishmentarianism'), browsers usually render it in the same line even if it overflows the width of the container. This can lead to large white spaces in the middle of paragraphs which can be confusing to the reader. The word-wrap: break-word property can be used to tell browsers to break the word if it is too long to fit the width of its container (Clark, Studholme, Murphy and Manian, 2012, p. 425).

2.4.8 Letter Spacing and Kerning

Letter spacing is the space between each letter in a word, the manual adjustment of this space is called kerning, though more common in printing than web design. Letter spacing, like line height, affects readability in web typography. Although all typefaces have predefined letter spacing, kerning is often necessary to improve the display of type, especially large headings. As stated by Tselentis (2012, p. 324) 'Manual kerning improves the appearance and legibility of text when the white space between two characters appears visually awkward.' Smashing ebook #6 (2011, p. 28) states 'in print layout, negative letter spacing is a common technique to add a more fun feel to the layout, but it should never be used in body text. In any text, letter spacing is an obvious factor in legibility.' Letter Spacing lets the designer set the space between two characters in the text. A negative value indicates that the space between the two characters will contract. Clark, Studholme, Murphy and Manian (2012, p. 423) state that, in CSS, users can only set a uniform letter spacing that will add the same spacing between two sets of characters in text. They suggest using javascript to resolve this, such as the jQuery lettering.js, a jQuery plugin that

wraps each character in a span element with a classname, which can then be used to tweak the setting for each character.

Bosler (2012, p. 91) outlines the importance of word spacing 'When spacing is too tight, the words jumble together, turning the sentence into one long, ongoing word, as opposed to individual words forming a sentence. When word spacing is too loose, the result is a series of halting, staccato gaps within the sentence, causing the viewer to see fractured words instead of a complete sentence.' The property 'word-spacing' specifies the behaviour of the space between two words. A negative value indicates contraction of space between words (Clark, Studholme, Murphy and Manian, 2012, p. 423).

2.4.9 Control white space and line breaks

Controlling the white space and line breaks within an element or block of text will promote legibility. Bosler (2012, p. 119) suggests allowing for adequate white space, to help the eye flow through the content. Clark, Studholme, Murphy and Manian (2012, p. 425) outline the options that the white-space property selects for handling of white spaces in text for the selected element:

- normal: Collapses white space and breaks lines as necessary to fill the dimensions (and not when newlines are present).
- nowrap: White spaces are collapsed, but lines are not broken.
- pre: White spaces are not collapsed, and lines are broken only if there is a newline in the text or, in the case of generated content, '\A'.
- pre-wrap: Behaves like pre but lines are broken as necessary to fill the dimensions or if newline is present.
- pre-line: Behaves like pre-wrap except it also collapses spaces and tabs.

2.5 SCALE & RHYTHM

2.5.1 Introduction

This section outlines the importance of scale and rhythm in web typography, taking responsive design into consideration. The importance of hierarchy and how it can be used to improve web typography is also examined. The use of grids and composition in web design is also explored and how this affects typographic decisions in design projects.

The scale and rhythm within a web design has become increasing difficult to implement and predict due to the development of multiple platforms and responsive

design. Bosler (2012, p. 96) defines rhythm as 'a pattern that creates the flow through a page'. She describes rhythm as one of the design principles that reflect the basic human need to create order (Bosler, 2012, p. 108). Spacing and alignment play an important role in design and when incorporated into web design improve the readability of the content and increase the readers willingness to stay on the page. Felici (2012, p. 5) states 'If there is an essential truism in typesetting, it is that a page contains no voids, only spaces between printed elements. The essence of typesetting is regulating the size of those spaces to control the balance and rhythm between black and white. This is the key to a graphically harmonious page'. The scale and rhythm of the design is affected by various factors including whether a design is responsive, the hierarchy of the content and the column layout.

2.5.2 Responsive Web Design

In his 2010 online article *Responsive Web Design*, Marcotte coined the term 'responsive web design' stating that fluid grids, flexible images, and media queries are the three technical ingredients for responsive web design, but responsive design also requires a different way of thinking. 'Rather than quarantining our content into disparate, device-specific experiences, we can use media queries to progressively enhance our work within different viewing contexts.' (Marcotte, 2010). A relatively new term 'responsive web design' is often used to infer the same meaning as a number of other descriptions, as Frain (2012, p. 10) lists: fluid design, elastic layout, rubber layout, liquid design, adaptive layout, cross-device design, and flexible design (Frain, 2012, p. 10).

Marcotte (2010) suggest designers can achieve responsive designs by 'establishing constraints: and set type in pixels, or create fixed-width layouts that assume a minimum screen resolution.' He states that establishing those constraints is a bit like selecting a canvas 'they give us known parameters to work from, certainties that help quarantine our work from the web's inherent flexibility.' However, in his online article *A Dao of Web Design*, Allsopp (2000) had a very different attitude to web design 'The control which designers know in the print medium, and often desire in the web medium, is simply a function of the limitation of the printed page. We should embrace the fact that the web doesn't have the same constraints, and design for this flexibility. But first, we must 'accept the ebb and flow of things.' (Allsopp, 2000).

2.5.3 Setting font sizes

Don't compose without a scale

Robert Bringhurst

For this study it is necessary to examine units of measurement for type and outline the advantages or disadvantages involved in their use. There are three standard units of measurement for type: pixels, EMS or REMS. Pixels are the smallest unit of space available for information on a display screen (Bosler, 2012, 227). This has been the traditional unit of measurement for type until recently. Frain (2012, p. 76) states that an EM as a measurement that defines the proportion of a given letter's width and height with respect to the point size of a given font. An EM is a relative unit of measurement; one EM equals to the vertical size of an element's text (Beaird, 2007, online article). The REM unit allows us to set the font size relative to that of the root element. Although pixels are still the preferred unit of measurement for page layout, margins and padding, many writers recommend the use of either EMS or REMS when determining a value for font-size property, especially when considering responsive design needs. Clark, Studholme, Murphy and Manian (2012, p. 414) recommend setting fonts with the REM unit with a fallback to the EM unit for setting font size. They state 'this is an easy way to set type sizes to be relative to the base font-size. If we increase the base font-size, every other element automatically adjusts itself.'

2.5.4 Hierarchy

Creating a hierarchy will enable the reader to understand the importance of the content of the web design. 'One way to balance contrast and consistency is to create a regular typographical hierarchy, where type fluidly scales from the top level (level 1 heading) into the body content (paragraphs)' (Teague, 2009, p. 157). Bosler (2012, p. 120) defines hierarchy as 'content composed of different types of information of varying degrees of importance'. It is widely agreed that hierarchy is an essential element of good typographic layout. Smashing ebook (2011, p. 25) states hierarchy defines how to read through content. It shows the user were to start reading and where to read through. It differentiates headers from body text.' Lynch and Horton (2009, p. 1) states that 'good typography establishes a visual hierarchy for rendering prose on the page by providing visual punctuation and graphic accents that help readers understand relations between prose and pictures, headlines and subordinate blocks of text.' Every typographic layout needs the essential element of hierarchy. Hierarchy defines how to read through content. It

shows the user were to start reading and where to read through. It differentiates headers from body text. (Smashing ebook Series: #6, 2011, p. 25).

As reported by Walter (2010) in his online article *Emotional Interface Design*, a hierarchy of needs for UX design emphasises that 'the interfaces we design must first be functional – they need to solve a problem for us. Next, they need to be reliable – no fail whales please. Our interfaces need to be usable – easy to learn, easy to use, and easy to remember.' According to Casario (2012, p. 90) breaking the page content into different sizes of text for the title, headers, sub-headers, and body copy creates an important hierarchy to the information on the page, guiding the reader's eye through the content. This helps the reader scan the content and drill down into it.

2.5.5 Multi-column Blocks of Text

To improve readability it is generally recommended to divide blocks of text into multiple columns, Casario (2012, p. 93) states that 'a paragraph of text that stretches margin to margin of the full width of a browser window is harder to read than one that is confined to a narrower area'. Magazine and book columns are narrow for physiological reasons: at normal reading distances the eye's span of acute focus is only about three inches wide, so designers try to keep dense passages of text in columns not much wider than that comfortable eye span (Lynch and Horton, 2009, p. 11).

2.5.6 Grid & Composition

Grids are systems of horizontal and vertical lines used as a visual guide for lining up text and images, and enable the layout of columns, rows, and margins.
Every time you declare margins, padding, borders, make sure the sum of the top and bottom values is a multiple of the base unit. Especially note that margin collapsing can disrupt your vertical rhythms, so you need to compose your margins carefully based on the margins applied to the previous element (Clark, Studholme, Murphy and Manian, 2012, p. 415). In his book *Grid Systems in Graphic Design*, Müller-Brockmann referred to this process as 'creating a typographic space on the page,' tailoring the proportions of the grid to the size of a blank piece of paper but as Marcotte (2010) points out, web designer are missing one key component: the presence of an actual page. 'Our canvas, the browser window, can bend and flex to any shape or size, whether changed at the whim of the reader, or fixed by the phone or tablet they're using to view our content.' (Marcotte, 2010). As observed

by Clark, Studholme, Murphy and Manian (2012, p. 418), when setting the baseline grid manually designers need to account for the interactions of not just the current element but also the previous elements to which it has been applied and also need to account for margin collapsing especially if the larger margin is not a whole multiple of the vertical rhythm unit. This process of defining a baseline grid is much easier if designers set a grid image as a background for immediate visual verification.

2.6 TRADITIONAL TYPOGRAPHIC DETAILS

2.6.1 Introduction

This section discusses traditional typographic details such as drop caps, hanging punctuation and opentype features, outlining the suggested methods for implementing these typographic details as well as their importance in design. It attempts to determine the main issues that occur when implementing typographic design principles in responsive web, design and the most effective methods for resolving these issues

The importance of traditional typographic details like drop caps, hanging punctuation has long been recognised in print design but as stated by Smashing Magazines ebook #6 (2011, p. 98) 'handling these typographic details on the web brings new challenges and restrictions that need to be considered.' In this section we will consider such typographic considerations as drop caps, hanging punctuation, controlling quote glyphs and implementing opentype features.

One of the more recent trends in web design is the use of drop caps. Drop caps are a typographic technique that draws attention to the beginning of a paragraph of text by enlarging the first letter. Casario (2012, p. 82) states that when drop caps are used appropriately, they can be an elegant addition to a web design and help the reader visually pick out the beginning of an article or other body of text. Franz (2012) in her online article *Drop Caps: Historical Use And Current Best Practices With CSS* states 'drop caps on the Web don't add value in terms of usability or readability—and they are hard for Web developers to control, often rendering differently across browsers.'

Hanging punctuation refers to moving punctuation such as quotation marks or bullets into the margin of a document so that the first line of text is aligned with the rest of the text in a paragraph or similar. 'Hanging punctuation ensures that all text within a paragraph is left aligned, even the first line' (Casario, 2012, p. 84). The use

of hanging punctuation creates neater, more readable content as stated by Casario (2012, p. 84) using hanging punctuation can increase the readability of the text by maintaining the same alignment of each line in a block of text, making it easier for readers to scan down the lines. Hanging punctuation also allows stylistic liberty to be applied to the punctuation (such as increasing the size), which wouldn't be possible if the punctuation were aligned with the paragraph. It is useful for pull quotes (for quotes pulled from a longer body of text to draw the readers interest into the longer text), bulleted lists, or similar (Casario, 2012, p. 84). In CSS the 'hanging-punctuation' property aims at giving web designers more control over typography on the web. The idea behind hanging punctuation is to put some punctuation characters from start (or to a lesser extend at the end) of text elements "outside" of the box in order to preserve the reading flow. (Coyier, 2013).

Clark, Studholme, Murphy and Manian (2012, p. 430) outline the values this property can take:

- NONE: No characters can hang.
- FIRST: An opening bracket or quote at the start of the first formatted line of an element hangs.
- LAST: A closing bracket or quote at the end of the last formatted line of an element hangs.
- FORCE-END: A stop or comma at the end of a line hangs.
- ALLOW-END: A stop or comma at the end of a line hangs if it does not otherwise fit prior to justification.

By default, HTML sets quotation marks as 'prime marks' for single quotes or as 'double prime marks' for double quotes rather than true quotation marks. The single and double prime characters are not traditionally intended for use as quotation marks but are a symbol or feet and inches. To achieve true quotation marks and apostrophes character entities are used such as “ for a left double quotation mark and ” for a right double quotation mark. Franz, (2012, p. 130) recommends using syntax to create 'curly' quotes. A quote glyph can also be used as a decorative element in web design. Using the 'quotes' property can set the glyph that will be used for opening and closing quotes for each level of quotes (outermost to innermost). Using the content property with open-quote or close-quote keywords, can set the quotes for each selector. Coyier (2013) outlines and explains the four values for the content property that relate to the quotes property 'open-quote, close-quote, no-open-quote, and no-close-quote. The first pair of

quotes in the value are the opening and closing quotes. The second pair are the opening and closing quotes for quotes nested one level deep within other quotes that also use the quotes property.'

2.6.2 Incorporating OpenType Features

The OpenType font format was designed with internal structures that allow a type designer to populate a font with alternate forms for certain characters. They were developed through a collaboration between Microsoft and Adobe. The OpenType format provides a lot of additional font features that are usually only available for use through print applications such Adobe Illustrator or Adobe InDesign. Smashing ebook #6 explains that opentype is based on the TrueType format, [opentype]… offers additional typographical features such as ligatures, fractions or context sensitive glyphs and the like. They warn however, that browser support of these features common in sophisticated layout and illustration programmes is still unsatisfactory (Smashing ebook #6, 2011, p. 191). Within CSS3 Fonts Module, these features are now exposed for web developers to use. When this is implemented, ligatures, swashes, small caps, and tabular figures can be used.

Opentypes features include superscripts and subscripts, ordinals and superiors. Felici (2012, p. 64) describes superscripts and subscripts as reduced-size letters and numerals used in mathematical and scientific notation, such as $E = MC^2$ and H_2O. He goes on to describe ordinals as alphabetic characters used for indicating numeric values such as 1^{st}. Opentype features also contain alternate numerals to standard numerals. Felici (2012, p. 63) explains that the standard numerals contained in most typefaces all sit on the baseline and all have the same width, called tabular lining numerals. He goes on to name the alternative forms available: proportional oldstyle, proportional lining and tabular oldstyle. Opentype features also include alternate ligatures. Felici (2012, p. 63) describes ligatures as 'fused characters designed to alleviate certain awkward character shape interactions and sometimes used for historical or linguistic reasons'. All text fonts include the common fl (looks like fl without ligatures) and fi (without ligatures looks like fi) ligatures.

Small caps are uppercase characters reduced to the same (or approximately the same) height as a typeface's x-height. True small caps are redrawn as a separate font and supplied as part of an expert set or as individual glyphs when using the OpenType format (Tselentis, 2012, p. 326). Felici (2012, p. 63) describes small caps as 'reduced-size capital letters used for setting certain kinds of type, including acronyms and

certain abbreviations', but he also warns against using 'fake' small caps: 'capital letters that have been electronically scaled down in size are ill proportioned in this role, so specifically designed small capitals should be used when available'.

2.6.3 Incorporating Hyphens, En Dashes and Em Dashes

Hyphens, en dashes and em dashes are all similar looking characters which all serve a different purpose. Franz (2012, p. 128) explains 'the en dash is used to indicate range' and gives the example 3–5 years whereas she explains 'the em dash is used to indicate a break in thought' or to create emphasis. Franz suggests using the character set – to implement an en dash into an HTML document and — to implement an em dash (Franz, 2012, p. 128).

A soft hyphen (represented in HTML entity as) is used to indicate to a browser where the word can be hyphenated. This is not a CSS property but it's currently the only way to implement hyphens that work across all browsers. Clark, Studholme, Murphy and Manian (2012, 428–9) suggest using the Sweet Justice Javascript library to resolve this. It allows users to drop the javascript onto any web page to create hyphenated text. Sweet Justice inserts the soft hyphen into the text of any element marked with the sweet-justice class, and turns on CSS text justification.

2.7 CSS (CASCADING STYLE SHEETS) AND JAVASCRIPT

2.7.1 Introduction

This section examines the web design languages CSS (Cascading Style Sheets) and JavaScript and discusses how recent developments in both languages have affected how typography can be implemented, outlining some new and useful elements in both languages that can improve typography in responsive design. The recent development of CSS3 and JavaScript has increased the typographic choices for web designers dramatically in the last three years. As well as affecting the aesthetics of web design, this has also indirectly affected search engine optimisation, download speeds and responsive design.

2.7.2 Cascading Style Sheets (CSS)

Cascading Style Sheets (often abbreviated css) are a standard created by the World Wide Web Consortium (w3c) to enhance html. Although not the only consideration, the main typographic concern for CSS is setting the font-family. When specifying a font family, Clark, Studholme, Murphy and Manian, (2012, p. 413) recommends setting a fallback generic font to ' ensure the text renders in a readable format when

our choice of font is unavailable'. This fallback font is usually referred to as a 'font stack', the most common being sans-serif and serif.

Media queries is a module added to CSS3. A media query consists of a media type and at least one expression that limits the style sheets' scope by using media features, such as width, height, and colour. Media queries let the presentation of content be tailored to a specific range of output devices without having to change the content itself. Unfortunately, in the current landscape of media query features, there is no way to know the difference between 16 device pixels on a crude LED billboard and 16 device pixels on a high-density mobile display (Sherman, online article, 2013)

The @font-face rule allows authors to specify online fonts to display text on their web pages. This change has revolutionised the implementation of typography within web designs, as Meyer, 2013 points out 'while there's no guarantee that every last user will see the font you want, this feature is very widely supported and (as of early 2013) gaining a lot of currency in web design' (Meyer, 2013, p. 7). In 2011, Joshua Johnson, suggested two free @font-face services to be used with the font-face rule, Google Web Fonts and Font Squirrel. These remain the 2 most popular free services for use with the @font-face rule.

2.7.3 JavaScript

There have been many developments in JavaScript, particularly in the JavaScript library jQuery which offer typographic solutions for designers and developers. JavaScript is also implemented with font kits such as TypeKit. This functions as JavaScript tells browsers to access the unique kit the designer has created. Since TypeKit's fonts are loaded via JavaScript, TypeKit offers tools to control the loading process, so delays are not as noticeable to the user (Smashing Magazine #6, 2011, p. 183). Unfortunately, JavaScript is known to be a resource heavy technology (Frain, 2012, p. 97) and may slow down the response time of a website. In 2011 Andreas Carlsson and Jaan Orvet recreated an opensource javascript solution called 'typesetter.js'. As Carlsson and Orvet explain in their online article The Future Of Screen Typography Is In Your Hands, the project had five clear goals: Correct micro-typography; Degrades so that devices without @font-face or JavaScript support are not negatively affected; OS independence; Browser independence and Correct markup (Carlsson and Orvet, 2012).

2.8 ANALYSIS OF LITERATURE

Although there is a lot of literature surrounding the subject of typography, the subject of web typography is very time-bound as it is an area which is changing rapidly. This mean that material can become irrelevant or even inaccurate very quickly. However, conclusions can be drawn from comparing the most recent research and the basic principles of typography have not changed.

2.9 CONCLUSION

The literature review reveals a need for and a lack of typographic principles being implemented into web design. The literature confirms the importance of the basic principles of typography such as emphasis, contrast, line height and line length, and laying out text in columns as well as the importance of traditional typographic details like drop caps, hanging punctuation, alternate numerals, small caps, opentype features and alternate ligatures. It is important to use scale and emphasis within typographic design using elements such as italics, font weight and colour. The importance of legibility and readability cannot be overstated when designing type. The factors which affect legibility are the back-lit environment, line height and line length, letter spacing (or kerning), word spacing, white space and line breaks, and hierarchy. The use of a grid system is recommended and can be implement to work as responsive design. Cascading Style Sheets (CSS) and JavaScript should used to incorporate typographic elements and ensure consistency across browsers and operating systems. However, as JavaScript is heavy and may increase download time, it should be used with caution.

CHAPTER 3 RESEARCH DESIGN

3.1 INTRODUCTION

This chapter identifies the approach taken to the research involved this thesis and defines the collection of the data that attempts to answer the research question. This study will use qualitative research methods as their is no predetermined information, therefore the issue must be explored using primary research, such as interviews, to determine what issues arise within the subject of web typography and how best to overcome them. This will provide a detailed, complex understanding of the subject and reveal what practical solutions are currently being undertaken by those in the field of web design in Ireland today.

As the primary research carried out in this thesis needs to be exploratory and does not have a predetermined conclusion qualitative research methods are used. Shank (2002, p. 5) defines qualitative research as a form of systematic empirical inquiry into meaning. By systematic the researched planned, ordered, and public, following rules, agreed upon by members of the qualitative research community. By empirical, the researcher meant that this type of inquiry is grounded in the world of experience. According to Crotty (1998, p. 3) there are four basic elements that create the framework of any research process:

- Epistemology: the theory of knowledge embedded in the theoretical perspective and thereby in the methodology.
- Theoretical perspective: the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.
- Methodology: the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.
- Methods: the techniques or procedures used to gather and analyse data related to some research question or hypothesis.

3.2 THEORETICAL PERSPECTIVE

Epistemology is one branch of philosophy dealing with the nature of knowledge and sources of knowledge. Crotty (1998) defines epistemology as 'the theory of knowledge embedded in the theoretical perspective and thereby in the methodology'. Crotty (1998, p. 9) cites three main epistemological stances for researchers:

objectivism; constructionism and subjectivism. He states constructionism research occurs when meaning only exists as a result of interaction with the realities of the world around us. This study adopts a constructionist view of knowledge creation, as the research is informed by the experience and knowledge gained from interviews with web designers based in Ireland who regularly work with web typography in a commercial environment.

After identifying the epistemology governing a qualitative research problem it is imperative to consider the theoretical perspective and the assumptions behind it. The theoretical perspective can be described as: 'The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria methods and linking the choice and use of methods to the desired outcomes.' (Crotty, 1998, p. 3). Theoretical perspective '… reaches into the assumptions about reality that we bring to our work. To ask about these assumptions is to ask about theoretical perspective' (Crotty, 1998, p. 2). Wisker (2008, p. 69) outlines theoretical perspectives on research design including positivism, interpretivism, constructivism, structuralism, post-structuralism and postmodernism.

3.3 RESEARCH METHODOLOGY

Methodology is the rationale supporting the choice of methods and is based on a researchers world-view (Wisker, 2008, p. 68). Gray (2004, p. 21) states that in terms of epistemology, interpretivism is closely related to constructivism which is echoed by Wisker (2008, p. 69) stating 'Constructivism is based on similar beliefs as interpretivism, believes that human beings construct knowledge and meaning form experience and from relationships between things, people and events. This is the approach taken in this study.

Wisker (2008, p. 68) outlines the two main paradigms of research: positivism and post-positivism and outlines the approaches and methods they involve. The research in this study uses a post-positivistic approach as this generates theories rather than tests hypothesis and produces qualitative data rather than quantitative data. 'Qualitative research is carried out when we wish to understand meaning, interpretation, and/or to look at, describe and understand experience, ideas, beliefs and values – intangibles such as these' (Wisker, 2008, p. 75).

3.4 RESEARCH METHODS

3.4.1. Introduction

As well as the secondary research of the literature review, two primary research methods were considered for this study: the interview method and the case study method. The case study method would involve the design of web pages illustrating results developed from varying theories. The primary research of interviewing aims to gather information on issues surrounding web typography which web designers in Ireland have experienced and methods used to overcome these problems. Both research methods have the ability to deliver the type of information sought, but the advantages and disadvantages of each must be determined, as well as the feasibility of evaluating the success of a case study.

3.4.2 Case Study Method

According to Yin (2003), there are three different types of case study which cater for many types of research question:

- Exploratory – this method acts as a pilot to other studies or research questions
- Descriptive – this method provides narrative accounts
- Explanatory – this method is concerned with testing theories.

The exploratory model is chosen for this study to examine the practical capabilities of both the primary and secondary research and develop guidelines for improving web typography. There are many advantages in using the case study method: a case study can assist the understanding of a phenomenon within its real-life context that would otherwise be enigmatic or confusing and it offers great potential for revealing the richness, holism and complexity in events (Yin, 2003). As the feasibility of the recommendations determined from the literature review should to be examined a case study, in the form of designing web pages that adhere to these standards would be useful to the study. However the main disadvantage of using the case study method for this project is the feasibility of evaluating the success of the case study. This would involved an extensive analysis of the designed web pages using various platforms, operating systems and browsers. As the case study is too limited to be considered as the only primary research method the scope of time involved in the analysis alone is not practical for this study.

3.4.3 Semi-Structured Interviews

This study requires in-depth research into the first-hand experiences of web designers in Ireland to determine not only what issues are most common but also

the practicalities of overcoming these issues. A semi-structured interview techniques is chosen as according to Wisker (2008, p. 194–5) 'Semi-structured, open-ended interviews manage to both the need for comparable responses […] and the need for the interview to be developed by the conversation between interviewer and interviewee.' ONe of the main advantages of this method is that semi-structured interviews allow all participants to be asked the same questions within a flexible framework (Dearnley, 2005, p. 22). This is ideal for this study as some of the respondents may answer a question with an answer that needs further explanation. One of the disadvantages of using interview lies in the respondents' knowledge of the subject in hand as well as their position in the company and interest in the topic. This disadvantage was overcome by targeting respondents in a senior position working for or owning a award wining design agency.

3.5 ETHICS

When conducting interviews, ethical issues are one of the main concerns. Confidentiality must be ensured. Respondents 'should not be harmed or damaged in any way by the research […] It is also important that interviews are not used as a devious means of selling something to the respondent' (Gray, 2004 p. 235). Gray outlines some of the ethical issues which should be stated at the initial access stage to assure the respondent.

- Informed Consent
- Aim of the research
- Who will be undertaking it
- Who is being asked to participate
- What kind of information is being sought
- How much of the participants time is required
- That participation is voluntary
- Who will have access to that data once it is collected
- How anonymity of respondents will be preserved

When an interview has been completed and is considered a good interview, the respondents ought to know more about themselves and their situation. However, the researcher must remember that the purpose of research is to collect data and not to change the respondents or their opinions (Gray, 2004, p. 235). For the purpose of this study all respondents were made aware of the nature of the study and, although offered, none of the respondents required anonymity. Respondents were also briefed on who would have access to the data collected.

3.6 SCOPE

This study aims to narrow it's scope to the main individuals affected by this issue who are web designers and developers, UI and UX designers in Ireland. Initially,the research included designers with varying levels of experience in the web design field as this was to determine the level of importance of typographic web design in Ireland today. However, after the initially interviews were unsuccessful and respondents often could not answer the questions satisfactorily due to a lack of experience, knowledge or interest in the subject, the study was changed to target designers in a senior or more prominent role in award-winning agencies. Many of the agencies had been awarded multiple design awards.

The issue of the location of the designer was also a factor. Although the research question is a global issue, this study is concerned with the practice of typography within the republic of Ireland. Containing the study in this manner ensured that the research was exact and relevant for designers working within the Republic of Ireland, and will consider factors such as broadband speeds and financial issues which may be more or less of a concern in other countries.

3.7 SUMMARY OF THE RESEARCH METHODS

This section discussed the varying epistemological stances on the theory of knowledge and examined a number of theoretical perspectives, the study is shown to adopt a constructionist world-view. This section also outlined the advantages and disadvantages of the case study method and the reasoning behind deciding against this method. This section has established that semi-structured interviews are used by the study as a research instrument and as a means to collect data. It has outlined who the interviews are aimed at and why this has be chosen as well as the importance of the location of these respondents.

CHAPTER 4. PRESENTATION AND ANALYSIS OF PRIMARY DATA

4.1 INTRODUCTION

The literature review outlined the existing knowledge that addresses the research question. The literature review also identified a need for more up-to-date and 'real world' research to discover how typography was presently used in web design by Irish web designers. This issue indicated that a qualitative interview with a semi-structured approach was the most appropriate research technique to provide information that would address this issue. Therefore a series of questions were devised to address this issue. A detailed list of the interviewees, their experience as a designer or developer and the interview transcripts are included in appendix B.

The interviews conducted were necessary to provide the study with a clearer impression of the what issues web designers in Ireland face when implementing typographic design in their projects. It also served to revealed the level of interest the respondents have in web typography as well as their knowledge of the topic.

4.2 RESEARCH METHOD – INTERVIEWS

The interviews were conducted to establish some of the current practice strategy of Irish web designers, as well as their level of interest and knowledge in web typography. The interviews established the professional background of the respondents as well as the level formal education, if any, they received surrounding the topic of typography. As expected the only respondents who received a formal education in the topic of typography where those who completed a formal education in graphic design, rather than computer programming or web design. A very high level of interest in typography was reported by all respondents, and all acknowledged the importance of typography in their web design projects. This is reflective of the literature review which generally reports an increased level of interest in the topic of typography.

The interviews also established the most common problems which occur when implementing typographical design online and what designers see as the limitations they have confronted when implementing text content in their web design projects. Overwhelmingly, although not surprisingly, the respondents cited cross-browser compatibility are the main issues affecting their typographic designs, which is also indicated in the literature review. The cost of font services was also an issue but

to a lesser extent and the speed of font downloads was also mentioned by one respondent.

The interviews also addressed the issue of implementing typographic details in web design projects to determine the level of importance this held for each designer. Many of the designers felt details such as drop caps, hanging punctuation and opentype features are more of a print consideration and quite difficult to implement in a responsive website.

The interview included the topic of typographic grids to determine if the respondents used grids in their web designs. Only one of the correspondents stated no, the rest all used grids and considered it an important factor in their design work. Many of the designers also used CMS as part of their design system, some wholly using CMS. Only one of the designers still considered WordPress as only a 'blog tool' but this respondent still used another CMS system for their designs.

The issue of finance was also briefly discuss and what affect this has on typographic choices in their designs. The majority of the respondents stated cost as a factor although services such as Google fonts were mentioned as a 'word around' for over-coming cost issues with fonts. Brand identity also called for some specific font used which could impact on cost but most respondents stated this could also easily be overcome.

The issue of search engine optimisation was also discuss and whether this impacted on the design decisions. However this question was not understood by most of the respondents, in fact only one answered completely, which suggests the question was very badly worded.

4.3 ANALYSIS OF INTERVIEW QUESTIONS

Question 1. Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.

Purpose of question

The purpose of this question is administrative but also necessary to determine the experience level of the respondent and their position in their company.

Key points

Whether a designer is working freelance, in-house or agency based may have an effect on their work, it is important to establish this as well as the level of experience of each respondent. The level of experience and training varies greatly in the field of web design. Some designers start as computer programmers or developers and proceed to a more design-led role while many start as graphic designers and expand into web design with little or no formal training in web design specifically.

Conclusions drawn

Most of the respondents are experienced designers with only two of the nine respondents having less than six years experience. Job titles varied widely, including creative directors, senior designers and junior web designer. The type of the job position were either freelance designers or working in an agency, none of the respondents were in-house designers.

Question 2. Did you study typography within a formal educational environment?

Purpose of question

This question will determine the level of formal education on typography the interviewee has received either in Ireland or abroad.

Key points

The level of formal education on typography can vary greatly in the field of web design in Ireland, often dependent on the background of the interviewee. Respondents from a graphic design background are more likely to have studied typography at some level whereas a respondent with a background in computer programming is not. This may determine how important the interviewee considers typography in design.

Conclusions drawn

Only four of the nine respondents answered yes to this questions, at least two of which came from a graphic design background.

Question 3. How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?

Purpose of question

The purpose of this question is to determine whether the respondent has increased their interest in the typographic elements within their design over the years as the possibilities of incorporating typography in web design has increased.

Key points

Developments in CSS, JavaScript and font kits has widen the possibilities for incorporating typographic principles in web design. It is important that this study gauges whether an interviewee has increased their interest in the subject as the more options for implementing typographic elements in web design becomes possible.

Conclusions drawn

All respondents considered typography a very important element to their design process with nearly all stating it had become a more important factor in the past few years. As all the designers are either award-winning designers or working for award-wining agencies this highlights the importance of typography in web design.

Question 4. How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?

Purpose of question

The purpose of this question is to determine whether the respondent has an interest in improving their typographic details and whether this is a consideration already being implemented by the respondent.

Key points

This study determines whether typographical details are being implemented on web design projects and how this can be improved. It is imperative to this study to determine how important Irish designer's today consider these factors as this will determine how to what extent a designer will go to implementing recommendations determined by the study.

Conclusions drawn

The responses to this question varied widely. Some of the interviewees claimed typographic details were hugely important and others stated it had little or no importance. Although all agree that typography has a strong role in their web

design projects, details such as drop caps are of a much lesser importance and may not be considered feasible in a responsive environment.

Question 5. What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?

Purpose of question

The purpose of this question is to determine what the respondent sees as their biggest challenge when implementing typographic elements into their web design projects and what resolutions they have used to resolve these issues. A lack of flexibility, choice and browser compatibility are common issues when considering web typography and this study needs to determine what today's designers are finding the greatest limitations to their designs.

Key points

Different designers often have different opinions on what is most problematic for their designs. Factors such as finance, location, experience and the type of projects undertaken can all affect a designer's typographic choices. It is important to this study to determine what are the biggest limitations for Irish designers today. An insight may be gained by their resolutions to these issues.

Conclusions drawn

A lack of consistency across browsers and platforms was cited by most as the biggest issue with web typography. Although only one respondent suggested a work-around for this issue, that is to be expected for this problem as it is a constant issue for web designers today and many different solutions are used on every project.

Question 6. Do you use typographic grids for your web design projects?

Purpose of question

The purpose of this question is to determine whether the interviewee is using typographic grid layouts in their web projects. Although popular in print design, typographic grids can be neglected in web design.

Key points

Determining whether a designer uses a grid layout in their web design projects is important is it will reflect on their interest in typographic web design and their

level of experience and ability. A designer using a grid system is more likely to be interested in implementing typographic principles in their design than one who does not as the two are almost physically tied to one another.

Conclusions drawn

With only one respondent answering no to this question the conclusion can be drawn that typographic grids are considered standard in responsive design. This shows a strong interest in both typographic design and the willingness to create responsive web projects.

Question 7. Do many of your web design projects use traditional 'web safe fonts' such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?

Purpose of question

The purpose of this question is to determine whether web safe fonts are still used and are considered an option by web designers.

Key points

Many web designers will incorporate web safe fonts in their designs for body text or footers. It is important that this study determines how important web safe fonts are to designers today and whether they have been removed from the design process, are implemented along with newer sources or are still used alone in projects without the inclusion of new font types.

Conclusions drawn

All the respondents answered yes to this question to some degree. A large portion of the designers only use 'web safe fonts' for body text or footers, using other resources for headers and decorative text.

Question 8. Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?

Purpose of question

The purpose of this question is to determine what resources are most commonly being used by Irish designers today and what factors, such as cost, ease of use and font quality, affected this decision.

Key points

There are many typographic options available to those involved in web design. These solutions have a variety of advantages and disadvantages that can surround financial needs, typefaces required and the ease of implementation and download times. This study must determine what factors are most affecting Irish designers to day before it can draw conclusions and make recommendations.

Conclusions drawn

A large portion of the respondents state cost to be an issue, but most use both free and subscripted to font services. Font download speeds was also mentioned as an issue. Only one respondent reported using only the free service of Google fonts.

Question 9. Has cost ever affected the typographic choices of a web design project?

Purpose of question

The purpose of this question is to determine whether the implementation of typography within web design is often affected by cost, and, if so, which designers are most affected by this i.e. freelance designers, agency based designers or in-house designers.

Key points

Cost consideration can be a large factor in web design, both for in-house designers and freelance designers. Determining whether cost has an effect on typographic design will reveal if this is a restrictive factor for designers or if the availability of free resources, like Google Fonts, provides a sufficient service to rule out the need for considering cost as a factor.

Conclusions drawn

Only three of the respondents felt that cost was not an issue, one of who felt it could be easily overcome by using free font services. This would lead to the conclusion that, although the price of font subscriptions are reasonably low, they are still a large consideration for designers and do affect their typographic decisions.

Question 10. How many of your web design projects result in responsive design?

Purpose of question

The purpose of this question is to determine if the interviewee is involved in responsive web design and gauge their level of interest in the matter.

Key points

Responsive web design is a relatively new term and, although usually deem important in web design, is not a consideration for every designer. This will have an impact on how they use typography within their designs.

Conclusions drawn

All nine respondents claim to have a very high ratio of responsive designs. This highlights a recognition of the importance of responsive web design in Irish design agencies.

Question 11. Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?

Purpose of question

The purpose of this question is to gauge the level of awareness of the interviewee when considering developments in CSS and JavaScript and how important these developments have been in their design projects.

Key points

Developments in CSS have changed how many designers implement typographic elements within their web design projects. The is a lesser awareness of the impact of developments within JavaScript on typographic design. How aware an interviewee may be of these developments and the frequency of their use may reflect the level of experience and knowledge of the interviewee as well as how important they consider typography in their projects.

Conclusions drawn

Only designer responded negatively stating that speed would be a consideration when using JavaScript. While the rest of the respondents positively regarding these scripts, some only see it as a last step when there is a design requirement.

Question 12. Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?

Purpose of question

The purpose of this question is to determine whether designers are using Content Management Systems for their design projects and if this has an affect on their typographic choices.

Key points

The development of Content Management Systems such as WordPress and Joomla, have meant that the use of CMS in commercial design has become more acceptable and commonplace. As CMS design has a very different system for implementing web typography it is important to ascertain whether designers are using CMS and what affect this is having on their typographic decisions.

Conclusions drawn

All respondents use CMS for their web projects, and all have stated that it has not negatively affected their typographic choices for the designs. This reflects the large increased acceptance of the use of CMS in professional web design. Only one designer referred to WordPress as a 'blogging tool' and this designer also used CMS, although not WordPress.

QUESTION 13. What do you use to define type size?

Purpose of question

The purpose of this question is to determine whether the respondent favours the use of EMS (or REMS) or pixels when defining typographic elements in their designs.

Key points

The use of EMS (or REMS) and pixels in web design has become more important as the need for responsive web design becomes a more frequent consideration. However, as the literature review has revealed, the use of EMS, REMS and pixels is a disputed issue.

Conclusions drawn

The large majority of the responses chose pixels with a combination of EMS. This shows a leaning towards change towards EMS from the traditional pixels, although as the literature review reveals this is a contested issue in the web design world.

Question 14. Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.

Purpose of question

The purpose of this question is to determine whether specific typefaces are regularly required on web projects, which may call for the use of financed font kits such as Type Kit, or if alternative solutions, such as finding a very similar free font can be used.

Key points

As site owners become more aware of the importance of their online presence and therefore their online brand, it is important to this study to determine whether typographic issues are also becoming a more important consideration when implementing online branding.

Conclusions drawn

Most of the respondents required a specific typeface to satisfy the client's brand guidelines. This would imply that specific fonts will have to be used on web projects which will usually have a financial effect.

Question 15. Do you use typography to improve SEO (Search Engine Optimisation)? If so please explain.?

Purpose of question

The purpose of this question is to determine whether the respondent is aware of how typography can affect Search Engine Optimisation and whether it is a factor that affects their design considerations.

Key points

Where previously designers had to use images to depict a variety of fonts needed, such as on logos etc …, new typographic solutions mean that designers have the scope to use text rather than images which is readable by search engines, such as Google, and therefore improve their search engine ranking. This study must determine whether the respondents are aware of this and whether it is used in their web design projects.

Conclusions drawn

The response to this question was overwhelmingly negative which leads me to the conclusion that the question was not explained well enough and may have been misleading to the respondents. Only one designer mentioned improving SEO by using typography in place of an image which cannot be read by search engines such as Google.

Question 16. Do typeface copyright issues affect typographic decisions for your web design projects?

Purpose of question

The purpose of this question is to determine whether the respondent is considering copyright issues and what level of importance this holds for their typographic decisions.

Key points

Copyright issues have long been an issue for web typography. Whether this is still a consideration for designers will depend on the resources used to implement typographic details on their web projects.

Conclusions drawn

Over half of the designer stated that copyright issues could affect the typography of a design in theory but most see this as a very small issue which is easily overcome due to the availability of font kits and font services.

Question 17. Do you tailor your web design to target specific audiences? Does this affect typographic decisions?

Purpose of question

The purpose of this question is to determine whether the respondent considers the reader, as opposed to the client, when implementing typographic details in their designs.

Key points

Considering the reader and their specific needs for legibility taking into consideration factors such as the average age of the reader for example, will play a major component in typographic decisions made by the designer. Is it important

that this study determines whether this is a factor that Irish designer take into consideration.

Conclusions drawn

All respondents answered yes to this questions, illustrating the level of importance web designers put on the considerations of their readers, which in turn reflects on the importance of web typography and issues such as sizing and readability to designers.

Question 18. What would you regard as the most important steps designers should take to improve web typography?

Purpose of question

The purpose of this question is to determine what the respondent considers the best method of improving web typography. The respondent's answer to this questions should reveal not only what they see as problem areas and solutions to these problem areas, but also what level they consider web typography to be at in general.

Key points

Improving web typography is a fundamental part of this study. This requires determining what today's designs see as the main issues are when taking typographic solutions into consideration as well as what they see as the solutions. Responsive web design and the influx of new typographic solutions will have varying degrees of importance to designers.

Conclusions drawn

The responses to this question were varied and very interesting. Some specified cross compatibility testing as the most important step to improving typography while many suggested blogs and articles such as Smashing Magazine. Further education seems to be a underlying factor in most of the suggestions.

4.4 SUMMARY

Much of the interview data corresponds with the research from literature review. This demonstrates that Irish award-winning web designers' view of typographic design is in line with common global opinion. However, the process of developing the interview method also revealed a lack of knowledge surrounding the subject of typographic web design as well as a lack of educational opportunities for

web designers in general on this subject. The interviews conducted originally targeted web designers in general, but the responses from these designers exhibited a general lack of understanding of the subject, hence the targeted respondents where changed to only award-winning designers. It is possible that web designers in Ireland need to improve their knowledge on the subject by following trends, blogs and online articles which have the most recent advancements and opinions on the subject, as was suggested by more than one of the interview respondents. Nevertheless, the increased interest in online typography demonstrated by the interview data is in direct correlation with the insights gained from the literature review, which reflects positively on the subject of this thesis. The issue of cost is less of a consideration than previously conceived. The largest issues which arose are in relation to the responsiveness of the design and cross browser compatibility as well as download speed of fonts. This needs to be addressed in the recommendations as the percentage of the respondents' web projects which resulted in responsive web design was extremely high, ranging from 60–100 per cent.

The primary research also revealed that respondents also considered the demographic of their online readers. This leads the study to see a need to address this issue further and define principles surrounding hierarchy, emphasis, contrast and consistent font size. This topic was deemed much higher in importance than incorporating typographic details such as drop caps and opentype features for Irish web designer.

Most of the respondents use languages such as CSS and JavaScript when incorporating typography in their web design projects, however issues around download speeds were mentioned as a consideration, especially with JavaScript and the JavaScript library jQuery. These issues will be addressed in the next section which contains the conclusions and recommendations.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter attempts to combine and analyse the data gathered from the literature review and the primary research, conducted in the form of interviews, and to gather recommendations and conclusions from this data. The research presented in this thesis attempts to determine the main issues that occur when implementing typographic design principles in web design and the most effective methods for resolving these issues. These issues and methods are addressed below. Suggestions for expansion of this topic and possible further research are also outlined.

5.2 CONCLUSIONS

The most important points for considerations from both the primary and secondary research which need to be addresses are are summarised and outlined to form an outline for best practice for implementing typographic elements in responsive web design projects. The main considerations are improving consistency throughout browsers and platforms, testing design projects throughout the design process to ensure responsiveness and considering the flow of the design in general, for instance when choosing units of measurements for type and line height. The use of grids and the composition, including hierarchy, and the layout of text content using columns to improve both the responsiveness of the design and the readability of the content is an essential aspect to the recommendations. The readability is also affected by the legibility of the type which includes the choice of typeface, font size, line height and line spacing.

The use of CSS and JavaScript will also be addressed as these are unavoidable tools of typographic web design. Recommendations for both will be included, outlining the correct use of the @font-face rule and considering the download speeds of all scripts and their affect on the usability of the end product.

5.3 RECOMMENDATIONS

This section outlines the important elements determined from the primary and secondary research which this study has determined need to be addressed to improve typography in web design.

As both the literature review and the primary research reveal, when making typographic decisions in web design it is necessary to consider not only the

demographic of the online reader but also the way the individual will read. As Laura Franz points out, there are three ways of reading: casually, scanning with purpose or in an engaged manner (Franz, 2012, p. 2). To improve typographic design the designer must considered what method their reader will use for each content type and design accordingly. When scanning with purpose, a reader needs a left line down to which to scan. They need words set in a font they can read easily and quickly. This will ensure the reader can find what they require easily and help their navigation through the website. The information hierarchy must be visually separate and clear. When engaged in casual or sustained reading, a reader needs to feel comfortable. If the font is difficult to read it will discourage such readers from persisting with the content. These readers need a comfortable line length, so they don't get fatigued, and a generous line height to promote horizontal motion. A good system of hierarchy will help these readers by making the text more manageable and provide readers with entry and exit points for each block of text. Determining the manner of online reading will assist the designer make appropriate choices when considering typographic elements such as hierarchy, line height,

The research highlights legibility and readability as the main considerations of typographic design, with the consistency of these elements in responsive design as an additional component which needs to be examined. Recommendations for these three areas are considered below.

Choosing the correct fonts for the design project is the most important step in creating legible text, by following the points below a designer can improve the legibility of their content:

» Choose typefaces with conventional letterforms. Letterforms composed of unique shapes, artistic deformations, excessive ornamentation or other novel design elements cause the reader to have to process what they are looking at before absorbing the text.
» Choose typefaces with generous spacing. Generous spacing allows the eyes to proceed as fast as the cognitive skills of the reader will permit. Avoid tight tracking as it causes the eye to fill in visual gaps between the various shapes that make up different letterforms, thus slowing down the time it takes to both recognise letterforms and word and sentence structures.
» Reading type (12 to 16px) is easier if the font has the following characteristics: a generous x-height; open apertures; prominent ascenders and descenders; slightly loose letter spacing and discernible terminals.

» Choose a font size which is practical for body text, usually between 12 and 15 points, quite large compared to printed material.
» Ensure a suitable line height is entered into the font syntax. A suitable font for both text would be 150% of the font size.

The readability of the content is determined by a combination of the basic legibility of the typeface and how the text is set.

» Choose typefaces that were designed for the purpose you are using them for (display fonts for headlines, body copy typefaces for body copy, etc.). Avoid using uppercase or small caps on large blocks of body text as lowercase text is more distinctive.
» Align text to right ragged for comfortable word spacing online to avoid rivers. 'Rivers' of white through a block of text will cause the reader to lose the natural flow of the text as the eye has to make various leaps and jumps to complete words and sentences.
» Ensure the line height is greater than the point size of your typeface for multi-line texts. If the lines are too close together, it's difficult for the eye to track across a line of text.
» Use the white space appropriately. In content-heavy layouts, spacing contributes to the readability of content. White space helps to offset large amounts of text and helps the user's eyes flow through the text. It also provides separation between elements in the layout, including graphics and text.

Regular typographical hierarchy creates a balance between the contrast and consistency of a web design. Using the 'h' tag correctly will designate a hierarchy of headline importance, so that both human readers and automated search engines can look at a document and easily determine its information structure. Designers should also use font weight, size and the font case to indicate hierarchy. Incorporating the correct font from a typeface, such as a display or caption font, where appropriate will ensure legibility.

Contrast is the core factor in whether or not text is easy to read. Good contrasts will make text easy on the eyes, easy to scan quickly, and overall more readable. On the other hand, poor contrast will force the user to squint and make reading the body text almost painful, not to mention a lot slower. Ideally, designers should use black text on a white, or nearly white, background to ensure legibility.

The primary research demonstrates that font licensing is not a huge concern for most Irish designers as cheap or free alternatives can easily be found. However, it is still a consideration as designers interviewed also claimed that financial issues still affected their typographical decisions. Ralf Herrmann has a list of commercial foundries that offer web fonts for purchase at http://www.webfonts.info/node/393 and the FontFont Library (www.fontfont.com/) also opened up its catalogue for use as web fonts. Fonts are downloadable and available for use after paying a one-time licence fee.

Although not considered a concern by many of the interview respondents, the secondary research provides enough justification to include traditional typographic details in the study's recommendations. Character entities should be included to implement typographic details such typography quotes (or 'curly' quotes) instead of the prime and double prime symbols. A list of these character entities can be found at http://www.w3schools.com/tags/ref_symbols.asp and should always be used for punctuation, en-dashes, em-dashes, ellipsis and ampersands.

Marcotte stating that fluid grids, flexible images, and media queries are the three technical ingredients for responsive web design. As this study is only interested in the typographic element of web design only fluid grids and media queries were examined. The importance of designing using grids was reiterated by both the primary and secondary research. As there is tendency towards an open source attitude among web designers and developers there are many free sources which provide designers with responsive grid templates, such as http://www.responsivegridsystem.com/. Using these templates will ensure designers can preview their designs simply by resizing their browser window and adjust typographic elements accordingly. Media queries are an important part of responsive design, as they allow you to write styles that respond to changes in factors such as screen size or orientation. Media queries are not new to CSS but an extension of the existing media declarations. Through media declarations, CSS allows the designer to filter style application by media type using media features useful for responsive design such as width, height, device-width, device-height, orientation, aspect-ratio, device-aspect ratio, and grid. Designers can use media queries to adapt a layout to the browser's viewport size and therefore easily accommodate a wider range of platforms.

Marcotte also states that designers can achieve responsive designs by 'establishing constraints: and set type in pixels, or create fixed-width layouts that assume a

minimum screen resolution. However the issue of using pixels over EMS or REMS remains disputed both in the primary and secondary research, and it is not included in the recommendations of this study.

HTML, Cascading Style Sheets (CSS) and JavaScript should be used appropriately to incorporate typographic elements and ensure consistency across browsers and operating systems. However, as JavaScript is heavy and may increase download time, it should be used with caution. Most browsers now recognise the @font-face tag in CSS. This tag links to fonts, retrieves them and displays them in a website. FontSquirrel (www.fontsquirrel.com) has a @font-face generator that automatically converts uploaded fonts into all the supported web font formats. It is the designers responsibility to ensure they have permission to use the font as a web font before implementing, however all fonts come with a file containing the license agreement, this licensing information should be kept for each font.

Choosing the right font formats is essential to ensure consistency in typographic design. There are four font formats which must be chosen to ensure functionality. The TTF is for most browsers. The EOT is for Internet Explorer. The WOFF is the emerging standard and the SVG is for iPhones and iPads. To safeguard against the possible failure of all implemented font resources such as TypeKit or Google Fonts, always choose a 'web safe' font as the universal font for each web project with a fallback typeface such as serif or san serif as appropriate to each design. A font stack offers the browser a second option in case the first option fails. An asterisk indicates a 'universal selector' which affects all the text. Below is an example:

```
*{
    font-family: Georgia, serif;
}
```

5.4 SUMMARY

The research conducted for this thesis reveals both an interest in, and the importance of considering the demographic of online readers and, equally important, the process of online reading. This detail must take the readability and legibility of the web content into account. Readability can be improved by using hierarchy, and paying greater attention to line length and height while legibility should take the choice of typeface used into consideration. Web designers need to consider not only the demographic of the online reader but also the way the individual will read when making typographic decisions in web design it is necessary. This is evident in

both the literature review and the primary research, with an emphasis on legibility and readability as the main considerations of typographic design. These factors are mostly concerned with the choice of fonts line height and line length, alignment and creating a suitable hierarchy for the content. A clear hierarchy creates a balance between the contrast and consistency of the design.

This study recommends a concentration on traditional typographic details. Although traditional typographic details are regarded as less important by interview respondents, it is clear from the literature review that attending to these details will improve the general appearance of the design. The main concern of the respondents was in regard to the consistency of their designs when creating responsive designs. To guarantee the responsiveness of the design, web languages such as HTML and CSS and JavaScript as well as fluid grids should be applied in the design process. These include the use of media queries, the @font-face rule as well as JavaScript solutions such as typesetter.js, lettering.js or fittext.js. This study recommends the use of Font Squirrel for use with the @font-face rule.

Although there is extensive text available both online and off on the topic of web typography, there are some points which remain disputed, such as the use of EMS or REMS over pixels for responsive design. As this is a field which is a very recent development and liable to change very rapidly in the coming years it is important that the study recognises that, although there are many authors and bloggers who are very knowledgeable about the topic, there is a lack of certainty when presenting principles for responsive design.

BIBLIOGRAPHY

BOOKS

Bosler, D., 2012. *Mastering Type: The Essential Guide to Typography for Print and Web Design*, HOW Books, Ohio.

Bringhurst, R., 2012. *The Elements of Typographic Style*, 4th edition, Hartley & Marks, Vancover.

Carter, R., Day, B., and Meggs, P., 2011. *Typographic Design: Form and Communication*, Wiley, New Jersey.

Casario, M. et el, 2012. *CSS3 Solutions: Essential Techniques for CSS3 Developers*, Apress, New York.

Clark, R., Studholme, O., Murphy, C., and Manian, D., 2012. *Beginning HTML5 and CSS3*, Apress, New York.

Crotty, M., 1998. *The foundations of social research: Meaning and perspective in the research process*, SAGE Publications, London.

Felici, J., 2012. *The complete manual of typography: a guide to setting perfect type*, Adobe Press, California.

Frain, B., 2012. *Responsive Web Design with HTML5 and CSS3*, Packt Publishing, Birmingham.

Franz, L., 2012. *Typographic Web Design: How to think like a typographer in HTML and CSS*, Wiley, New Jersey.

Gray, D. E., 2004. *Doing Research in the Real World*, SAGE Publications, London.

Green, T., and Clawson, M., 2012. Foundation Adobe Edge Animate: for HTML5, CSS3, and JavaScript Development, Apress, New York.

Haley, A., Poulin, R., Tselentis, J., Seddon, T., Leonidas, G., Saltz, I., Henderson, K., and Alterman, T., 2012. *Typography Referenced*, Rockport Publishers, Massachusetts.

Helfand, J., 2001. *Screen*, Princeton Architectural Press, New York.

Lynch, P.J., Horton, S., 2009. *Web Style Guide*, 3rd edition, Yale University Press, London.

Eric A. Meyer, 2013. *CSS Fonts*, O'Reilly Media: California.

Rabinowitz, T., (2006) *Exploring Typography*, Cengage Learning, Connecticut.

Schriver, K. A., 1997. *Dynamics in document design*. John Wiley & Sons, New York.

Shank, G., 2002. *Qualitative Research: A Personal Skills Approach*, Merrill Prentice Hall, New Jersey.

Smashing ebook, 2011. *Getting the Hang of Web Typography*, Smashing Media, Freiburg, Germany.

Teague, J. C., 2009. *Fluid web typography*, New Riders, California.

Wisker, G., 2008. *The postgraduate research handbook: succeed with your MA, MPhil, EdD and PhD*, 2nd edition, Palgrave Macmillan, Basingstoke.

ONLINE ARTICLES

Adobe Systems Incorporated (2010). *Type rendering on the web*. Retrieved from: http://blog.typekit.com/2010/10/05/type-rendering-on-the-web/ (Accessed: 1 July 2013)

Allsopp, P.J., 2000. *A Dao of Web Design*, an online article for A List Apart. Retrieved from http://alistapart.com/article/dao (Accessed: 1 August 2013)

Beaird, J., 2007. *The Principles of Beautiful Typography*. Retrieved from: http://www.sitepoint.com/principles-beautiful-typography/ (Accessed: 20 July 2013)

Brown, T., 2011. *More Meaningful Typography*, An *A List Apart* article. Retrieved from http://alistapart.com/article/more-meaningful-typography (Accessed: 23 July 2013)

Carlsson, A., and Orvet, J., 2012. *The Future Of Screen Typography Is In Your Hands*, An article from *Smashing Magazine*. Retrieved from: http://coding.smashingmagazine.com/2012/01/30/the-future-of-screen-typography-is-in-your-hands/ (Accessed: 27 July 2013)

Dagget, J., 2010. *Web Open Font Format for Firefox 3.6.* Retrieved from http://hacks.mozilla.org/2009/10/woff/ (Accessed: on 20 August 2013)

Franz, L., 2012. *Drop Caps: Historical Use And Current Best Practices With CSS*. Retrieved from http://www.smashingmagazine.com/2012/04/03/drop-caps-historical-use-and-current-best-practices/ (Accessed: 31 August 2013)

Haley, A., (2013). *It's About Legibility*. Retrieved from http://www.fonts.com/content/learning/fontology/level-4/fine-typography/legibility/ (Accessed: 2 August 2013)

Marcotte, E., 2010. *Responsive Web Design*, an online article for A List Apart. Retrieved from http://alistapart.com/article/responsive-web-design (Accessed: 2 August 2013).

Phinney, T., 2013. *Web Safe Fonts Are Dead*. Retrieved from http://www.howinteractivedesign.com/technology/web-safe-fonts-are-dead-font-guru-thomas-phinney-talks-web-fonts/ (Accessed: 22 August 2013)

Reichenstein, O. (2006) *Web design is 95% typography*. Retrieved from: http://ia.net/blog/the-web-is-all-about-typography-period/ (Accessed: 15 July 2013)

Roberts, H., 2011. *Technical Web Typography: Guidelines and Techniques*, an article from *Smashing Magazine*. Retrieved from http://coding.smashingmagazine.com/2011/03/14/technical-web-typography-guidelines-and-techniques/ (Accessed: 15 July 2013)

Santa Maria, J., 2009. *On Web Typography*, an *A List Apart* article. Retrieved from http://alistapart.com/article/on-web-typography (Accessed: 5 August 2013)

Sherman, N., 2013. *Responsive Typography is a Physical Discipline, But Your Computer Doesn't Know It (Yet)*, An *A List Apart* article. Retrieved from http://alistapart.com/column/responsive-typography-is-a-physical-discipline/ (Accessed: 4 August 2013)

Szafranek, K., 2009. *Font Smoothing Explained*. Retrieved from http://szafranek.net/works/articles/font-smoothing-explained/ (Accessed: 1 July 2012).

Walter, A., 2010. *Emotional Interface Design: The Gateway to Passionate Users*. Retrieved from http://blog.teamtreehouse.com/emotional-interface-design-the-gateway-to-passionate-users/ (Accessed: 13 July 2013).

WEBSITES

Coyier, C., 2013. CSS Almanac. Retrieved from http://css-tricks.com/almanac/ (Accessed: 22 August 2013)

ARTICLE

Gould, J. D.; Alfaro, L.; Finn, R.; Haupt, B.; & Minuto, A. (1987). Reading from CRT displays can be as fast as reading from paper. Human Factors, 29(5),497-517.

APPENDIX A: GLOSSARY

Aperture: The aperture is the partially enclosed, somewhat rounded negative space in some characters such as ‘n’, ‘C’, ‘S’, the lower part of ‘e’, or the upper part of a double-storey ‘a’.
Ascender: Any part in a lowercase letter that extends above the x-height, found for example in b, d, f, h, k, etc. Some types of ascenders have specific names.
Axis: An imaginary line drawn from top to bottom of a glyph bisecting the upper and lower strokes is the axis.
Baseline: The imaginary line upon which the letters in a font appear to rest.
Body: Originally the physical block on which each character sat, in digital type it is the imaginary area that encompasses each character in a font. The height of the body equals the point size; its width is related the width of the character.
Bowl: The curved part of the character that encloses the circular or curved parts (counter) of some letters such as ‘d’, ‘b’, ‘o’, ‘D’, and ‘B’ is the bowl.
Cap height: The height from the baseline to the top of the uppercase letters (not including diacritics).
Contextual: Feature-rich OpenType fonts can detect certain characters or character combinations before and/or after specific characters and substitute them with alternate glyphs or ligatures according to the context.
Counter: The enclosed or partially enclosed circular or curved negative space (white space) of some letters such as d, o, and s is the counter.
Crossbar: The (usually) horizontal stroke across the middle of uppercase ‘A’ and ‘H’ is a crossbar.
Descender: Any part in a lowercase letter that extends below the baseline, found for example in g, j, p, q, y, etc. Some types of descenders have specific names.
Diacritics: A diacritic is a ancilliary mark or sign added to a letter. In the Latin alphabet their function is to change the sound value of the letters to which they are added; in other alphabetical systems like Arabic or Hebrew they may indicate sounds (vowels and tones) which are not conveyed by the basic alphabet.
Display: A category of typefaces designed for decorative or headline use. As opposed to text typefaces, display typefaces are usually meant for larger settings.
Ear: Typically found on the lower case ‘g’, an ear is a decorative flourish usually on the upper right side of the bowl.
Eye: Much like a counter, the eye refers specifically to the enclosed space in a lowercase ‘e’.
Glyph: Every character in a typeface, (e.g: G, $, ?, and 7), is represented by a glyph.

One single type design may contain more than one glyph for each character. These are usually referred to as alternates.

KERNING: Kerning refers to the horizontal space between individual pairs of letters (a kerning pair), and is used to correct spacing problems in specific letter combinations. Well-spaced fonts need comparatively less kerning pairs. Fonts that are properly kerned appear evenly spaced without large open gaps of white space between any two characters.

LEADING: The vertical space between lines of text (baseline to baseline). Also known as linespacing.

LIGATURE: Two or more glyphs joined together to form a single glyph.

LETTER SPACING: It refers to the amount of space between the letters in a word or a block of text.

MEAN LINE: The line that determines where the non-ascending characters end in a typeface.

TAIL: In typography, the descending, often decorative stroke on the letter 'Q' or the descending, often curved diagonal stroke on 'K' or 'R' is the tail.

TERMINAL: The end (straight or curved) of any stroke that doesn't include a serif.

WIDOWS AND ORPHANS: A word or short phrase separated from the rest of a paragraph and left sitting at the top of the next column or the next page.

WEB FONTS: Refer to all the fonts that are available to be used by declaring them in the @font-face rule. Typically all of these fonts have been optimised for web usage; thus they have small file sizes and are aliased to render correctly when used with smaller font sizes.

X-HEIGHT: The distance between the baseline and the mean line.

APPENDIX B: INTERVIEWS

Candidate 1

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
Cara Clara Murtagh, Junior Web Designer with Old Hat for over a year!

Q2: Did you study typography within a formal educational environment?
Yes, (Waterford Institute of Technology and Dublin Institute of Technology)

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
Its extremely important. Web typography has its limitations (eg. kerning) but it has come along way over the past years. With websites like typekit and font.com web design typography is not limited to what fonts are on a particular computer.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
Typography details are very important but as previously stated there are limitations. Its a matter of whether or not it can be done through code. For example if you are designing something that needs to be editable within a CMS this may effect the fixability of the type.

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
Control over kerning would be a big limitation. Also each browser may display a font differently, a font may appear bolder in one browser compared to another. You overcome the typography issue by working with the developer and test what can be done.

Q6: Do you use typographic grids for your web design projects?
Yes I would always use a grid when designing.

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
With websites like typekit and fonts.com you are no longer limited to these fonts. I still use the web safe fonts from time to time where I think they work with the design but its no longer a case where you have to use them.

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
We would use Fonts.com more then the others stated above as they offer a better service. You can download the font temporarily and incorporate it into your designs (in photoshop) This is a great advantage while in the design process.

Q9: Has cost ever affected the typographic choices of a web design project?
Yes, some fonts are expensive to use and you may not have the budget to spend that much on a font.

Q10: How many of your web design projects result in responsive design?
I would say 100% of our designs are responsive. Websites need to be compatible across a number of devices and its careless to design without thinking about all the users.

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
We would use CSS! The jQuery Plugin looks interesting and will definitely look further into this!

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
We generally use our own CMS but have used wordpress. It doesn't effect typography choices because fonts.com can be incorporated in.

Q13: What do you use to define type size?
Pixels

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Yes some project require the use of certain fonts to comply with their branding identity.

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
I wouldn't say typography is used to improve SEO. i would say the copy/code is used to improve it.

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
No, you purchase the font and use it correctly.

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Yes, I would tailor my web design to target specific audiences. Typography is an integral part of the web design so I wouldn't separate from the process. If the web design is tailored to an audience this would of course effect the typography decisions

Q18: What would you regard as the most important steps designers should take to improve web typography?
Work with a developer and learn the limitations and the possibilities of the medium. It is not print. The control is not the same. It's read differently.

Candidate 2

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
Clodagh Mahoney, Head of Frontend Design, Agency Full Time, 8 years experience

Q2: Did you study typography within a formal educational environment?
No

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
Extremely, it has always been important but now that we have webfonts that are simple to use in projects and display well across devices it is used more effectively.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
Depending on the style of the site, very important

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
Legibility at small font sizes, and contrast at certain weights on different devices. How browsers render the fonts is also difficult with IE often adding heavier weights to fonts

Q6: Do you use typographic grids for your web design projects?
No

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
Not very many use these fonts, only as fall backs

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
Subscription, and free, depends on the font we are using. Some are only available on a subscription service

Q9: Has cost ever affected the typographic choices of a web design project?
Not really

Q10: How many of your web design projects result in responsive design?
80%

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
No, as we are very minimal in our code and how many files are loading into the sites we build

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
We use a CMS but this doesn't limit our creativity with typography

Q13: What do you use to define type size?
EMS

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Yes, we often need to use specific typefaces for designs.

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
No, not typography. This would be in the HTML and using the correct markup.

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
Yes, we make sure to purchase webfont if not available on a subscription service

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Yes and yes

Q18: What would you regard as the most important steps designers should take to improve web typography?

Don't add a font just to add interest. Limit the fonts to those that are required and ensure that the font fits the brand, the audience and the website objectives. The font must also have a web version as we would not load images for text.

Candidate 3

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.

Sarah Gleeson - Studio Manager & Senior Designer at Dara Creative. 6yrs experience in the industry.

Q2: Did you study typography within a formal educational environment?

Yes, as part of Vis Comm in DIT typography was a module in our course. It was mainly (at the time) for print - the principles, form, structure, layout, etc.

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?

It's crucial in web design and before 3 yrs ago we were only using the standardised computer fonts (Arial, Verdana, Georgia, Times New Roman, etc.) Now with google fonts we have the opportunity to make more dynamic, engaging and unique websites which are individual to each company that we work for.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?

In web design these aren't really relevant - it's easy on a print project to pay attention to these details, but at the end of the day the website is an evolving medium and the client will be changing the text themselves over the months / years so we have very little control over such details. We do definitely make use of capitalisation but I have never in my years working in web design used small caps or drop caps - they are just not for the world of web.

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?

Speed - the main issue is always speed. Using nice google fonts looks well but you can never compromise on the speed of a site - we have a rule of thumb which is that it's best to use 1 google font for headings (H1, H2, etc.) or menus but paired with something like Arial or Verdana for the bulk body text. Also we never use more than 2 google fonts on any website. Other issues we've come across include that some google fonts appear differently in different browsers, so for instance it might look great in Chrome but really bold for no reason in Firefox. So we have to be careful to ensure we are happy with it's overall appearance across a range of browsers.

Q6: Do you use typographic grids for your web design projects?
We always use the 960px grid system for all our website projects. It's especially important for creating responsive sites.
[Respondent has suggested a website for this: http://sixrevisions.com/web_design/the-960-grid-system-made-easy/]

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
Always for body text, but not really for main headings / any feature areas.

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects?
Yes, we use Google Fonts.

Q9: Has cost ever affected the typographic choices of a web design project?
Yes, we rarely pay for specific web font licenses and always try to use web-safe / google fonts for our clients.

Q10: How many of your web design projects result in responsive design?
Probably these days about 90% - it's sold as standard on most projects, but some people still aren't willing to pay for it.

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Yes all the time, although on a lot of the newer projects we use a lot more HTML5, CSS3 for newer browsers and then default to jQuery when things don't work for older browsers.

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
We used to use an open source CMS called MODx but have made the move over to Drupal in the last 6 months. We used Joomla when I first started here 5 years ago and it was a pain to use. We don't use Wordpress at all. The CMS does not (and should not) ever limit the design capabilities and we work very closely together with our development team to ensure that we don't have to compromise on the design to create the best user experience in our websites.

Q13: What do you use to define type size?
Pixels

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Yes, but not too often.

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
Visually - I wouldn't say so - no. It's more the content (keywords) used carefully in the text (especially H1, H2, bolded words, etc.) that help the SEO.

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
We only use open source Google fonts and Web-Safe fonts and only on one or two projects do we use other fonts, which you buy specific licences for so I wouldn't say it affects the decision, other than you have a limited choice. Still by comparison to the 4 options versus the hundreds of google fonts we have to choose from these days, it doesn't feel limited to me as a designer anymore.

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Absolutely, every target audience, every industry and every website needs to be unique and both the typography and overall look and feel of the website is determined by these factors. At the beginning of each project we sit down with our clients and discuss all of these in order to create the brief for their website.

Q18: What would you regard as the most important steps designers should take to improve web typography?
Don't do what's safe or easy - always push the boundaries on what we can do and work closely with developers to create wonderful websites that also work brilliantly. No point in having a beautiful website if it crawls along, or doesn't achieve the clients' goals (such as online conversions, increased sales enquiries, increased revenue, etc.). Typography can be used to create the personality of website very quickly so it's an important part of our consideration as a designer.

Candidate 4

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.

John Henry Donovan

Background is in Industrial Design, Graphic Design, Animation, Tv & Film, WEb Design and Development I have gone in and out of Freelance over the years and current am a Technical Director working remotely for a company in Kildare I have 16 years of experience in the web

Q2: Did you study typography within a formal educational environment?

No

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?

I always considered it important. The fact tools, browsers and techniques have become better over the last 3 years has finally gotten rid of the frustration in not being able to realise a type layout correctly.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?

Really depends on the context and whether those details are used in conjunction with a brand. Very important if used with the latter.

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?

From being there nearly since the start, the one issue which affects it all the time is the browser inconsistencies. Even now with third-party web fonts there is still a lot of inconsistency

Q6: Do you use typographic grids for your web design projects?

I would use a typographic scale in most instances. I don't spend too much time thinking about it. I generally use a set of pre-sets I keep around depending on the type of project.

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?

Yes in a lot of cases I would use third-party services to deliver webfonts for headings etc and use the traditional web safe fonts for body copy. Nearly always a combination

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
Budgetary requirements usually dictate this choice. Sometimes I would use 2 services at a time. Sometimes it depends on the brand ad if their typeface is available on a service or not.
More often I convert fonts on Font Squirrel for use

Q9: Has cost ever affected the typographic choices of a web design project?
Yes a lot of the time have had to go with a copycat font or a very similar font as client does not see the need to be that 'exact'

Q10: How many of your web design projects result in responsive design?
Again mostly depends on budget but I would say about 90% of them. Its funny because back before the term existed all my work was responsive as we mostly built for a fluid layout.

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Not often no unless I was experimenting or the site was very design orientated or a layout had to be exact in its treatment of letters

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
Yes. I use ExpressionEngine and Statamic. I tend to not use Wordpress as its a blogging tool and not a CMS. ExpressionEngine and Statamic don't get in the way of the design or templates so it doesnt affect any design or type choices.

Q13: What do you use to define type size?
Pixels, EMS, REMS, percentages

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Yes quite often. Its usually one of the first elements I would go looking for as I

design in the browser so having the correct fonts early on works better for reviews.

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
I would use the markup of typography and the content to improve SEO. As long as the text is readable by a Googlebot I don't see the actual typography decisions affecting SEO much

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
Yes. Again this only comes into play when dealing with a brand. Some clients brands have fonts that specifically have web licences and can be converted on Font SQuirrel etc

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Yes quite often. It only affects the typographic decisions if the website is going to be multi-lingual

Q18: What would you regard as the most important steps designers should take to improve web typography?
Learn CSS typographic fundamentals. Learn the math used. Its not far off the math used in basic print typography. Don't be influenced by the pretty demos and tutorials. If you are gonna use something then learn how it works rather than a copy and paste

Candidate 5

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
Kieran Daly: Owner of Grange Web Design

Q2: Did you study typography within a formal educational environment?
No

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
More and more important and definitely on the increase.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
Unimportant, spacing and right choice more important

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
Few clients have budget to pay for fonts but if priced correctly then usage of a paid service and be of use on an ongoing basis for a design company,

Q6: Do you use typographic grids for your web design projects?
Yes, I always use grids when designing.

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
WE use a pretty standard set but do use Arial and some of the Google Fonts as well as long as they are clean and simple (like Open Sans lately a fav).

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
Yes see above. They load quickly and work well and can be changed (as can the paid of course)

Q9: Has cost ever affected the typographic choices of a web design project?
Yes, it is a consideration for many projects.

Q10: How many of your web design projects result in responsive design?
Nearly all now

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Yes, I use both CSS and JavaScript

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
All of my websites are created using a CMS but this does not really affect the typography.

Q13: What do you use to define type size?
Percentages

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Rarely we choose and lead the client usually

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
No, this is not something we use.

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
No, it is not a consideration.

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Yes size and style depend on age demographic as for older audiences we may increase the spacing and line widths for them.

Q18: What would you regard as the most important steps designers should take to improve web typography?
Don't use too many 2-3 maximum. Pick 5-8 that you like and stick with them for a period and don't stray too far as you can be consumed by it. Work on spacing with these as this is as important

Candidate 6

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
David Henry, master of all trades

Q2: Did you study typography within a formal educational environment?
No

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
very, far more important that 5 years ago when most heading text was image based

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
More important than ever

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
Old browsers, flash

Q6: Do you use typographic grids for your web design projects?
Always

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
All for standard text

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
Yes, all depending on design and budget

Q9: Has cost ever affected the typographic choices of a web design project?
Yes, sometimes it does affect the choices.

Q10: How many of your web design projects result in responsive design?
Currently 80%

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Sometimes

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
Yes and yes

Q13: What do you use to define type size?
Pixels, EMS, percentages

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Yes, often

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
Yes, we no longer use an image when text will do

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
Yes

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Probably

Q18: What would you regard as the most important steps designers should take to improve web typography?
Test, test and then test again

Candidate 7

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
Karen Hanratty, Owner and Creative Director of Pixel Design, 15 years experience as a graphic / web designer.

Q2: Did you study typography within a formal educational environment?
Yes, Visual Communications Degree

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
Typography has always been very important in all my web design projects. has stayed the same over past 3 years.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
Fairly important

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
Fonts rendering differently in different browsers and platforms, some look great on a mac but are very jagged on a PC. It can be difficult to explain why a substitute font is used for some browsers.

Q6: Do you use typographic grids for your web design projects?
Yes, I always use grids.

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
Yes we do use web safe fonts with a mixture of other web fonts on most sites.

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
Both, I have used Google Fonts, Typekit, Webkit, Fonts.com/webfonts

Q9: Has cost ever affected the typographic choices of a web design project?
Yes

Q10: How many of your web design projects result in responsive design?
Since 2012 approx 80% of our projects

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Yes

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
Most of the website I design would use a CMS. I have not encountered any restrictions imposed by the CMS, generally they are very flexible in terms of what you can do with the front end design.

Q13: What do you use to define type size?
Pixels, EMS

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Yes

Q15: Do you use typography to improve SEO (Search Engine Optimisation)?
No

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
Sometimes, if for example the font designer has not yet released a web font license for their font. In this case we have to choose a similar font that is available to license for web use. This is less of an issue that it was 2 or 3 years ago and most font foundries are now offering licensing for web use.

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Yes. Yes.

Q18: What would you regard as the most important steps designers should take to improve web typography?

Multi-browser and device testing for legibility at the earliest stage of choosing a web font for the project. Typecast is great for this.

Candidate 8

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
Niki Tisza, freelancer and student with 1 year experience.

Q2: Did you study typography within a formal educational environment?
Yes

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
Really important

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
Important and it really depends on which country you're designing for

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
Not many issues, I always use webfonts and give at least 2 extra options just in case

Q6: Do you use typographic grids for your web design projects?
Always

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
Yes, I really like Helvetica because its legibility but my font choices depends on the certain projects

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
I have been using both.

Q9: Has cost ever affected the typographic choices of a web design project?
It hasn't so far

Q10: How many of your web design projects result in responsive design?
All of our web design projects result in responsive designs.

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Yes, we use both.

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
Wordpress, never used Joomla

Q13: What do you use to define type size?
Pixels, EMS

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Not really, it is not an issue.

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
No

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
Yes

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Yes

Q18: What would you regard as the most important steps designers should take to improve web typography?
Read blogs about typography

Candidate 9

Q1: Please state your name and describe your professional background, for example job title, position held (freelance, in-house or agency designer) and years of experience.
David Behan, creative director, 13 years designing websites

Q2: Did you study typography within a formal educational environment?
No

Q3: How important do you consider typography in your web design projects? Has this increased, decreased or stayed the same over the past 3 years?
Very important and increased over the years, including the past 3 years.

Q4: How important do you consider typographic details (such as hanging punctuation, small caps and drop caps) to your web design projects?
Not so much

Q5: What are the biggest issues or limitations you have encountered with web typography and how have you overcome these issues in your web designs?
First we could only use 5 web safe fonts, then came sifr and we could use different fonts for headings, then font-face came along and opened up a new era. Lately it's been about getting access to the right fonts, at the right price. Then needing a cross browser/platform compatibility of that font. Windows font rendering is terrible.

Q6: Do you use typographic grids for your web design projects?
Yes

Q7: Do many of your web design projects use traditional "web safe fonts" such as Arial, Helvetica, Verdana or Georgia? If so, do you also use other fonts used in the design?
Sometimes we still do but we all projects use non web safe ones.

Q8: Do you use free web fonts (e.g. Google Fonts or Font Squirrel) or subscription services (e.g. TypeKit) for your web design projects? Can you explain your choices?
We use fonts.com and typekit mainly for web fonts. We have accounts with both and get a great variety with them.

Q9: Has cost ever affected the typographic choices of a web design project?
SkyFonts makes it easy to try fonts on a project without having to buy them and produce mock-ups for clients. @font-face versions are then available in the service then.

Q10: How many of your web design projects result in responsive design?
About 60% of them

Q11: Do you use CSS and JavaScript (e.g. jQuery plugins such as Lettering.js or FitText.js) for implementing type elements into your web design projects?
Looked at lettering and fittext before but not used them much.

Q12: Do you ever create websites using CMS (Content Management Systems) like WordPress or Joomla? Does this affect your typographic choices for the design?
Always a CMS. Doesn't effect the front-end font choices really.

Q13: What do you use to define type size?
Pixels, EMS

Q14: Do you often need to use a specific typeface on web design project? For example, to comply with a client's brand identity.
Depends on the clients. Some have brand guidelines. Others are more flexible.

Q15: Do you use typography to improve SEO (Search Engine Optimisation)? Please explain.
No.

Q16: Do typeface copyright issues affect typographic decisions for your web design projects?
Not when you use a foundry.

Q17: Do you tailor your web design to target specific audiences? Does this affect typographic decisions?
Definitely.

Q18: What would you regard as the most important steps designers should take to improve web typography?
Smashing Magazine?