Reflection on Practice

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CONTENTS

INTRODUCTION

This essay represents a reflection on the practical work undertaken as part of the MA in Typeface Design at the University of Reading. The aim of this practical study was originally to produce a text typeface suitable for use on medical information documents (medical inserts and labels). However this initial brief was modified in the course of the design process.

As with any given design brief, there is always a purpose for its creation. The first part of this essay will explain the purpose of the design of this typeface as well as the legal and technical requirements involved. The second part represents a chronological overview of the development of this typeface and the decisions and methodology adopted during the design process.

1 THE BRIEF

The original idea for the practical part of the course was to create a text typeface for medical inserts aimed specifically towards the visually impaired and elderly people suffering from such impairments. Although the need for medicine is not confined to any one group, the main consumer audience was initially perceived as beign the elderly, and a first step was therefore familiarisation with the constraints of the elderly eye. It is a fact that with age, vision naturally declines. The pupils shrink, allowing less light to enter the eyes and the lens loses its elasticity, which as a result reduces focus and makes reading more difficult, especially at the small print sizes in which most inserts are printed. In addition, background colour, frequently used on medicine labels and inserts, has also been found to reduce luminance contrast, as does coloured text. (fig 1)

Do not take with any other paracetamol-containing products. Do not take with alcohol.
You should ask the doctor before taking this product if:

- you are pregnant, or
- you are taking medicines for high blood pressure, or angina, or
- you are taking tricyclic antidepressants or barbiturates, or
- you are taking or have taken monoamine oxidase inhibitors (MAOI antidepressants) within 14 days, or
- you have a blood circulation problem (including Raynaud's syndrome), or
- you have problems with your liver or kidneys, or
- you are taking sympathomimetic drugs, such as decongestants or some drugs used to treat asthma.
- you are taking other medicines. Some drugs may affect the absorption of paracetamol, including those used to treat blood cholesterol and nausea and vomiting. The effect of blood thinning drugs may be increased by paracetamol.

If you are diabetic, note that each dose contains 2.0 g of sugar.

If you have phenylketonuria, note that the product is sweetened with aspartame.

HOW MUCH TO TAKE

The dose for adults and children aged 12 and over is one sachet. Do not give to children under 12, except on medical advice.

Wait 4 to 6 hours before taking another dose.

Do not take more than four sachets in 24 hours.

Do not take more than these doses.

Immediate medical advice should be sought in the event of an overdose even if you feel well because of the risk of delayed, serious liver damage.

If the symptoms of your cold or flu persist, consult your doctor.

HOW TO TAKE LEMSIP COLD + FLU MAX STRENGTH

Pour the contents of one sachet into a mug. Fill it with hot, not boiling, water and stir until dissolved, and drink. The powder is already sweetened, but you may add extra sugar, artificial sweetener or honey to taste.

WHAT SIDE-EFFECTS MAY OCCUR?

Side-effects are rare. Allergic reactions (such as skin rashes) or blood reactions may occasionally occur. Tell your doctor or pharmacist if you have any side-effects after taking this product.

STORAGE

Keep out of the reach and sight of children.

Do not use after the expiry date (EXP month/year) which is given on the bottom of the pack.

Keep this medicine in a dry place-below 25°C (77°F).

Lemsip Max Strength and ⓣ are trademarks.

Leaflet last revised March 2001.
#189377

LEMSIP
Cold+Flu
MAX STRENGTH

DIRECTIONS

How to take: Pour one sachet of powder into a mug and fill with hot, but not boiling, water. Stir until dissolved. If preferred, sweeten to taste with sugar, honey or your usual sweetener.

How much to take: Adults and Children 12 and over: 1 sachet every 4-6 hours. Do not exceed 4 sachets in 24 hours. Do not give to children under 12, except on medical advice.

DO NOT EXCEED THE STATED DOSE

For safe use: Keep out of the reach and sight of children. Consult your pharmacist or doctor before taking if: • you are being prescribed medicine. • you are pregnant. If symptoms persist consult your doctor.

INGREDIENTS

INGREDIENT (Each sachet contains)	ACTION	RELIEF OF...
Paracetamol 1000mg	Analgesic	Headache, sore throat, fever, body aches & pains
Phenylephrine HCl 12.2mg	Decongestant	Blocked or runny nose

Total sugars 2.0g in a base including sucrose, aspartame and real whole lemon. Also contains Vitamin C. See leaflet for further information.

WARNINGS

CONTAINS PARACETAMOL. Do not take with any other paracetamol-containing products. Immediate medical advice should be sought in the event of an overdose, even if you feel well.

ANY QUESTIONS?

We welcome your comments and suggestions. Please write to Consumer Information, Freepost, HU7831, Reckitt Benckiser Healthcare (UK) Limited, Hull, HU8 7BR, or call us free (UK only) on 0500 455 456, or E-mail us on lemsip@reckittbenckiser.com
Lemsip Cold + Flu Max Strength is made in Britain.
Product Licence Holder: Reckitt Benckiser Healthcare (UK) Limited, Hull, HU8 7DS.

Headache ✓ Body Aches ✓ Blocked Nose ✓ Fever ✓ Sore Throat ✓

fig 1 Examples of medicinal information/instructions layouts

The primary focus for this typeface is therefore legibility. However during the course of the design process the brief changed slightly, to focus on simply creating a legible and readable typeface from sizes 6 pt to 12 pt which would be suitable for the instructional/informational inserts found inside medicinal drug packages.

1.1 The legal requirements

Researching into the chosen topic, it was necessary as a preliminary step to try to establish and comprehend the relevant legal framework surrounding it, since this would need to be kept in mind throughout the whole design process.

The European Commission legal guidelines (2006) state that medicinal package leaflets must be written and designed to be clear, simple to use, easily legible and indelible. They must also be printed in the official language of the member state where the product is placed on the market, and if any additional languages are included, the information should be presented in the same format so as not to have an adverse impact on the legibility, clarity and comprehensibility of the text.

1.2 The technical requirements

Technical issues such as the quality of paper and size of the instructional insert also had to be investigated. Both aspects are mentioned briefly in the European Commission guidelines of 2006, but with no in depth discussion or analysis.

Paper size may vary depending on the length of information needed to be displayed, so paper size A4/A5 is preferable as affirmed, because paper of these dimensions is thought to be user-friendly and easier for the patient to put back into the packaging once finished. Paper weight on the other hand should be no less than 40g/m2, anything thinner may be too transparent and thus difficult to read. In addition the use of glossy paper should be avoided as it reflects light making the information difficult to read, and it is therefore advisable to use uncoated paper.

1.3 The elements of legibility

Maximum legibility for such a typeface is crucial and to achieve this, factors such as type size, line space, type contrast, type weight, line length and the overall design of the letterforms need to be taken into consideration.

Karel Van Der Waarde's PhD on "Visual information about medicines for patients" (1993), is the only concise and reliable piece of work that investigates in great detail all the elements involved in legibility in this area and his conclusion is that existing regulations, guidelines and advice on how to make type legible are insufficient and inadequate. There are considerable variations between the different regulations and guidelines with the advice they offer frequently being unhelpful. He believes that this is due both to problems with terminology and to the difficulty of describing and controlling the combination of all the factors that have an influence on the legibility of text. Many of the guidelines are vague and out of date, clearly indicating that while this

is an area of considerable interest, it has not been studied to its full potential.

1.3.1 Letterforms

The debate about the legibility of serif typefaces as opposrd to san serif typefaces is one that is still being researched and discussed at great length and was a major dilemma at the start of my design process. A number of tests concerning both the legibility and readability of these two type forms have been carried out through the years, all of which vary dramatically in their conclusions. For the setting of large quantities of text, Degani (1992) and Reynolds (1984) prefer the use of a serif typeface, as the shape of the characters is easier to read. They suggest that the shape of serifs individualize each letter to provide a guide for the eye to follow across the page, which aids in the recognition of word shapes. Others, such as Sorg (1985), believe that simplicity of form makes for easier reading and therefore that Helvetica is much easier to read than Century Schoolbook, due to its simplicity in form. This simplicity was said to assist with the identification of individual letters. On the other hand, Poulton (1965) and Paterson and Tinker (1932) found no difference between the two type forms in terms of readability[1].

However the general belief is that san serif type forms are still to be favoured for legibility and are best used for headings and captions as well as functions such as road signs, directions and official forms with small type sizes, although they can be trying for the reader when set over extended passages of text. Serifs on the other hand are preferred for continues set of text because they offer a steady baseline to maintain the eyes' accuracy along the line, helping in this way to group characters into individual words and in addition, the upper form of the characters helps to facilitate recognition of words. (fig 2)

fig 2

1 Degani, Reynolds, Sorg, Poulton Paterson and Tinker as quoted in Connolly, Kevin, 'Legibility and readability of small print: effects of font, observer age and spatial vision', 1998

This is something that the European Commission guidelines (2006) appear to agree upon. They state that for large quantities of text, frequently found in medicinal package leaflets, the use of a serif typeface is much to be preferred; nevertheless they go on to say, that clarity within the chosen font is a detail that should not be overlooked as similar letters/numbers, such as 'I', 'l' and '1' must at all times be easily distinguished from each other, so as not to create confusion and hopefully to avoid any misinterpretation that might, at worst, lead to mistakes in dosage[2].

Despite their vagueness , the one consistent pattern that seems to emerge from all the various guidelines is that whatever choice of typeface is made, it must, above all, be clear and easy to read.

1.3.2 Type contrast

Another aspect of major importance with regard to increasing legibility is contrast between the letters. The use of a typeface with a more uniform line should be encouraged in such situations, since high contrast typefaces make print difficult to read and reproduce, as the thin parts of the letters degrade visually more readily than the thicker ones, making reading much harder. (Spiekerman & Ginger 1993)[3]. This may tend to support the use of san serif typefaces, since they generally maintain a lower contrast than serif typefaces.

1.3.3 Type size

As regards to type size, there does not appear to be a clear consensus. The size used may vary from country to country and also depending on the amount of information being displayed. Only two countries in the European Union have enforced a type size for the text in medical inserts, with Spain specifying a text size not smaller than 7 points and Switzerland preferring a type size of at least 8 points[4]. Overall, the European Commission's guidelines (2006) simply suggest that, where practical, the font size of the main body of text should be 12 points with a larger size for any heading, giving as an example 14 points, and recommending the use of between 16 and 20 points for visually impaired patients.

1.3.4 Type weight and the use of upper and lower case

Despite the fact that there is very little detail to be found in the literature on medicinal inserts concerning type weight and the use of upper and lower case, these are issues which it is nonetheless vital to address.

2 European Commission guidelines, 'Draft guidelines on the readability of the lable and package leaflet of medicinal products for himan use', 2006

3 Spiekerman and Ginger as quoted in
Connolly, Kevin, 'Legibility and readability of small print: effects of font, observer age and spatial vision', 1998

4 Waarde, Karel Van Der, ' Visual information about medicines for patients', 1993

In relation to the use of upper or lower case text, the European Commission guidelines (2006) advise against the widespread use of capitals, except for emphasis, as the human eye recognizes words in written documents by the word shapes, a point which the American NDMA also agrees upon.

Furthermore, type weight is an area that also sparks debate in relation to legibility, with Barnhurst (1994) stating that bold is considered highly legible, and Smither and Braun (1994) finding that, although participants in a study thought bold text to be more readable, they made a lot more errors when reading it[5]. However like so many other aspects the clarity provided by the use of bold type is something that is quite difficult to quantify[6].

1.3.5 Line space and line length

There are very few studies which have attempted to look at line spacing specifically for medicinal inserts. Ralph (1982) specifies four rules. For 11 or 12 point size type he recommends one or two points of leading, for 11 point size type or smaller he suggest no less than two points of leading, for larger than 12 point size type he proposes no more than two points of leading and finally he believes that under no circumstances should four points of leading ever be used. The only other guideline with regard to line spacing is Raynor (1992), who declares that only a quarter of the type size should be used as leading. Even though both guidelines need to be acknowledged neither can be taken as a given, as the specification of line space in both recommendations has no reference to any typefaces[7].

Line length too is something which cannot be set down definitively, as various opinions exist. Raynor (1992) suggest a line length of between 35 and 65 characters including spaces[8], whilst the Royal National Institute for the Blind advise a length of approximately 60 to 70 characters long. It must also be pointed out that the design style of each individual typeface is crucial in the setting of line space as well as line length, therefore no set rules can ever be applied.

5 Barnhurst and Smither and Braun as quoted in Connolly, Kevin, 'Legibility and readability of small print: effects of font, observer age and spatial vision', 1998

6 Waarde, Karel Van Der, ' Visual information about medicines for patients', 1993

7 Ralph and Raynor as quoted in Ibid

8 Raynor as quoted in Ibid

THE DESIGN PROCESS

2.1 Designing of the regular

Bearing in mind the various recommendations for optimising print legibility, including a simple font, fairly broad with thick limbs, but with not too much contrast between thick and thin lines, (Barnhurst 1994) and the use of simplified letter outlines, avoiding long heavy serifs and hair line strokes; (Tinker 1963) a set of initial guidelines had to be set up for the typeface[9].

A fairly large x-height with open counter forms was the first criterion, followed by a number of others, such as tall ascenders, wide proportion letters, consistent strokes and large punctuation marks and diacritics.

Furthermore, the psychological impact of the typeface was also a significant aspect that needed to be addressed. A patient is naturally in an anxious state and when reading the instructions on how to take his or her medication, the type should provide some comfort, friendliness and reassurance to calm his or her anxiety. These qualities were considered important to the overall design and needed particular attention, which is why curves and soft lines were introduced very early on in the design; however, a more careful consideration was then required when these curves needed to be refined.

A number of rough sketches were made at the beginning of the design process to find some interesting and attractive shapes (fig.3) that were then scanned into FontLab, placed as backgrounds, and used as guidelines when drawing with the bézier curves. It must be noted that adapting to the use of bézier curves was not as easy as drawing the shapes by hand, but nonetheless motivating in understanding the relationship between the two.

fig 3 Examples of the original drawings that were imported into FontLab and transformed into digital forms

9 Barnhurst and Tinker quoted in Connolly, Kevin, 'Legibility and readability of small print: effects of font, observer age and spatial vision', 1998

2.1.1 Achieving clarity

Serifs were introduced to give the design more sturdiness and also to allow for more space between each letter. The design itself has a vertical axis and vertical stems that end with asymmetrical serifs at the bottom, keeping the design firmly on the baseline and providing it with an overall sturdiness throughout. (fig 4)

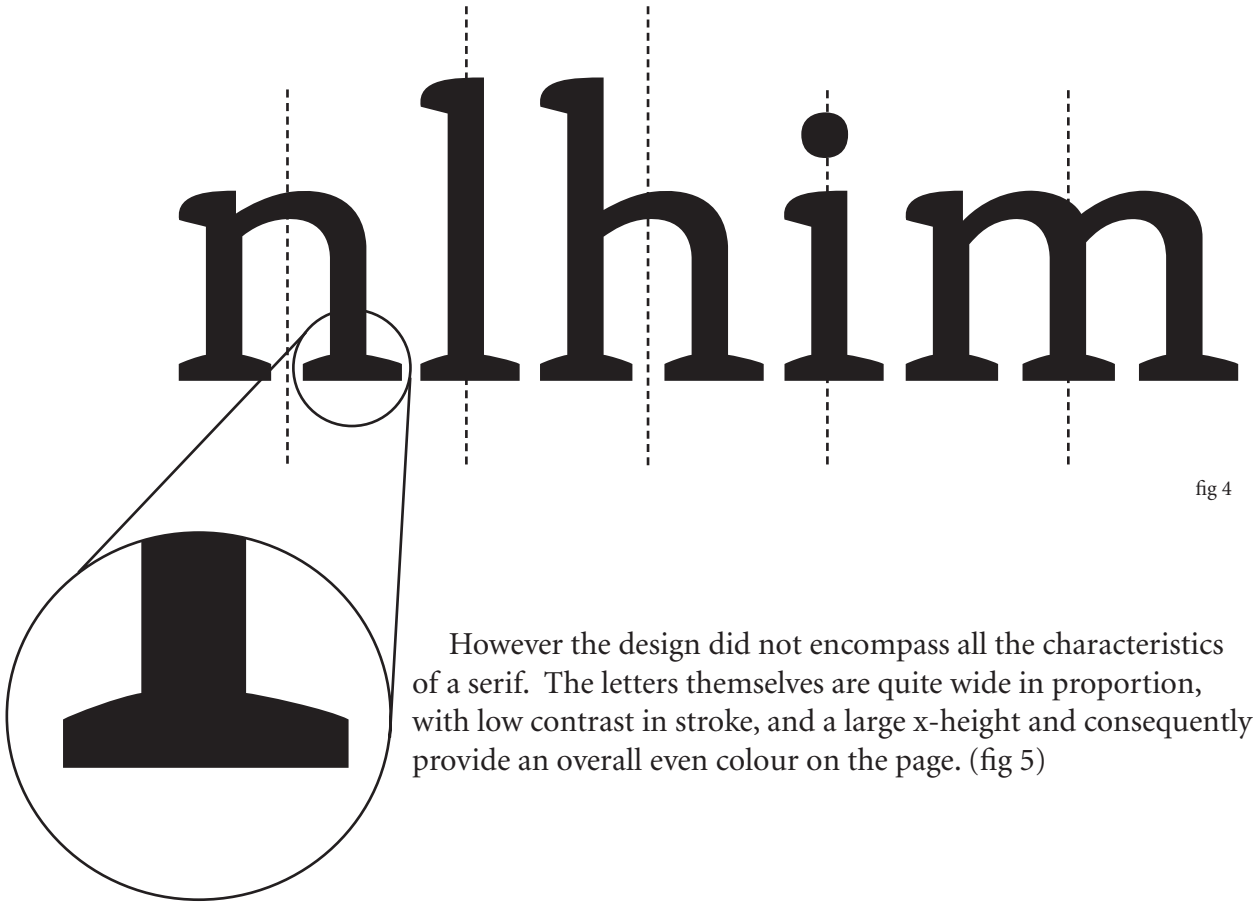

fig 4

However the design did not encompass all the characteristics of a serif. The letters themselves are quite wide in proportion, with low contrast in stroke, and a large x-height and consequently provide an overall even colour on the page. (fig 5)

As well as medication, there are simple ways in which you can treat your painful joints. Warmth applied to the affected area can relieve pain and stiffness. Some people buy special heat lamps or creams that produce localised heat, but a hot water bottle can be just as effective. Make sure it's wrapped in something so it doesn't burn you. An ice pack can bring relief to hot and inflamed joints, but you should seek advice from a physiotherapist first. Never apply ice directly to the skin - it can burn. Stress and muscle tension can make arthritis seem much worse. Many people find that taking a long bath, listening to soothing music or using a relaxation tape can help. Your physiotherapist will be able to advise you on relaxation techniques. Your body needs a variety of nutrients to stay healthy, so make sure you get lots of fruit and vegetables, meat, fish and beans, dairy

fig 5 An example of the typeface used in test.

Sharp lines among the curves were introduced at different levels during the design process, so as to provide some clarity in the forms as well as acting as an aid for stopping the curves from disintegrating at small text sizes. (fig 6) Nevertheless it has to be acknowledged that the top serifs need greater experimentation, as the curves on the outside still tend to disintegrate at small text sizes, making those particular serifs hard to identify.

fig 6

2.1.2 Differentiation of letterforms

To avoid misinterpretation, great care had to given when designing some easily confused characters, such as 'l', 'I', '1'; for that to be accomplished, frequent comparisons were made to ensure that all of the characters exhibited the necessary differences in form. (fig 7)

fig 7

2.1.3 The change of letterforms

Throughout the design process, sketching was used to refine the forms of the letters, with special attention being needed on the serif shapes. The most efficient way of doing this was to print off the glyph letter in a lighter grey colour and sketch on top of it the changes made to the design. (fig 8)

fig 8

fig 9

2.2 The designing of the italic

The same process of sketching was also applied to the italic version of this typeface in search for new shapes. (fig 9) The aim for the italic design was to still retain the clarity, open counters, minimal contrast and overall simplicity, as legibility was always the key in this design. However the informal, hand written qualities that characterise italic typefaces were not overlooked. In contrast with the stiffness that originates from the regular design, the italic variant is undoubtedly full of calligraphic movement. The letterforms are projected with so much liveliness on the page as soft curvy strokes are abandant. They swell up and are gently reduced to incorporate flow among the letters. The length of the terminals are also extended to add the impression of speed. (fig 10)

fig 10

The italic lower case variant has a gentle slope of just 8 degrees and was horizontally condensed by 90 per cent to stand out, without interfering with the overall colour of the regular when set next to each other in text. The gentle slope also makes it ideal to be used separately from the regular and still be read continuesly and with ease. It was discovered at a later stage that, in contrast with the lowercase letters, the angle at which the capitals and small caps needed to be slanted, was much less (5 degrees) due to their clean straight lines. These variantions in angle slant gave the italic a better optical uniformity. (fig 11)

fig 11

2.3 The designing of the diacritics

Even closer attention was needed for the adjustment of the diacritics, as line spacing in medical inserts is minimal. Although a lot of space was given to the lowercase diacritics, this did not apply to the capitals, therefore a careful examination was required to allow for the necessary space needed when printing at sizes six to eight points. For this to be accomplished the capital height had to be slightly shorter than the ascender height, which also resulted in a dramatic alteration of angle for the diacritics. The angle turned from being quite steep on the lowercase letters to more horizontal for the capitals. (fig 12)

fig 12

2.4 The designing of the figures

For the design of this typeface, only two set of number were needed, lining proportional and lining tabular. Stroke endings and form of serifs, were adopted for both sets in order to appear as close to the character set as possible. (fig 13) However, this was not the case for the fractions, subscript and superscript numbers. For their design, the serifs had to be removed and their forms had to be simplified (fig 14), as some of the numbers were too dark and unclear because of the serifs.

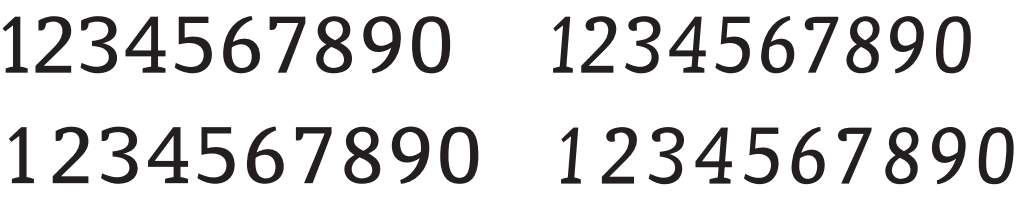

fig 13 Lining and lining tabular figure both in regular and italic.

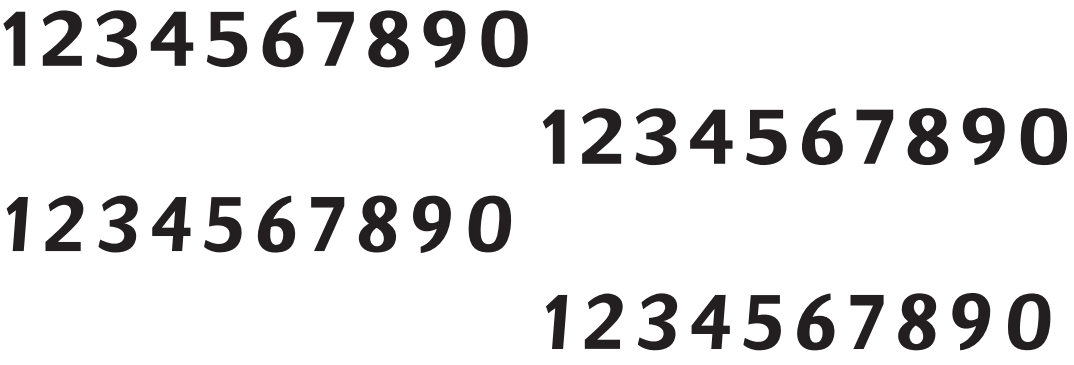

fig 14 Subscript and superscript figures

2.5 The designing of the small caps

With the design of both the lower and upper case of the regular and italic version completed, small caps were then created to be used as emphasis within the informational text. For the best optical balance, the small caps had to be designed slightly taller than the lower case letters and somewhat wider than the upper case. (fig 15)

fig 15

However, it was later discovered that designing the small caps after the upper case, was in fact much harder as the upper case had to be scaled down and the contrast readjust. Time could have been saved had the small caps been designed straight after the lowercase forms were established, because scaling the small caps up to generate the upper case is found to be much more efficient as minor adjustments are required, especially from the perspective of contrast.

2.6 The designing of the bold

Having achieved the desired forms in the regular varsion, a bold varient was then designed, for the purpose of headings and warning instructions. Achieving the right thickness was difficult due to the low contrast in the regular, that had already provided an even and good quality colour on the page. Consequently some tests were required to find the right thickness, which concluded in a decision to increase the width of the stem by 30 units. (fig 16)

There are many theories about whether what you eat affects your arthritis. As yet there's little scientific evidence to suggest that it does, but some doctors feel special diets are worth trying as long as they don't mean missing out on vital nutrients. **If you're considering going on a special diet for your arthritis, it's important to discuss it with your doctor first. Some people with arthritis find their condition improves when they give up certain foods. One theory is that this is because of a food allergy or food intolerance. There are many tests for determining allergies or intolerances, but the only reliable way of identifying**

fig 16 An example of regular and bold set next to eachother in text.

It is worth pointing out that due to the large width that characterizes this typeface, adjusting the overall thickness of stroke to create an even colour was challenging, and still needs to be improved, as some letters, such as ‘a’, ‘e’, ‘s’, ‘o’ had their stroke width increased from the inside to avoid expanding their overall widths further and now appear much darker when printed.

Attention will also have to be given at a later stage to the creation of ink traps for some of the letters, because, as mentioned above, the quality of paper on which the typeface will be displayed is quite poor. Unfortunately it was not possible to carry out any tests printing the typeface on different weights and qualities of paper , however it is an area that will be investigated in great debth in the near future. It has been observed that letters with two diagonals, such as ‘v’, ‘w’, ‘k’ and letters where round strokes meet straight ones, such as ‘d’, ‘n’, ‘r’ emerge as very dark, so inktraps need to be put in place to create openings to reduce that.

2.7 Kerning

Once the delicate process of spacing for the regular version was fixed, kerning was then put into place to adjust some letter combinations to finalise the texture on the page. As such a large number of characters are included in this typeface, similar shape letters, were grouped into class kerning pairs to speed up the process and save valuable time.

CONCLUSION

The typeface designed during the MA this year at Reading was not a finished project. A lot of fine-tuning of the glyph shapes across all three variants still needs to be done and a number of adjustments made, for them to meet all the goals that are set out in the brief. Personal goal to be met, hopefully in the near future include a san serif, a light a semi bold and a greek version. This typeface is a work in progress that has resulted in a motivating and remarkable learning curve for the designer.

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