COMPARISONS OF ARIAL, HELVETICA, & UNIVERS' READABILITY

Brian Alvin Hananto¹⁾

¹⁾ Universitas Pelita Harapan brian.hananto@uph.edu

ABSTRACT

Helvetica, Arial & Univers are well-known typefaces that are often used to represent the sans serif typeface classification. Though similar, the three typefaces are often objects of debate in terms of which is better. The research conducted by the author is held in hopes to compare each typeface in terms of readability. The research is done with several literature reviews regarding the typefaces, formal analysis of the alphabets of the typefaces, and also an experiment involving 70 participants that were all design students. As preliminary research, the author had highlighted several differences regarding the three typefaces. This research can be used as a reference to study the three typefaces in terms of readability and also as a reference to typeface readability analysis.

Keywords: Readability, Typeface Design, Typography, Helvetica, Arial, Univers

INTRODUCTION

Research Background

In graphic design, typography can be understood as an art that studies letters and its organization (Hananto, 2019, p. 196; Landa, 2011, p. 44). Typography itself can be found on most graphic design objects. This happens to shows the necessity of typography by being ubiquitous. That being said, typographers owe their craft from another's craft, typeface designers (Ruder, 1982, p. 7). Typeface designers design typefaces that typographers and graphic designers use on their designs. The vast and diverse selection of typefaces often confuse new designers that aren't able to distinguish characteristics of similar typefaces. One important characteristic of typefaces that had to be understood is readability and legibility.

Arial, Helvetica, and Univers are all categorized in the grotesque and neogrotesque typeface. Both category are the earliest sans serif typefaces; with grotesque being the early iterations which are more 'imperfect' compared to the uniformed neo-grotesque (Carter, Meggs, Day, Maxa, & Sanders, 2015, p. 39). Arial and Univers are often compared to Helvetica. Univers and Helvetica are both designed on the same period and ideas, but Helvetica is often more popular than Univers due to more exposure of Helvetica on popular media and usages ("The Univers of Helvetica: A Tale of Two Typefaces," 2019). Arial is designed almost 25 years later after Helvetica and is believed to be designed as an attempt to imitate Helvetica (Strizver, n.d.). While comparisons of Univers and Helvetica, and Helvetica and Arial are common, often the debate on 'which one is better' derived from historical context and minor form considerations. A thorough study on form for all three typefaces was never found by the author to this date. This prompted the author to study the three typefaces on a visual form perspective. The study is not intended to determine which typefaces are better, but to see how each typeface differs. The study is also intended to test a methodology on how to analyze typefaces readability.

Defining Typeface's Readability

To define readability, we need to understand about legibility. In typography, legibility and readability are sometimes mixed up and sometimes thought of like the same things, however, this is not the case (Jury, 2006, pp. 82–85). Legibility is a term that refers to how a letter can be distinguished from other letters (Hananto,

2019, p. 200), such as the digit '0' with the letter 'o'. On the other hand, readability refers to how a letter is easy to be read (Strizver, 2006, p. 59; Tselentis, 2011, p. 122). A legible typeface will help make the text that uses the type more readable, however, this does not mean that readable texts require legible typefaces. Adjustments such as size, color, tracking/spacing will contribute to making a text readable. Here we can conclude that readable text is texts that are easy to read, legible typefaces are typefaces that have distinguishable letters.

The design of a typeface can be called legible compared to other letters on the typeface, but how about when we compare a typeface with another typeface? This prompts the author to use the term a typeface's readability (not legibility), in which the author studies the form of a typeface to see whether the type will be easy to read or not. A legible typeface is good when all the letters on the typeface are distinguishable, a readable typeface is good when the typeface can be read well.

The factors that influence readability and also legibility are the design or characteristics of the letter and typeface and how the letter and typefaces presented (Woods, Davis, & Scharff, 2005, p. 87). This brings another question, on what context will the typeface be tested to see it's readability? Some typefaces are easier to read on printed matter, while others perform better on the screen (Tselentis, 2011, p. 122). In this case, the author argues that the context of how the typeface will be tested is irrelevant as all three typefaces will be tested on a similar environment, therefore conditional effects of the production will be the same on all three typefaces. Therefore, the remaining variable to be studied is just the design of the typeface.

Massimo Vignelli, a celebrated modern designer, stated that typography is "about the white" (Hustwit, 2007), what he meant was that typography should focus on the areas outside of the letter itself, as the white 'shapes' the black. This notion of typography is also applicable to typeface design, in which most typefaces performances were determined by the white areas. Typefaces with too much black will be illegible once scaled-down, hence being unreadable. Typefaces with too much white will be invisible once scaled-down, hence being unreadable also. This idea underlines the method to analyze the three typefaces for this study.

METHODOLOGY

For this study, the author conducted three different steps. The first step is the measurement of the three typefaces, followed by an analysis of the measurement results. The second step is experimenting to see responses towards the three typefaces performances, the result of the experiment is then analyzed. The final step is to create a conclusion based on the analysis of the previous two steps.

The measurement of the three typefaces is conducted first by comparing the three typefaces. The three fonts used to represent the typefaces are Arial Regular, Helvetica LT Std Roman, and Univers LT Std 55 Roman. The measurement was done digitally using digital imaging software to set up and do the measurement. All typefaces were set on 48pt, while measurements were done using millimeter. All of the three typefaces were set on uppercase, and each is designated a color to help distinguish the typefaces. The three typefaces are then layered together to see the similarity or differences. After seeing notable differences in the visual form, the author then measures parts of the letter. Each letter had different parts and areas

measured, most of them have their width and counters measured. While the measurement is a quantitative method, several qualitative methods of the typeface are also taken into account for later analysis. Then, the analysis uses the triad-ing method, which compares three different objects to highlight similarities and differences in comparing (Martin & Hanington, 2012, p. 186). From the analysis, the author can conclude which typeface is better in terms of visual form based on the metrics used.



Figure 1. Layering and measuring the typefaces Source: Author, 2020

The second step is to test the three typefaces. The three fonts were used in two different parameters, a 12/14.4pt and 10/12pt. For each parameter, a group of students was asked to determine which typeface performed best compared to the rest. There were a total of 70 students that are broken down into 15 groups. Each group is asked to present their choice that was later recorded. From the two scenarios, the author can conclude which typeface performed best on the respondents' feedback.

Lorem ipsum dolor alt amet, consectetur adpiscing eli C. varbiur at amet pulvinar massa. Maecenas et netus leugiat ante trainage tincium. Lorem ipsum dolor alt amet, consectetur tradipiscing eli C. varbiur at amet pulvinar massa. Maecenas et netus leugiat ante trainage tincium. Fusce dignassin lacus in dui vierra lacina. Nam eu venenata nibn. Nata tesis N. Auto esti ante dui vierra lacina. Nam et venenatis nibn. Nata tesis N. Auto esti ante dui vierra lacina. Nam et venenatis nibn. Nata tesis N. Auto esti ante dui vierra lacina. Nam et venenatis nibn. Done vulputate elementum quam non utrices. Suspendisse bibendum efficiur purus, non tempus risus pretum sed. Aliguam gravida tortor orien, ven purus, non tempus risus pretum sed. Aliguam gravida tortor orien, ven and c. acribitos tesis venenatis nibn. Donee vulputate elementum quam non utrices. Suspendisse bibendum efficiur purus, non tempus risus pretum sed. Aliguam gravida tortor orient, ven aus crismeste leis venenatis. Nata esti ante dui vieren. Donee utrices. Suspendisse bibendum efficiur purus, non tempus risus pretum sed. Aliguam gravida tortor orient, ven aus crismeste leis venenatis nibn. Nata esti ante dui vieren. Donee vulputate elementum quam non utrices. Suspendisse bibendum efficiur purus, non tempus risus pretum sed. Aliguam gravida tortor orient, ven maxi- mocus a chribba tesis solution tur justo, aliguam fengiat felis. Duis u un ca chribba tesis solution aunc, ac fribba tesis solution aunc, ac fribba tesis solution aunc, ac fribba tesis solution turi histo, aliguam fengiat felis. Duis u aunc, ac fribba tesis solution turi pusto, aliguam fengiat felis. Duis u aunc, ac fribba tesis solution turi histo, aliguam fengiat felis. Duis u aunc, ac fribba tesis solution turi pusto, aliguam fengiat felis. Duis u aunc, ac fribba tesis solution turi pusto, aliguam fengiat felis. Duis u aunc, ac fribba tesis solution turi pusto aligua felis. Duis u aunc actificati adipsicing eliste pusto. The mentum test nece metus pretum fibrus. Lorem ipustodor at aunt, consec			
adpiscing elit. Curabitur si ta met pulvinar massa. Maecomas et metus legala tarie tinstgu tincicur. Fusca dignissim lacus in dui viverta lacina. Name u vennatis nich. Nuita taciis. Name u vennatis nich. Name su vennatis nich. Donec vulputate dementum quam non posterio mosteli de la consecteru purus, non tempos risus pretum sod. Alguam gravida tortor lorem, vel maximus oro mosteli de lementum quam non postere otrave. Alguam gravida tortor lorem, vel maximus oro mosteli de lementum quam non pretum fluto. Unale acconsecteru purus. Outigene elementum vivera nuc, a finibus lacus volupat au funce tempus ti pato, alguam fluto taria de la consecteru purus. Durbage usoli patiente elementum vivera nuc, a finibus lacus volupat au funce tempus ti pato, alguam fluto taria de la consecteru purus. Durbage usoli patiente elementum vivera nuc, a finibus lacus volupat au funce tempus ti pato alguam molecult. Elem malesuada moncus valputate. Annean consectetur postere dementum vivera nuc, a finibus lacus volupat au funce tempus ti pato alguam molecult. Elem malesuada moncus valputate. Annean consectetur postere omare. Mauris dignisismi molecult patori dimentum tari nec matus en conserve tari des solitas en enclasse de la patoria de la consectetur poster omare. Mauris dignisismi molesti patoria. Elem malesuada el noncus valputate. Annean consectetur poster omare. Mauris dignisismi molesti patoria. Barne elementum tristige el non elit. Morti prurus fusto, patoria moleculto di purus en elementum tinciduit. Elem malesuada en encus de la patoria difficulta di conse valputate postere omare. Mauris dignismismi delati el non elit. Morti purus ristiga e elementum vivera met, consectetur zidiniscing elit. Nence en nelit. Morti purus ristiga e elementum vivera met, consectetur zidiniscing elit. Nence en elit. Morti purus ristiga e elementum vivera met, consectetur zidiniscing elit. Nence en elit. Morti purus ristiga e elementum viver	Lorem ipsum dolor sit amet, consectetur	Lorem ipsum dolor sit amet, consecte-	Lorem ipsum dolor sit amet, consectetur
massa, Maecenas et metus feugiat ante tristique tincidur. Fusce dignisaria lacus in dui vivera lacina. Nam eu venenatis nibh. Muita facilis. Nunc di triscut dui, vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et i. Peltentesque ac rutum forem. Muita facilis. Nunc di triscut dui. vel lacina et inclus dui dui. Purus, non tempus risus pretum sed. Aliquam gravida tortor forem, vel maxim purus, non tempus fissus pretum sed. Aliquam gravida tortor forem, vel maxim purus, non tempus fissus pretum sed. Aliquam gravida tortor forem, vel maxim purus, non tempus dementum vivera nunc, ac finbus lacus volupat et a. Fusce tempus ferus pretum sed. Aliquam gravida tortor forem, vel maxim purus. Cuisque elementum vivera nunc, ac finbus lacus volupat et a. Fusce tempus ferus fusci pretum sed. Aliquam gravida tortor forem, vel maxim purus. Cuisque elementum vivera nunc, ac finbus lacus volupat et a. Fusce tempus ferus fusci pretum sed. Aliquam gravida tortor forem, vel maxim purus. Cuisque elementum vera nunc, ac finbus lacus volupat et a. Fusce tempus ferus tempus definentin ticiclum. Cuistup elementum vera nunc, amet, consectetur posure orare. Muri dignissim molesti puru. Tistum elementum erat nec metus pretum finbus. Lorem jour dolor at amet, consectetur adjiscing el. Vestibu- tum finbus. Lorem jour dolor at amet, consectetur adjiscing el. Vestibu- tum finbus. Lorem jour dolor at amet, consectetur adjiscing el. Vestibu- tum finbus. Lorem jour dolor at amet, consectetur adjiscing el. Vestibu- tum finbus. Lorem jour dolar at amet, consectetur adjiscing el. Vestibu- puism. Canabtrar	adipiscing elit. Curabitur sit amet pulvinar	tur adipiscing elit. Curabitur sit arnet	adipiscing elit. Curabitur sit amet pulvinar
tistique tincidur. Fusce dignisismi lacus in dui vierra lacinis. Name eu venenatis nich. Nuit laciais i. Nunc id tincidur un venenatis nich. Nuit la tacisis. Nunc id tincidur un venenatis nich. Nuit la tacisi i. Nuice il soluti venenatis nich. Nuit la tacisi i. Nuice il soluti venenatis nich. Nuit la tacisis. Nunc id tincidur un venenatis nich. Nuit la tacisis. Nunc id tincidur un venenatis nich. Nuit la tacisis. Nuit l	massa. Maecenas et metus feugiat ante	pulvinar massa. Maecenas et metus	massa. Maecenas et metus feugiat ante
cui vierra lacinia. Nam eu venenatis nibh. Multa facilis. Nunc is trindicut du, vel lacinia eill. Pellentesque ac rutrum lorem. Donne viuputat elementum quam non utrices. Suspendisse biberdum etificitu vulputate elementum quam non utrices. Suspendisse biberdum etificitu pruns. Consecteur pruns. Consecteur termentum incodum etificitu pruns. Consecteur termentum incodum etificitu termentum incodum etificitu pruns. Consecteur pruns. Consecteur pruns. Consecteur pruns. Consecteur termentum incodum etat nec metus pretum finbus. Lorem ippun door et amet, consecteur adjiscing etif. Vestibu- tim ministe etim entificitu quants donsitiste pretum finbus lacus etificitu pruns. Solicitud etimentum etat nec entificitus consecteur adjiscing etif. Vestibu- tim ministe etim entificitu quants donsitiste pruns. Cansettur adjiscing etificitus consecteur adjiscing etificitus pruns. Cansettur adjiscing etificitus consecteur adjiscing etificitus pruns. Cansettur adjiscing etificitus pruns. Cansettur adjiscing etificitus consecteur adjiscing etificitus pruns. Cansettur adjiscing etificitus etim entificitus etim entificitus pruns. Cansettur adjiscing etificitus etim entificitus etim etim etiti etim etificitus etim etim etificitus etim etim etificitus etim etim etificitus eti	tristique tincidunt. Fusce dignissim lacus in	feugiat ante tristique tincidunt. Fusce	tristique tincidunt. Fusce dignissim lacus in
Nullis facilis. Nunc is tinoidunt du, vel lacria eilt. Pelinetresque ac ruturm lorem. Donce vulputate elementum quam non utrices. Suspendisse bibendum effotur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, non tempus reus pretum sed. Alguan gravida tororo forem, vel maximus orci moleste di. Nulla eu consecteur purus, Duste elementum vivera nunc, es finibus lacus volupat eu. Fusce tempus ementum finicatur. Etam malesuada moncus vulputate. Amenan consecteur posure orare. Mauri di grissis moleste ipsum. Etam elementum erat nec metus pretum finibus. Lorem ipsum dolor st amet, consecteur adpiscing elf. Vestibu- te foro elf. Morti purus fista, pretum molesta i grav. Etam elementum reat nec metus pretum finibus. Lorem ipsum dolor st amet, consecteur adpiscing elf. Vestibu- et non elf. Morti purus risus, coleringue entim. Trust, soleringue entim. Trust, soleringue pretum finibus. Lorem ipsum dolor st amet, consecteur adpiscing elf. Vestibu- terium conserve ex solicitudin cursus eration consector vestibulum purus risus, soleringue entim. Canabia do conserve rutum tristigue entim. Solaris do do conserve rutum tristigue entim. Solaris do do conserve rutum tristigue entim. Canabia do conserve rutum tristigue entit. Nunce a turpi	dui viverra lacinia. Nam eu venenatis nibh.	dignissim lacus in dui viverra lacinia.	dui viverra lacinia. Nam eu venenatis nibh.
Iacinia ell. Pellentesque ac rutrum lorem. Donec vujputate elementum quam non ultrices. Suspendisse bibendum efficitur purus, non tempus risus pretium sed. Aliquam gravida totroi rorem, vel maximus orci moisteli ci. Nulla eu consectetur justo, aliquam lavida totroi rorem, vel maximus orci moisteli ci. Nulla eu consectetur purus, non tempus risus pretium sed. Aliquam gravida totroi rorem, vel maximus orci moisteli ci. Nulla eu consectetur justo, aliquam consectetur purus, non tempus risus pretium sed. Aliquam gravida totroi rorem, vel maximus orci moisteli ci. Nulla eu consectetur purus. Outspue elementum vivera nunc, ac finibus lacus volupat eu Faste tempus tementum tincolum. Etam malesuada moncus vujputate. Alement consectetur poster orane, et finibus lacus volupat eu Fuste tempus tementum tincolum. Etam malesuada moncus vujputate. Alement consectetur pusto, aliquam lavida (Veltam etam) met. consectetur adipiscing etit. Veltam etam eta nuclear eta serve poster orane, eta finibus lacus volupat eu Fuste tempus tementum tincolum. Etam malesuada met. consectetur adipiscing etit. Veltam eta serve poster orane, eta finibus lacus volupat eu etam metamus donora vujputate. Pretum tinbus. Lorem pisum dolor st ent. consectetur adipiscing etit. Veltam eta finibus. Lorem pisum dolor st ent. consectetur adipiscing etit. Vestibut- tum posuere ex solicitudin cursus pretum. status actorior antis sodales et non etit. Moto purus risus, soleringue vestbutum purus orane, nurmi tisque risis, soleringue vestibutum purus filla dolor. Telementatis sodales et non etit. Moto purus risus, soleringue vestbutum purus orane, nurmi trisque risis, soleringue vestibutum purus risis, esteringue vestbutum purus grate, et natis at malesuada purus ci ante et neuro eta ter matis sodales et non etit. Moto purus risus, soleringue vestbutum purus grate, et neuro eta termatis sodales et non etit. Moto purus risus, soleringue vestbutum purus grate, et neuro eta termatis sodales et non etit. Motori purus risus, et neuro eta termatis poster es estas.	Nulla facilisi. Nunc id tincidunt dui, vel	Nam eu venenatis nibh. Nulla facilisi.	Nulla facilisi. Nunc id tincidunt dui, vel
Done vulputate elementum quam non utriceis. Suspendisse bibendum effolur purus, non tempus risus pretium sed. Aliquam gravida tortor forme, vel maximus orci molestie id. Nulla eu consectetur jausa, aliquam favida tortor iorne, vel maximus orci molestie id. Nulla eu consectetur purus, non tempus risus pretium sed. Aliquam gravida tortor iorne, vel maximus orci molestie id. Nulla eu consectetur purus, Disput felis. Duis ut un aor ci molestie id. Nulla eu consectetur purus, Disput felis. Duis ut un aor ci molestie id. Nulla eu consectetur purus, Disput felis. Duis ut un aor ci molestie id. Nulla eu consectetur purus, Disput felis. Duis ut un ca ci finibie tales volutate eu tur justo, aliquam faujati felis. Duis ut purus, Disput felis. Duis ut purus, Disput felis. Duis ut purus, Disput felis. Duis ut purus, Disput felis. Duis ut purus consectetur poures consectetur poures consectetur aligneon molestie igsum. Etam elementum reat nec metus pretum finibus. Lorem igsum dolor sit amet, consectetur adgisceng ell. Vestibu- ti min finibus. Lorem igsum dolor sit amet, consectetur adgisceng ell. Vestibu- ti min finibus. Lorem igsum dolor sit amet, consectetur adgisceng ell. Vestibu- ti min finibus. Lorem igsum dolor sit amet, consectetur adgisceng ell. Vestibu- ti min finibus. Lorem igsum dolor sit amet, consectetur adgisceng ell. Vestibu- ti min elisti elisti elisti a alicitor matis sodales resis. Nunc a turgis orci. Anenan utricise risis, scelerisque vestibulum purus fisis, scelerisque vestibulum purus fisis, scelerisque vestibulum purus fisis, scelerisque vestibulum purus fisis, scelerisque vestibulum purus fisis pesta.	lacinia elit. Pellentesque ac rutrum lorem.	Nunc id tincidunt dui, vel lacinia elit.	lacinia elit. Pellentesque ac rutrum lorem.
ultrices. Suspendisse bibendum effoltur purus, non tempus risus pretium sed. Aliquam gravida tootro lorem, vel maximus ord molestie i d. Nulla eu consecterur justo, aliquam faugiat teils. Duis ut dui purus, non tempus risus pretium sed. Aliquam gravida tootro lorem, vel maximus ord molestie i d. Nulla eu consecterur justo, aliquam faugiat teils. Duis ut dui purus, Durspene termentum triceri fregulat teils. Duis ut dui purus, Durspene termentum schum fergiat teils. Duis ut purus, aliquam faugiat teils. Duis ut dui purus, aliquam faugiat teils. Duis ut dui purus, Durspene termentum triceri mice ord molestie i d. Nulla eu consecterur pusto, aliquam faugiat teils. Duis ut dui purus, Durspene termentum triceri moncus valupate. Aenean consectetur posere onare, Mauris dipission molestie ipsum. Elam elementum reize reize termentum triceri com pour dei schum termentum triceri posere onare, Ausurs dipission molestie ipsum. Elam elementum reize reize termentum triceri com pour dei schules et non elit. Morbi purus risus, scelerisgue et non elit. Morbi purus risus, preturi et di musta, consecterur adjission elit. Ves- terium alterus dellas scelerisgue et non elit. Morbi purus risus, preturin et scelerisgue termentum triceris dignismi teil reize et non elit. Morbi purus risus, preturin et scelerisgue terme reize andissis collesis et non elit. Morbi purus risus, scelerisgue risus, scelerisgue vestibulum purus roize, et nome teils puid adolor. Pelientesgue habitart morbi tistigue senectus et netas et matesuada pretur. Curasti turi di una ac tortor reistibulum purus roize, et netas termetas preturm. Etam elementan et neta termetas preturm. Curasti purus risus, scelerisgue et non elit. Morbi purus risus, scelerisgue risus, scelerisgue vestibulum purus roize et netas termetas preturm. Curasti scolesis et non elit. Morbi purus risus, termetas termetas preturm. Curasti purus risus, scelerisgue et non elit. Morbi purus risus, scelerisgue risus, scelerisgue vestibulum purus roize et netas et matesuada tames ac turpis egestas.	Donec vulputate elementum quam non	Pellentesque ac rutrum lorem. Donec	Donec vulputate elementum quam non
purus, non tempus risus pretium sed. Aliquam gravida totori form, vel makimus orci molestie id. Nutila eu consectetur purus, con tempus risus pretium sed. Aliquam gravida totori orene, vel makimus orci molestie id. Nutila eu consectetur purus. Cusque elementum vierra nunc, a finibus lacus volupat eu. Euce tempus ferus paterne tempus termentum tincifuur. Diseare orange elementum vierra nunc, a finibus lacus volupat eu. Possere orange. Nutila eu consectetur purus. Cusque elementum vierra nunc, a finibus lacus volupat eu. Possere orange. Nutila eu consectetur posure orange. Nutila eu consectetur posure orange. Elementum erat nec metus pretum finibus. Loren igue nodor at amet, consectetur adjoscing elf. Vestibu- tum finibus. Loren igue nodor at amet, consectetur adjoscing elf. Vestibu- tum finibus. Loren igue nodor at amet, consectetur adjoscing elf. Vestibu- tum finibus. Dis vestibuim posare e solicitudin cursus pretum metus solicitadin cursus pretum. Curabitar d ura ac totor matts sodiales en non ettinge sentisticationes e solicitudin cursus pretum matti sodiales en en estisticationes e solicitudin cursus pretum matti sodiales en en estisticationes e solicitudin cursus pretum matti sodiales en en estal consectetur e adjoscing elf. Vestibu- tistica e terno etti, Mora auruis orci. Anenan utificies rissis, soeleristicati vestibuim porure estisticationes e solicitudin cursus pretum rissis, soeleristicati e vestibuitudin purus e solicitudin cursus pretum rissis, soeleristicati e una est en estalitationes e solicitudin cursus pretum rissis, soeleristicati e una est en totales estalitationes e solicitudin cursus pretum rissis, soeleristicati e una esta en totales estalitationes rissis, soeleristicati e una esta en totales estalitationes rissis, soeleristicati e una esta en termestas rissis, soeleristicati e una esta tursis estalitationes rissis, soeleristicati e una esta en talitationes rissis, soeleristicati e una esta en talitationes rissis, soeleristicati e una esta tursis estalitationes rissis, soeleristicationes en	ultricies. Suspendisse bibendum efficitur	vulputate elementum quam non ultric-	ultricies. Suspendisse bibendum efficitur
Aligaam gravida tootor lorem, vel maximus oro: moisteli k. Nulla eu consectetur justo, aliquam favida toorto lorem, vel maximus oro: moisteli k. Nulla eu consectetur justo, aliquam favida toorto lorem, vel maximus oro: ac finibus lacus volupat eu Fusion tempus tementum tincioum. Etam malesuada moncus vujoutate. Aenean consectetur posure o anez, Muuris dipissim molesti justo, aliquam tervitati eu consectetur posure o anez, Muuris dipissim molesti ipsum. Etam elementum vivera moncus vujoutate. Aenean consectetur posure o anez, Norm posure dos moncus vujoutate. Aenean consectetur posure o anez, Norm posure dos entorementum fincio entorementum situati posure o anez, Norm posure dos entorementum fincio entorementum situati posure o anez, Norm posure dos entorementum fincio entorementum situati posure o anez, Norm posure dos entorementum fincio entorementum entorementum fincio entorementum entorementum fincio entorementum posure entorementum situate entorementum fincio entorementum entorementum fincio entorementum entorementum fincio entorementum entorementum fincio entorementum entorementum fincio entorementum entoremen	purus, non tempus risus pretium sed.	ies. Suspendisse bibendum efficitur	purus, non tempus risus pretium sed.
ordi molestie id. Nutile au consectetur justo, aliquam foquat felis. Duis i dui purus. Cuisque elementum viverra nunc, a finibus lacus volupat eu. Fucues tempus termentum tinciduri. Elam matesuada nunc, ac finibus lacus volupat eu. Fucues tempus termentum tinciduri. Elam matesuada porture sublicatione elementum viverra termentum tinciduri. Elam matesuada porture sublicatione elementum viverra amet, consectetur adjoiscing elt. Vestibu- tiam elementum erat nec metus amet, consectetur adjoiscing elt. Vestibu- tium finibus. Loren igua dolor el amet, consectetur adjoiscing elt. Vestibu- tium finibus acces sublicitudi cursus resis. Nance a turgis orci. Anenan utilicies resis, socierisque vestibulum pourus es sublicitudi orarer, virturum tristique nisi. Nunca tinsigue senectus el netasu et matesuada risis. Nance a turgis orci. Anenan utilicies risis anene utilicies egestas. ter estas.	Aliquam gravida tortor lorem, yel maximus	purus, non tempus risus pretium sed.	Aliquam oravida tortor lorem, vel maximus
justo, aliquam feugiat felis. Duis ut dui purus. Ousigue elementum vivera nunc, as finibus lacus volupat eu. Fusce tempus fermentum finicum. Etam malesuada moncus vulputate. Anenan consectetur posure o carez, Mauris dignisism molestie ipsum. Elam elementum nicum tincidum. Elam malesuada moncus vulputate. Anenan consectetur posure o carez. Mauris dignisism molestie ipsum. Elam elementum nicum erat nec metus pretum finibus. Lorem ipsum dole at manet, consectetur posurer ornare. Elam elementum incidum. Elam malesuada manet, consectetur adipsorter of the sector of the sector pretum finibus. Lorem ipsum dole at manet, consecter adipsorter of the sector entropsorter ornare. Elam elementum nicut enter entus pretum finibus. Lorem ipsum dole at anet, consecter adipsorter of the sector entur dole at dole at anet, consecter adipsorter of the sector enture of the sector of the sector enture of the sector entities. Sector ipsum dole at anet, consecter adipsorter et the consecter adipsorter of the sector entities on the sector entities contains actives et non etit. Morth prura finita, sectoring at tissis, sectoring vestibulum pruras finita, sectoring at vestibulum pruras ornare, nurum tristigue entits, scater entur unit sociales et non etit. Morth pruras fisis, sector entits, vestibulum pruras entits sociales et non etits. Nunc a turpis orci. Anenan ultricies i pigla dolor. Pelientesgue habitatt morti tistigue senectus et netus et malesuada unare, consecter unut tristigue nisi. Nunc a turpis erol. Anena ultricies i giala dolor.	orci molestie id. Nulla eu consectetur	Aliquam gravida tortor lorem, vel maxi-	orci molestie id. Nulla eu consectetur
ruus. Ouisque elementum vivera nunc, ac finibus lacus volupat elementum vivera fermentum tincidurit. Elam matesuada noncus vujoutate. Anenan consectetur posure corare. Mauris dignissim molestie gisum. Elam elementum rincidurit. Posure eromate mentum tincidurit. Posure eromate Mauris dignissim molestie porteum finibus. Lorem ipsum doir st amet, consectetur visitum erat nec metus pre- tum finibus. Lorem ipsum doir st amet, consectetur adipiscing elit. Vestibu- tum finibus. Lorem ipsum doir st et non elit. Morbi purus ritus, seleringue et non elit. Morbi purus ritus, seleringue tibulum posurere ex solicitudin cursus pretum. tisus, caleringue vestibulum porusere ex solicitudin cursus setturum fisitopue risis. Nunc a turpis orci. Anenan utificies ingui adoir. Pelientesgue habatart morbi tistigue senectus et netus et matesuada ornare, nurtum tistigue nisi. Nunc a turpis orci. Anenan utificies ingui adoir. Pelientesgue habatart morbi tistigue senectus et netus et matesuada ornare, nurtum tistigue alosi. Nunc a turpis orci. Anenan utificies ingui adoir. Pelientesgue habatart morbi tistigue senectus et netus et matesuada ornare, nurtum tistigue orisi. Nunc a turpis erot. Anenan utificies ingui adoir. Pelientesgue habatart morbi	iusto aliquam feugiat felis. Duis ut dui	mus orci molestie id. Nulla eu consecte-	iusto, aliquam feugiat felis. Duis ut dui
sch misse lacus volupat eu. Fusce tempus fermertum finctur. Etam malesuada moncus vulputate. Anenan consectetur posurer orare, Mauris dignismi molestie ipsum. Etam elementum incidunt. Etam malesuada moncus vulputate. Anenan consectetur posurer orare, Mauris dignismi molestie ipsum. Etam elementum rent nec metus pretum finibus. Loren ipsum dolor sit amel, consectetur adjescing elf. Vestibu- tetim malesuada minolasti ipsum. Etam elementum rent nec metus pretum finibus. Loren ipsum dolor sit amel, consectetur adjescing elf. Vestibu- tetim malesuada minolasti ipsum. Etam elementum rent nec metus pretum finibus. Loren ipsum dolor sit amel, consectetur adjescing elf. Vestibu- tetim malesuada en enter situate enter adjescing elf. Vestibu- et non elli. Morbi prus rinus, soletningua vestibuim prus orare, rumm tristigue risis. Nunc a turpis orci. Anenan ultricies ligui dolor. Pelientesgue habitart morbi tisisus, selerisigue vestibuium prurs giuda dolor. Pelientesgue habitart morbi tisigue senectus et netus et malesuada orarer, rutrum tristigue nisi. Nunc a turpis orci. Anenan ultricies ligui dolor. Pelientesgue habitart morbi tisigue senectus et netus et malesuada orarer, rutrum tristigue nisi. Nunc a turpis orci. Anenan ultricies ligui dolor. Pelientesgue habitart morbi	nurus. Quisque elementum viverra nunc	tur justo aliquam feugiat felis. Duis ut	nurus. Quisque elementum viverra nunc
tementum tinciouri. Etam matesuada noncus vujoutale. Annan consectetur posure ormare. Mauris dignissim molestie gisum. Etam elementum enclutur. benous vujoutate. pisum. Etam elementum enclutur. posure ormare. pretum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st amet, consectetur adjisicing et Vestbu- tum finibus. Lorem iguum doir st et non et M. Morti gruum status, seleringue et non et M. Morti gruum status, seleringue tobulum posurere ex solicitudin cursus et non et M. Morti gruum status, seleringue mattis sociales et non etil. Morti gruurs finis, seleringue mattis sociales et non etil. Morti gruurs finis, eseleringue mattis sociales et non etil. Morti gruurs finis, eseleringue mattis sociales et non etil. Morti gruurs finis econ en titrices liguid doir. Pellemesque habatart mori tistigue senectus et netus et matesuada ornare, rutrum tristigue nisi. Nunca turpis eritas et netus et matesuada ornare, rutrum tristigue of status.	ac finibus lacus volutoat eu. Eusce tempus	dui purus. Quisque elementum viverra	ac finibus lacus volutrat eu. Eusce tempus
moncus vujudate. Annean consectetur posuere correz. Muuris dignismi molestie ipsum. Elam elementum erat nec metus pretum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- tum posuere existicuitant adipsicing el. Vestibu- tum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- Eliam elementum erat nec metus pretum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- tum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- tum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- tum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- tum finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- entim finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- entim finibus. Lorem ipsum dolor at amet, consectetur adipsicing el. Vestibu- curabitur at una ac tortor matis sodales ensitis sodales en tone elit. Morbi purus fisi. Nunc a turgis orci. Anenan utificies i sis, scelerisque vestibulum purus grave, runtum trisdigue ensit. Nunca turgis erot. Anenan utificies i puip eord. Anena utificies i puip eor	fermentum tincidunt. Etiam malesuada	nunc, ac finibus lacus volutoat eu	fermentum tincidunt. Etiam malesuada
posure oranze. Mauris dignissim molestie gisum. Etain elementum ent ne metus pretum finbus. Lorem iguum dolor st amet, consectertur adipiscing et l. Vestbu- tum ficinus. Lorem iguum dolor st amet, consectertur adipiscing et l. Vestbu- tum ficinus. Lorem iguum dolor st amet, consectertur adipiscing et l. Vestbu- tum ficinus. Lorem iguum dolor st amet, consectertur adipiscing et l. Vestbu- tum ficinus. Lorem iguum dolor st amet, consectertur adipiscing et l. Vestbu- tum ficinus. Lorem iguum dolor st et non etti. Morti purus risus, seelarisgue et non etti. Morti purus risus, seelarisgue testbulum purus oranze, rumum fistique risis. Nanca turpis orci. Anenan utificies iguid adolor. Pelientesgue habitant morbi tistigue senectus et netus et matesuada prestum fistigue entiti tistigue senectus et netus et matesuada prestum fistigue entiti tistigue senectus et netus et matesuada prestum fistigue entiti tistigue senectus et netus et matesuada prestum fistigue entiticies i rubasiante prestum fistigue entiticies i rubasiante prestum fistigue entiticies i rubasiante te netus et netus prestum fistigue entiticies i rubasiante te netus et netus et netus prestum fistigue entiticies i rubasiante te netus et net	rhoncus vulnutate. Aenean consectetur	Fusce tempus fermentum tincidunt	rhoncus vulnutate. Aenean consectetur
psum. Elam eikenentum erat nec metus Annean consecterur posume cranares. ppum. Elam eikenentum erat nec metus pretum finbus. Lorem ipsum dolor sit Mavria dignismism molesto ipsum. pretum finbus. Lorem ipsum dolor sit amet, consectetur adipsicing elit. Vestibu- Eliam eikenentum erat nec metus pre- tum finbus. Lorem ipsum dolor sit um posurere ex solicitudin cursus pretum. Curabitur d uma ac tortor mattis sodales et non elit. Morb prunz risus, soleristigue presi Nanca turgis orci. Anenan utificies risis. Nanca turgis orci. Anenan utificies risis. Anena at utificies risis. soleristigue estibutur ovasitibutum pourse estibutur tifisigue doore. Pelientesgue habitant morb risis, soleristigue an estibuture un estibuture tifisigue senectus et netus et malesuada prije ciri. Anenean utificies ripis ciri. Anene utificies ripis erd. Anenean utificies ripis erd. Anenean utificies ripis ciri. Anene utificies ripis ciri. Anene utificies ripis ciri. Anene utificies ripis erd. Anenean utificies ripis ciri. Anene utificies ripis ciri. Anene utificies ripis ciri. Anene utificies ripis erd. Aneneu utificies ripis erd.	nosuere ornare. Mauris dinnissim molestie	Etiam malesuada rhoncus vulnutate	nosuere ornare. Mauris dignissim molestie
pretum finbus. Lorem psum dolor st annet, consecter adaptiscing et Vestibu- tiam et annet annet annet adaptiscing et Vestibu- tiam et annet eran et annet an	insum. Etiam elementum erat nec metus	Asnean consectetur nosuere ornare	insum. Etiam elementum erat ner metus
amet, consectetur adipiscing elt. Vesitibu- tium posure es solicitadri cursus preturn. Curabtur i d'urna ac tortor mattis sodales et non elt. Morbi purus risus, sceleritague tibulum posure es solicitadri cursus preturn. Curabtur i d'urna ac tortor mattis sodales et non elt. Morbi purus risus, sceleritague vesitibulum purus somare, ruirum instique mattis sodales et non elt. Morbi purus risus, sceleritague vesitibulum purus somare, ruirum instique mattis sodales et non elt. Morbi purus risus, sceleritague vesitibulum purus somare, ruirum instique mattis sodales et non elt. Morbi purus sus, sceleritague vesitibulum purus tisis, sceleritague vesitibulum purus tisis, sceleritague vesitibulum purus tisisque sanectus et netus et matesuada tames ac turpis ogestas. tursis er ettas	pretium finibus. Lorem insum dolor sit	Mauris dignissim molestie insum	pretium finibus. Lorem insum dolor sit
tem posuere ex solicitadin cursus preturn. Curabitur d'una ac tordr matis sodales et non ell. Morb porus risus, soletrisgue et non ell. Morb porus risus, soletrisgue et non ell. Morb porus risus, soletrisgue et non ell. Morb porus risus, soletrisgue restbulum porus ormer, nurm tristique risis. Nanc a turpis orci. Anenan ultricles giud adolo: Pelientesgue habitant morb trisis, soletrisgue vestibulum purus sis, soletrisgue vestibulum purus sis, soletrisgue vestibulum purus trisis, soletrisgue vestibulum purus trisis, soletrisgue vestibulum purus trisis pestere et non ell. Morb purus singue actor presente trisis pestere. trisis pestere et non ell. Morb purus sigua dolo: Pelientesgue habitant morb trisigue ensectus et netus et netus et netus et netus et netus trisis pester. trisis pestere.	amet consectetur adiniscina alit Vestibu-	Etiam elementum erat nec metus ore-	amet consectatur adiniscino elit Vestihu-
Curabitur id urna ac tortor mattis sodales et non elit. Morto purus riusu, sceletriague vestibulum purus somer, ruium intisque risi. Nunc a turpis orci. Areneran utificies igual doito: Pelientsque harbantam morti tistique senectus et neutes et malesuada tames ac turpis greats.	lum nosuere ex sollicitudin cursus pretium	tium finibus. Lorem insum dolor sit	lum nosuere ex sollicitudin cursus pretium
et non ell. Morb prura risus, celerinque tibulum posuere ex solicitudin cursus et mon ell. Morb prura risus, celerinque vestibulum prura comer, nurum ristique pristim. Curabitur di una actoror vestibulum prura sinare, nurum ristique antitis solales et non ell. Morb prura sinare, nurum ristique pristim. Curabituri di una actoror vestibulum pruras ornare, nurum ristique antitis solales et non ell. Morb pruras il qui adoit. Pelientesque habitant morbi tistique senectus et netas et maissuada to arrare, nurum tristique nisi. Nunc a turpis ord. Anenan ultricies il qui adoit. Pelientesque habitant morbi tistique senectus et netas et maissuada to arrare, nurum tristique nisi. Nunc a turpis ord. Anenan ultricies il quido doit. Pelientesque habitant morbi tistique senectus et netas et maissuada to prise ord. Anena ultricies il qui adoit.	Curabitur id uma ac tortor mattis sociales	amet consectatur adiniscing elit Ves-	Curabitur id uma ac tortor mattis sociales
vestbulum puos onnare, nurum tristique nisi. Nunc a turpis orci. Anenan utificies igual doito: Pelientesque habitant mobi igual doito: Pelientesque habitant mobi tristique senectus et netus et malesuada ornare, nurum tristique nisi. Nunc a unpis orci. Anenan utificies igual doito: Pelientesque habitant mobi tristique senectus et netus et malesuada ornare, nurum tristique nisi. Nunc a tristique senectus et netus et netus et malesuada	at non alit. Morhi ounus risus, scalarisqua	tibulum posuara av sollicitudio cursus	at non alit. Morbi nunus risus, scalarisqua
risi Nanca turpis orci. Anenan utiricies in mattis sociales et non elit. Morti purus init. Nanca turpis orci. Anenan utiricies igula doto: Peliotesque habitant morbi tistigue senectus et netus et malesuada ames acturpis egostas. Uniformativa estanti du adoin doto reliteresque de habitant morbi tistigue senectus et netus et malesuada pris orci. Anena utiricies iguida doto.	vestibulum nunus ornara, nutrum tristinue	pratium Curabitur id uros ac tortor	vestibulum nurus ornere, nitrum tristique
nau: notice a tuppo dec investan duridadi en instan advata en vesto parse inaci, naciona duridadi en instan advata en esta ente esta esta esta esta esta esta esta es	niej Nunc a turnie orni. Aenean ultricies	mattis endales et non elit. Morbi nurue	nisi. Nunc a turnis orci. Aenean ultricies
tistique senectus et netus et malesuada ornare, rutrum tristique nisi. Nunc a tristique senectus et netus et malesuada fames ac turpis egestas. turpis orci. Aenean ultricies ligula dolor. fames ac turpis egestas.	ligula dolor. Pellentesque habitant morbi	risus scelerisque vestibulum nurus	ligula dolor. Pellentesque habitant morbi
fames ac turpis egestas. turpis orci. Aenean ultricies ligula dolor. fames ac turpis egestas.	tristique senectus et netus et malesuarta	ornare rutrum tristique nisi. Nunc a	tristinue senectus et netus et malesuada
tannes de la pre effertas. Tannes de la pre effertas.	fames ac turnis edestas	turnis orci. Aenean ultricies ligula dolor	fames ac turois enestas
Pellentesque habitant morbi tristique	annes as ankis silverings	Pellentesque habitant morbi tristinue	innes as imple strongs.
senartis et natis et malesunda fames		senectus et netus et malesuada fames	
ar funcio anastas		ac turnis agestas	

Figure 2. Example of the experiment, Helvetica is used on the column in the left, Univers on the center, and Arial on the right. Source: Author. 2020

The two steps previously serve to gather data from different methods. The results from the two methods are then compared to provide a conclusion and also closing argument for the study.

DATA DESCRIPTION & DISCUSSIONS

Measurement

On doing the measurement, the author set all the letters and placed them side by side (Figure 1). By doing so, the author can detect whether there were noticeable differences that need measuring or not. Some letters from the three typefaces were

similar, such as in the letter 'I', but for some letters, such as 'K' the differences were quite significant.

After determining what letter needs to be measured, the author then measured each necessary part for analysis. The typeface that is ranked first receives three points, the second receives two points, and the last typeface receives one point. The points will be used to accumulate and rank the final typeface. Each letter result and description can be seen in Table 1.

Table 1.	Measurement Analysis Results for Each Letter			
Letters	Description	Arial	Helvetica	Univers
A	 Univers had lower bars, hence creating a bigger closed counter area compared to the others. Arial had bigger counter width to overall width ratio compared to Helvetica 	2	1	3
В	 Ranking based on counter width to overall width ratio 	2	3	1
С	 Univers had the biggest aperture Arial had the biggest counter width to overall width ratio 	2	1	3
D	All three typefaces had a similar design	N/A		
E	 Ranking based on the difference between the longest bar and the shortest bar. 	3	2	1
F	 Ranking based on the difference between the longest bar and the shortest bar. 	3	2	1
G	 Helvetica had the biggest aperture Univers had the biggest counter width to overall width ratio 	1	3	2
Н	All three typefaces had a similar design	N/A		
	All three typefaces had a similar design	N/A		
J	All three typefaces had a similar design	N/A		
K	 Ranking based on counter width to overall width ratio 	2	1	3
L	All three typefaces had a similar design	N/A		
Μ	 Ranking based on bottom counter width to overall width ratio 	2	1	3
Ν	All three typefaces had a similar design	N/A		
0	 Ranking based on counter width to overall width ratio 	3	2	1
Ρ	 Ranking based on counter width to overall width ratio 	3	2	1
Q	 Ranking based on counter width to overall width ratio 	2	3	1
R	 Arial had a distinct diagonal stroke that helps it is legible, and in this case, readable Helvetica had a bigger counter width to overall width ratio compared to Arial. 	3	2	1
S	 Univers had the widest aperture Arial Had bigger counter width to overall width ratio compared to Helvetica 	2	1	3
Т	All three typefaces had a similar design	N/A		
U	All three typefaces had a similar design	N/A		
V	All three typefaces had a similar design	N/A		
W	 Ranking based on bottom counter width to overall width ratio 	3	1	2
X	All three typefaces had a similar design	N/A		
Y	All three typefaces had a similar design	N/A		
Z	All three typefaces had a similar design	N/A		

Source: Author, 2020

From Table 1, Arial earns a total of 35 points, while Helvetica earns 28 points and Univers 27 points. Based on the measurement, it can be concluded that Arial is a more readable typeface then Helvetica or Univers. The decision to rank each typeface was mostly by the ratio of letter width to the biggest visible counter's

width. In some cases, the result of the calculation may seem visually inaccurate as some letters had distinct features that may help them be more legible and also readable.

Experiment

The results of the experiment can be seen in Table 2.

Table 2. Experiment Results				
Respondent	12/14.4pt	10/12pt		
Group				
1	Helvetica	Helvetica		
2	Univers	Arial		
3	Univers	Univers		
4	Arial	Helvetica		
5	Arial	Arial		
6	Arial	Helvetica		
7	Univers	Univers		
8	Helvetica	Helvetica		
9	Univers	Univers		
10	Helvetica	Helvetica		
11	Univers	Univers		
12	Helvetica	Helvetica		
13	Univers	Univers		
14	Univers	Univers		
15	Arial	Arial		

Source: Author, 2020

From the table we can see that for the first scenario (12/14.4pt), Univers had the most votes, 7 out of 15 or 46.67%, while Helvetica and Arial both shared 4 votes each. For the second scenario (10/12pt), Helvetica and Univers had 6 out of 15 votes or 40% each, while Arial only had 3 votes or 20%. When both tally are added, Univers lead with 13 out of 30, or 43.33%, Helvetica 10 out of 30, or 33.33%, and Arial 7 out of 30, or 23.33%.

While most respondents provide the same answer for the two different scenarios, some groups provided a different answer. This comes to show that for some of the respondents, some typeface performs differently on different sizes when compared.

Discussions

From the measurement, it can be seen that somewhat Arial is the superior typeface compared to Helvetica and Univers. However, from the experiments, respondents voted more on Univers and Helvetica compared to Arial. The result of the two data collecting method shows contradictory effects that actually can be attributed to some limitations of the research.

- 1. On the measurement, the author had only selected several metrics or indicators for deciding which typeface triumphs other; however, there are more metrics available to calculate in more detail.
- 2. In the experiments, the number of respondents could be increased to get more data. The diversity of the respondents may also be necessary to get better data, as the respondents of the study are mostly students, they may share similar preferences. The way data is collected can be more personal and individualistic, instead of grouping the students, each student can be asked to vote.

CONCLUSION

Arial, Helvetica, and Univers are designed differently by different designers in different contexts. Measurements made by the author concluded that Arial is more readable as it had better overall width to counter the width ratio on most of its letters. However, experiments where students are asked to pick which text is more readable, more students opted for Univers and Helvetica. These contradictory results support that, perhaps, the visual form of a letter may be perceived optically different. While calculations indicate one result, yet human perception shows a different result.

This raises new questions for further researches to get more data and to obtain a more solid conclusion. The number of letters to measure may also be increased, as this study only focuses on uppercases from each typeface. It should also be noted that the measuring method and parameters at this stage are still on trial, therefore a different measuring method may yield a different result. In this stage, the author's study concluded by stating that Arial may have better potential to be more readable compared to Helvetica and Univers. This, however, does not suggest that Arial is superior compared to the other typefaces. This research does not include visual unity between letters in a typeface, something that Helvetica and Univers may be better at.

In the end, the study meant to open new ideas on researching typefaces and typography. While further study may be necessary, the author believed that the results of this research can serve as a starting point for further researches.

ACKNOWLEDGEMENTS

The author would like to thank Universitas Pelita Harapan (UPH) and Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) UPH for the support and the opportunity to conduct this research. This research, P-017/SoD/I/2020, is funded by Universitas Pelita Harapan.

REFERENCES

- Carter, R., Meggs, P. B., Day, B., Maxa, S., & Sanders, M. (2015). *Typographic Design: Form and Communication* (6th ed.). New Jersey: Wiley.
- Hananto, B. A. (2019). Tinjauan Karya Desain Poster Quotes dalam Mata Kuliah Tipografi Dasar. *Jurnal Desain*, *6*(3), 195–206.
- Hustwit, G. (2007). Helvetica. Retrieved from https://www.hustwit.com/helvetica
- Jury, D. (2006). What is Typography? Mies: Rotovision.
- Landa, R. (2011). *Graphic Design Solutions* (4th ed.). Boston: Wadsworth Cengage Learning.
- Martin, B., & Hanington, B. (2012). Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publisher.
- Ruder, E. (1982). *Typography A Manual of Design* (4th ed.). Switzerland: Niggli Verlag.
- Strizver, I. (n.d.). Arial vs. Helvetica. Retrieved July 16, 2020, from Fonts.com website: https://www.fonts.com/content/learning/fyti/typefaces/arial-vshelvetica
- Strizver, I. (2006). *Type rules!: the designer's guide to professional typography* (2nd Editio). New Jersey: John Wiley & Sons.
- The Univers of Helvetica: A Tale of Two Typefaces. (2019). Retrieved July 16,

2020, from PrintMag website: https://www.printmag.com/post/univers-of-helvetica-history#:~:text=Univers was intrinsically superior to,as Neue Helvetica in 1982.

Tselentis, J. (2011). *Type, Form & Function*. Massachusetts: Rockport Publisher.

Woods, R. J., Davis, K., & Scharff, L. F. V. (2005). Effects of Typeface and Font Size on Legibility for Children. *American Journal of Psychological Research*, *1*(1), 86–102.