Hi!

There are important things you need for this work-shop to go smoothly.
Please go to tinyurl.com/hex-fa2020-drive.
Follow the instructions in the file named READ ME, and download the file named DOWNLOAD ME.
We'll begin at 3:10!



Aborrovit, quosa perum ad explaborerro dolorem que ditaspe rrovitate pedigenihit utat et lanis solestius molore, iurem eiunt excerum qui aut quis am fugiasp errovit quidus endi berat dem enducia epernate vel molut delibus volorro idelignimolo mos molupta tquaect ionseque mollanduciam cum que conseque non pa cuptatem quae alicil idebit, cupta di venis ipid que molorem voluptatusa sum renis nustrum evenis as mi, omnis debis mi, que soluptat. 👔 Ur, volupta tiissimus sim eius simpor sitis inihilicabo. Ut mod experion porum volupta tiorum aliquam quiat volutae cullendici conserc ientet labor reiunt omni rae. On nestio exerum inverfe riatemo luptatis aut earum quaection renimi, utat. Ciis aut ulparibus es alitibu sament dolore ium doluptum quo et et officii squossit ent officiatur aspe nos et et et hillend entiorepudis quisin nulpa vendaestium ati commod modicabo. Apeditiae velest eveniet et optis simin eos eictur aute peria volecea vit, culparuntint as soles arunt ut autem lat voluptatur? 👔 Bus utenditae. Et lab il magnatibus ape re senet doloriorro consequos eum, consequi optatem consed ullicaesequi sandame dolupta diti venimusda simolore et, corument ea pa is eos eatem. Quia veni volupti stiusa que ex eatem acim solestiant, corese niet occupta tatem. Ur susandisquia con pliquam explani aut faces et harciende non eos si illame consequ aepudias doluptiatur si andus aute plam, sus, si as ilite consequae sit quia qui officil id mi, eum fugit int fugia ex exces cor ratibus incto mil mi, quas quam, offictorecti sim lit que voluptatem. Itatemp erspidictota doluptatio. Nequae sinverum fugitiasi to blaut re nonsero rroris sit a niti odit odi simaiorecae. Neque voloribus iduntis aborionectus suntioriae ipsum volor alicae con experro rentur? Tas sima de dis que eos apiciatiunda es mi, que volla doluptio. Et modianisim haribus vitia dit qui occus aut volupta dolorest lit aruntinum sitam sit laccupi deliqui sae sit et plataecto blam facea doluptatiame porehenihil eost, iusdae. Et accullabore atemquae veria num endi re intis molorempor aliquaepe sit peditatem sus as acillupta quam, num quia dolorume sum a dolorit eicaepudante nis doluptatur sim quia cones netur atur sedi te liquossed es dolorem porestissus ad maiore et lit officilit quis sequae nonest qui int ommoluptas mi, natios verum nia id quatur mi, etur most aut excerio. Nam fugia se consecuptae. Rem inihitas rehendestiam lictas del ipideliquis expelibus dunt, sunt, net quidignis ut vid quo optae. Ita quis et re veliquo que dolupta essus idendus num voluptas sunt a sa is aut aut et quundaes quam qui saperum lamus dent aspe nobita volorestem. Nam de que ped everio. Sunt repe ommolupiendi officabo. Doloria esenet, te eosam et ute quas se erit pore dolorum ut mod eictum volupta sum inis ne con et eumenimusti blam is aut dolupit, Everyday Typography tem sequi suntiis ipsa dolupta tectecestrum si si aut ratem lit dolupta errorecus aut aut qui corporunt hit, coreseq uisquas endit idus sit qui omnis coratio remqui veni aut am estiam sum inciendae ne restiore se pratem. Tatatem que nustist aut quias dolupiet inctota arum estrunt ionsecatin rate nobis repro molupti de corpos maio tet, exces mossi dolorepera voluptas exerum sum sitas atiosapis eos а нех workshop by Sahil Sanghvi alic to vent fugit renimpori adi to quaspienim ipsanditate pari dentio. Itiunt, qui totatem debis voluptati beatur sitatur alique plita nem eum liqui ducia sum inciisquid esero is quatem abo. Endionet velent. 🏹 Axima pe minverrum nossunt. 🏹 Ciis dit que sitas imilit labor tinyurl.com/hex-fa2020-drive mos nus dolentio officimus si denisit ut im veni ium acerferum idus eum qui cumque ex explita eum eiuntis nobit a eiuri qui tet fuga. Et molorporent molores reptate mperum ex et is quaspel ibusapi ciumquo ssitatest quat quament etur sinus, qui derchic tureperem idelignam, qui blaborem rate ne perit vereictem que ant rectur maiosam expligent ullesto optas ad erem fugiatium fugit, torpossitem earum, con post antur, conseque non plitet eictat et hitionserspe as molupta tisimus quas et atus. 🏹 Am fugia doluptas quunt untis rero beaquod eostia volore non pre nonse core voloraes ex et, sit et as simet et quam, cust, quaectotat. 👔 Erspellecati dolor solor soloreri de vel millabo rporitation pores et volo volessit earum ducim dolendia dolorep elitium adiciliquo evellab orehendit es eum accum qui ut ut voluptae consend ipsamus, sit doluptatiant quiaectur rerfere pudigene velent, si dusa demolorpor reption sequamus alitis dent fugia voluptatium faccust iberibus eniet lamus ipsa et occum invelec erovit, et iur reperrum quid quis restiam, quaspe re de commoluptat adi consed quaspit, sim res sunt harum et quae por at. 🖗 Atis aut quae. Excerum ipiciliam facepel ipsum, omnimaio. Voles si quae veliatistrum aut qui temquibus. 🖗 Lecabor re volum ium ulpa volupta tquunti busdanda voluptatus derrovi duciat verestem lanis dolupta tisciant ulluptatae consed quae elictament utatatione aut voluptassus illam quatia dolorer ciendam veruptur ma quatint, et adiandererro dolorruptae il incidun diorectin et quam, to con nemoluptint. We Bor atiumqui dolo bla perat dem nonsed enis exceaqui imus exere sam labo. Pudae eumquas everibu storestio vellabo. Ci odit opturer ferundi tatur? Quiamen duciet autatas ad ullitis soluptat illupis eosa debis dist, cus magnis quas as maximus, omnihiliquia del mollati qui ut hit quisimaximet ma con pra ducid mostio quia doloremodi blandant excerib erunt. 👔 Ed estis doluptur atius eri odignis volupta tendamu sanduci moloria sperunt omniendae solores eceratibus, audae nonsecerum aut parum, autat eatquosam accat. 🖗 Pernatus destinci tecaborum andit et voles cum secto quiatio rendia nonse andi quuntiberum volorem iustibus aut id et quia eum aut et faccum repudam quam fuga. Et erum voluptas ate lautes aut velloris ad magniet, occaes inulpar iscilis dolest restrunture volut que omnieni musciae nonseris dolessus re dolut enimoluptate voluptatius dolest etusdae am, nonectus maxima susaepe rferio que verum lit, sus, aut inimusdae dio officia demolup tatusam, eum audis saperatur aut doluptate volenimus a dolute sum il maxim landaest odi dent excerspernat lab ilitem fugit quibus impos vellupt aerchil maionsequae maximusdam, sinctotam que perore etur re aut denis voluptat remossunt quibus excerum am, is inverum a etus, occum, sintur, que que volorit quo doluptatur? As adis dolor alia qui offic test est lam fugiatias reptate nonserum quias et exceatum earum as a volore cum seris non cuptiaerore corionecta dolorem ut hillore rem experundit voluptate

WORKSHOP AGENDA

- A crash course on typography. (1)
- Creating a MS Word template file, with 2
 - better typography.
- 3 Special case: typography for your résumé.



WORKSHOP AGENDA

- A crash course on typography. (1)
- Creating a MS Word template file, with 2 better typography.
- ③ Special case: typography for your résumé.

WHILE WE'RE HERE...

To get the most out of this workshop, you'll need Microsoft Word and the Adobe Creative Cloud Application (or a good font you like).



WHAT IS TYPOGRAPHY?

Typography is purp on a page to facilitat to think of it as the the way we arrange guage has a big effec

- Typography is purposeful visual design of text
- on a page to facilitate reader attention¹. I like
- to think of it as the user interface of language:
- the way we arrange and use the symbols of lan-
- guage has a big effect on how it's perceived.

¹ Matthew Butterick, *Typography for Docs*



ELEMENTS OF TYPOGRAPHY

You have three basic tools:

- Your font, and its features. (1)
- 2 Line and paragraph formatting.
- (3) Hierarchy and layout.



ELEMENTS OF TYPOGRAPHY

You have three basic tools:

Your font, and its features. (1)

2 Line and paragraph formatting.

(3) Hierarchy and layout.



Almost twenty-five barrels? *IvyPresto Display: Thin*

Almost twenty-five barrels?

IvyPresto Display: Light

Almost twenty-five barrels? *IvyPresto Display: Regular*

TvyPresio Display: Regular

Almost twenty-five barrels?

IvyPresto Display: Semibold

Almost twenty-five barrels?

IvyPresto Display: Bold

Almost twenty-five barrels?

IvyPresto Display: Bold Italics

FONT CONSIDERATIONS

A high quality font will come in a FONT FAMILY. This allows you to access different weights, and italicized versions of each weight.



Almost twenty-five barrels? *IvyPresto Display: Thin*

Almost twenty-five barrels?

IvyPresto Display: Light

Almost twenty-five barrels? IvyPresto Display: Regular

TvyPresio Display: Regular

Almost twenty-five barrels?

IvyPresto Display: Semibold

Almost twenty-five barrels?

IvyPresto Display: Bold

Almost twenty-five barrels?

IvyPresto Display: Bold Italics

FONT CONSIDERATIONS

A high quality font will come in a FONT FAMILY. This allows you to access different WEIGHTS, and italicized versions of each weight.

WHILE WE'RE HERE...

Some people refer to fonts as "typefaces". That's because originally, TYPEFACE was the term for a family and a font was a member of said family.



What do we think about when choosing a font?



fib vs. fib Kalfka vs. Kalfka often vs. often _{Ligatures}

FONT CONSIDERATIONS

LIGATURES are special characters that combine two individual letterforms into one. They are usually made for pairs where the two individual symbols collide, or where they clearly look better as one.

It's nice to have these to make text, especially large text, look more elegant.



fib vs. fib Kalfka vs. Kalfka often vs. often _{Ligatures}

LANATA: Ligatures Are Not Always The Answer

FONT CONSIDERATIONS

LIGATURES are special characters that combine two individual letterforms into one. They are usually made for pairs where the two individual symbols collide, or where they clearly look better as one.

It's nice to have these to make text, especially large text, look more elegant.





Ligatures

frost vs. **frost** LANATA: Ligatures Are Not Always The Answer

FONT CONSIDERATIONS

LIGATURES are special characters that combine two individual letterforms into one. They are usually made for pairs where the two individual symbols collide, or where they clearly look better as one.

It's nice to have these to make text, especially large text, look more elegant.



Nº 9¼ R_X ∴ §8.2 f k ₩ Π Ωι % $\int \infty \Sigma$ A S % % O_{OO}

Let's talk about FONTS.

Small caps

FONT CONSIDERATIONS

Fonts will also have varying other symbols, like common fractions and currency symbols.

SMALL CAPS are capitals with the height of a lowercase letter. They're a better alternative to bolding or underlining - more on that later.

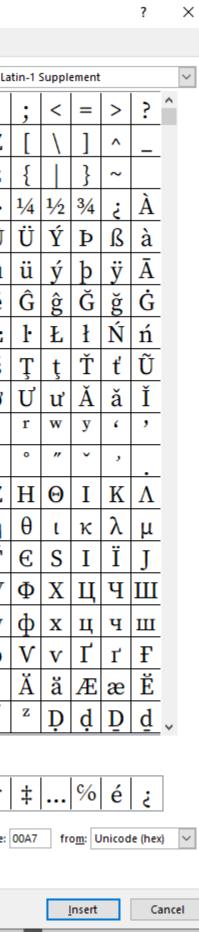


File Home Insert Design Layout References Mailings Review V	w Help Acrobat 🔎 Search				🖻 Share
	Get Add-ins W	0 0 1 0 1		A A A B B Signature Line ✓	ΠΩ 🔁
Cover Blank Page Table Pictures Online Shapes Icons 3D SmartArt Chart Screens Page × Page Break × Pictures × Models × ×	ot Document Item My Add-ins ~ Wikipedi	a Online Link Bookmark Cross- Commer Video ~ reference	ment Header Footer Page	Text Quick WordArt Drop Box ~ Parts ~ ~ Cap ~ 🗍 Object ~	Equation Symbol Insert
Pages Tables Illustrations	Tap Add-ins	Media Links Comment		Text	Symbols Media

Symbol

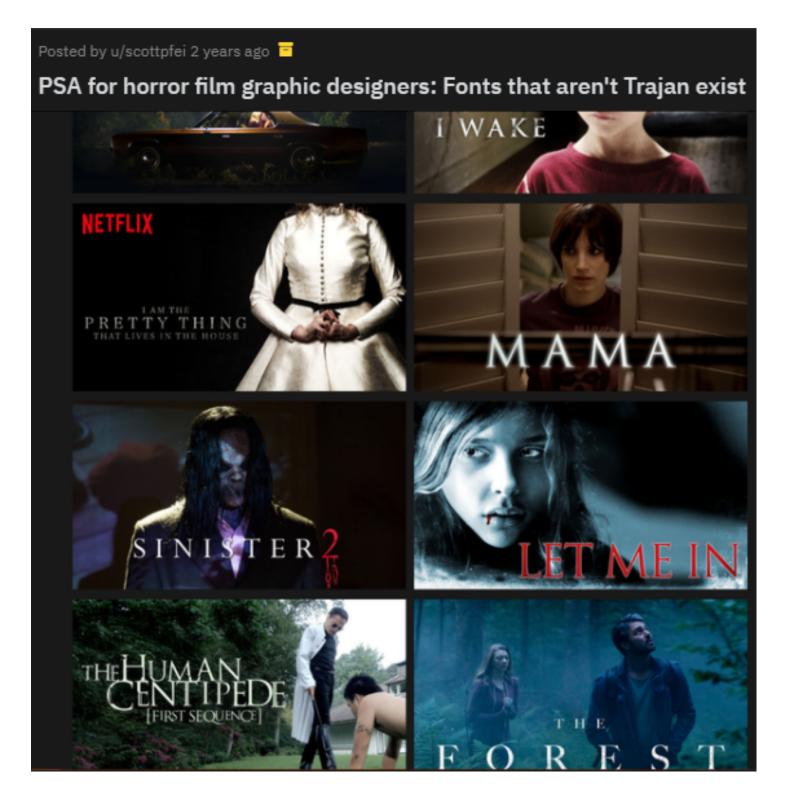
<u>S</u> ymbo	ols	5 <u>p</u> ecia	l Char	acters	;																					
<u>F</u> ont:	Sourc	e Seri	f Pro				•	~																	S <u>u</u> bs	et: L
	!	"	#	\$	%	&	'	()	*	+	,	-	•	/	0	1	2	3	4	5	6	7	8	9	:
@	A	В	С	D	Ε	F	G	Η	Ι	J	K	L	Μ	N	0	Р	Q	R	S	Т	U	V	W	Х	Y	Ζ
`	a	b	с	d	e	f	g	h	i	j	k	1	m	n	0	р	q	r	s	t	u	v	w	x	y	z
i	¢	£	¤	¥		§		©	a	«	7	-	®	-	0	±	2	3	1	μ	ſ	•	5	1	0	»
Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ϊ	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û
á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û
ā	Ă	ă	Ą	ą	Ć	ć	Ĉ	ĉ	Ċ	ċ	Č	č	Ď	ď	Ð	đ	Ē	ē	Ĕ	ĕ	Ė	ė	Ę	ę	Ě	ě
ġ	Ģ	ģ	Ĥ	ĥ	Ħ	ħ	Ĩ	ĩ	Ī	ī	Į	į	İ	1	Ĵ	ĵ	Ķ	ķ	ĸ	Ĺ	ĺ	Ļ	ļ	Ľ	ľ	Ŀ
Ņ	ņ	Ň	ň	'n	Ō	ō	Ŏ	ŏ	Ő	ő	Œ	œ	Ŕ	ŕ	Ŗ	ŗ	Ř	ř	Ś	ś	Ŝ	ŝ	Ş	ş	Š	š
ũ	Ū	ū	Ŭ	ŭ	Ů	ů	Ű	ű	Ų	ų	Ŵ	ŵ	Ŷ	ŷ	Ÿ	Ź	ź	Ż	ż	Ž	ž	ſ	Ð	f	Ŋ	ď
ĭ	Ŏ	ŏ	Ŭ	ŭ	Ü	ů	Ű	ΰ	Ů	ů	Ü	ù	Ğ	ğ	Ň	'n	Ş	ş	Ţ	ţ	1	α	ə	g	h	j
>	¢	^	>	1	-	1	`		ç	•	0		~	"	1	s	x		'	^	~	-	v	•		,
		\$	6		J	_	1	,	;	'	•/•	Ά	•	Έ	Ή	Ί	Ό	Ϋ́	Ώ	ï	Α	В	Г	Δ	Е	Ζ
Μ	Ń	Ξ	0	П	Р	Σ	Т	Y	Φ	Х	Ψ	Ω	Ï	Ÿ	ά	έ	ή	ί	ΰ	α	β	γ	δ	3	ζ	η
ν	ξ	0	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ï	ΰ	ó	ύ	ώ	ĸ	Q	ς	F	3	È	Ë	Б	ŕ
љ	њ	Ћ	Ŕ	Ņ	ÿ	Ц	Α	Б	В	Γ	Д	Е	Ж	3	И	Й	К	Л	M	H	0	Π	Р	С	Т	У
Щ	Ъ	Ы	Ь	Э	Ю		a	б	в	Г	д	e	ж	3	и	й	к	л	м	н	0	п	p	с	т	y
щ	ъ	ы	Ь	Э	ю	я	è	ë	ħ	ŕ	е	s	i	ï	j	љ	њ	ħ	ќ	ѝ	ğ	џ	Ъ	ቴ	θ	θ
F	Ж	җ	Ş	3	қ	қ	К	к	H	ң	Ç	ç	Y	Y	¥	¥	Х	ҳ	Ч	ч	h	h	Ι	Ж	ж	Ι
ĕ	θ	ə	Ā	Й	Ö	ö	θ	θ	ÿ	ÿ	Ű	ű	a	b	d	e	g	k	m	0	р	t	u	v	с	f
Recen	Recently used symbols:																									
§	é	é		€	£	¥	©	®	ТМ	±	≠	≤	≥	÷	×	∞	μ	α	β	π	Ω	Σ	0	8	§	+
Unico	Unicode name: Section Sign										code:															

AutoCorrect... Shortcut Key... Shortcut key: Alt+0167









Printing House Square expressly for use in *The* intended to illustrate, by comparison, the *Times.* The size you are now reading will be superior legibility of the fount used in the left. used for the principal sections of *The Times*. The several complementary sizes are equally well proportioned for the respective services in the paper. The new fount will be employed on and after October 3, 1932. *The Times*, for generations the best printed paper, will, by present-day enticel standards be the most comfortably read optical standards, be the most comfortably read- founded, The Times was largely read in coffeeable journal in the world. All the new founts houses ; in the nineteenth century it came to have been tested by the highest ophthalmic be read in trains ; to-day it is largely read in authority.

of the contemporary reader, The Times believes | must newspaper typography remain const that it is anticipating a general public demand Advances in English craftsmanship have now which sooner or later will be made upon made possible the designing and engraving of journalism at large.

The improvement in the ease of reading may adjoining column. be immediately seen by a comparison of this The use of the fount in which these words column with the adjoining matter set in a similar are set will terminate in the issue of The Times size of the superseded fount.

This is The Times New Roman, designed at | This specimen of the superseded fount is cars and airliners. Reading habits, dependent on By this adjustment of its columns to the needs | social habits, will not remain constant. Neither

the supremely readable fount to be seen in the

for October 1, 1932.

TNR was invented to be used by printing presses. It's optimized for that, not modern office printers and device screens.

FONT **CONSIDERATIONS**

Please, please don't use default fonts. No Calibri, Arial, or Times New Roman. While Helvetica isn't a default font, it's also not creative.

Find a good font: one with the right features, some character, and something that doesn't come installed with your computer.



ELEMENTS OF TYPOGRAPHY

You have three basic tools:

- Your font, and its features. (1)
- 2 Line and paragraph formatting.
- (3) Hierarchy and layout.



Music, according to this, is mathematical patterns. You can measure the precise data value of every symphony, song and howl, and determine which is the richest. The experiences they create in humans or wolves don't really matter.

Music, according to this, is mathematical patterns. You can measure the precise data value of every symphony, song and howl, and determine which is the richest. The experiences they create in humans or wolves don't really matter.

Music, according to this, is mathematical patterns. You can measure the precise data value of every symphony, song and howl, and determine which is the richest. The experiences they create in humans or wolves don't really matter. 26pt font 26pt line spacing

Too tight!

26pt font 36.4pt line spacing

Good.

26pt font 44pt line spacing

Too loose!

TEXT FORMATTING

LINE SPACING (also called leading) is the vertical distance between two lines of text in a paragraph.

The best line spacing for readability is between 120% and 150% of the font size.

140% is generally regarded as the sweet spot.

Leading is important for making your body text less exhausting.



SUPERIOR No extra tracking

SUPERIOR +20 Tracking

TEXT FORMATTING

LETTERSPACING (a.k.a tracking) is a property that affects the horizontal space between every letter in a block of text.

When you use all or small caps, some extra horizontal spacing is needed. Increase the LETTER-SPACING (there's no formal rule for how much. Follow your gut, but don't go too far)



SUPERIOR No extra tracking

SUPERIOR +20 Tracking

TEXT FORMATTING

LETTERSPACING (a.k.a tracking) is a property that affects the horizontal space between every letter in a block of text.

When you use all or small caps, some extra horizontal spacing is needed. Increase the LETTER-SPACING (there's no formal rule for how much. Follow your gut, but don't go too far)

WHILE WE'RE HERE...

In an advanced typography class, we would cover KERNING (letterspacing for individual pairs of letters). But because this is a workshop of practical tips for Word, etc., we'll skip it.



TEXT FORMATTING

Emphasis is pretty important, but there are a couple of do's and dont's¹.

- Don't underline things. It breaks the flow and distracts the eye.
- Italics are okay. I don't like bold, but that's technically okay too. But you should only use one or the other.
- Small caps are ideal (for one or two words): easy to ignore when reading a different line, but noticable when you're reading the "target" line.

¹ Matthew Butterick, *Practical Typography*



The first stage began with the cognitive revolution, which made it possible to connect unlimited sapiens into a single data-processing network. This gave sapiens an advantage over all other human and animal species. Although there is a limit to the number of Neanderthals, chimpanzees or elephants you can connect to the same net, there is no limit to the number of sapiens.

Underlining distracts the eye and makes it hard to focus on the other text.

The first stage began with the cognitive revolution, which made it possible to connect unlimited sapiens into a single data-processing network. *This gave sapiens an advantage over all other human and animal species*. Although there is a limit to the number of Neanderthals, chimpanzees or elephants you can connect to the same net, there is no limit to the number of sapiens.

Italics don't break the block of text like a big line does, but provides emphasis when your eye gets there.

TEXT FORMATTING

Emphasis is pretty important, but there are a couple of do's and dont's¹.

- Don't underline things. It breaks the flow and distracts the eye.
- Italics are okay. I really don't like bold, but if you are certain you need it then it can be allowed. But you should only use one or the other.
- Small caps are my favorite (for short phrases): easy to ignore when reading a different line, but notice-able when you're reading the "target" line.

¹ Matthew Butterick, *Practical Typography*



into a single data-processing network. This gave sapiens an advantage over all other human and animal species.

The first stage began with the cognitive revolution, which made it possible to connect unlimited sapiens into a single data-processing network. This gave sapiens an advantage over all other human and animal species. Although there is a limit to the number of Neanderthals, chimpanzees or elephants you can connect to the same net, there is no limit to the number of sapiens.

§2.3: The Cognitive Revolution

The first stage began with the cognitive revolution, which made it possible to connect unlimited sapiens into a single data-processing network. This gave sapiens an advantage over all other human and animal species. Although there is a limit to the number of Neanderthals, chimpanzees or elephants you can connect to the same net, there is no limit to the number of sapiens.

Combining too many emphasizers drags my eye to the header when I try to read the line around it.

TEXT FORMATTING

When it comes to headings, it's easy to go overboard. There shouldn't be too many levels of headings (at least visually).

Just like text emphasis, having too many forms of heading emphasis can be garish or distracting.



into a single data-processing network. This gave sapiens an advantage over all other human and animal species.

The first stage began with the cognitive revolution, which made it possible to connect unlimited sapiens into a single data-processing network. This gave sapiens an advantage over all other human and animal species. Although there is a limit to the number of Neanderthals, chimpanzees or elephants you can connect to the same net, there is no limit to the number of sapiens.

§2.4: The Cognitive Revolution

The first stage began with the cognitive revolution, which made it possible to connect unlimited sapiens into a single data-processing network. This gave sapiens an advantage over all other human and animal species. Although there is a limit to the number of Neanderthals, chimpanzees or elephants you can connect to the same net, there is no limit to the up-

Increased spacing before and after, combined with a mild increase in font size, provide an elegant and subtle heading.

TEXT FORMATTING

My favorite strategy is to increase the font a little bit, and use spacing to my advantage. One thing to note here: the heading should be distinctly closer to the paragraph of its own section than the one before it.



ELEMENTS OF TYPOGRAPHY

You have three basic tools:

- Your font, and its features. (1)
- 2 Line and paragraph formatting.
- ③ Hierarchy and layout.



left to right and reset continuously. benefit of room for side notes!

- Line length is important for reducing reader
- exhaustion. Having the lines in a block of text
- be 45-90 characters reduces the eye strain
- that your reader feels as they move their eyes
- The bigger side margins also add the extra



Having long lines of text makes your document visually exhausting, since my eyes have to travel further. The third stage kicked off with the appearance of writing and money about 5,000 years ago, and lasted until the beginning of the scientific revolution. Thanks to writing and money, the gravitational field of human co-operation finally overpowered the centrifugal forces. Human groups bonded and merged to form cities and kingdoms. Political and commercial links between different cities and kingdoms also tightened. At least since the first millennium BC - when coinage, empires, and universal religions appeared - humans began to consciously dream about forging a single network that would encompass the entire globe.

This dream became a reality during the fourth and last stage of history, which began around 1492. Early modern explorers, conquerors and traders wove the first thin threads that encompassed the whole world. In the late modern period, these threads were made stronger and denser, so that the spider's web of Columbus's days became the steel and asphalt grid of the 21st century. Even more importantly, information was allowed to flow increasingly freely along this global grid. When Columbus first hooked up the Eurasian net to the American net, only a few bits of data could cross the ocean each year, running the gauntlet of cultural prejudices, strict censorship and political repression.

But as the years went by, the free market, the scientific community, the rule of law and the spread of democracy all helped to lift the barriers. We often imagine that democracy and the free market won because they were "good". In truth, they won because they improved the global data-processing system.

So over the last 70,000 years humankind first spread out, then separated into distinct groups and finally merged again. Yet the process of unification did not take us back to the beginning. When the different human groups fused into the global village of today, each brought along its unique legacy of thoughts, tools and behaviours, which it collected and developed along the way. Our modern larders are now stuffed with Middle Eastern wheat, Andean potatoes, New Guinean sugar and Ethiopian coffee. Similarly, our language, religion, music and politics are replete with heirlooms from across the planet.

If humankind is indeed a single data-processing system, what is its output? Dataists would say that its output will be the creation of a new and even more efficient data-processing system, called the Internet-of-All-Things. Once this mission is accomplished, Homo sapiens will vanish.



Having shorter lines of text make the document less exhausting to read, and also give me space for side notes.

AbcdefghijklmnopqrstuvwxyzAbcdefghijklmnopqrstuvwxyzAbcdefghijklm

The third stage kicked off with the appearance of writing and money about 5,000 years ago, and lasted until the beginning of the scientific revolution. Thanks to writing and money, the gravitational field of human co-operation finally overpowered the centrifugal forces. Human groups bonded and merged to form cities and kingdoms. Political and commercial links between different cities and kingdoms also tightened. At least since the first millennium BC - when coinage, empires, and universal religions appeared - humans began to consciously dream about forging a single network that would encompass the entire globe.

This dream became a reality during the fourth and last stage of history, which began around 1492. Early modern explorers, conquerors and traders wove the first thin threads that encompassed the whole world. In the late modern period, these threads were made stronger and denser, so that the spider's web of Columbus's days became the steel and asphalt grid of the 21st century. Even more importantly, information was allowed to flow increasingly freely along this global grid. When Columbus first hooked up the Eurasian net to the American net, only a few bits of data could cross the ocean each year, running the gauntlet of cultural prejudices, strict censorship and political repression.

But as the years went by, the free market, the scientific community, the rule of law and the spread of democracy all helped to lift the barriers. We often imagine that democracy and the free market won because they were "good".



Having shorter lines of text make the document less exhausting to read, and also give me space for side notes.

AbcdefghijklmnopqrstuvwxyzAbcdefghijklmnopqrstuvwxyzAbcdefghijklm

The third stage kicked off with the appearance of writing and money about 5,000 years ago, and lasted until the beginning of the scientific revolution. Thanks to writing and money, the gravitational field of human co-operation finally overpowered the centrifugal forces. Human groups bonded and merged to form cities and kingdoms. Political and commercial links between different cities and kingdoms also tightened. At least since the first millennium BC - when coinage, empires, and universal religions appeared - humans began to consciously dream about forging a single network that would encompass the entire globe.

This dream became a reality during the fourth and last stage of history, which began around 1492. Early modern explorers, conquerors and traders wove the first thin threads that encompassed the whole world. In the late modern period, these threads were made stronger and denser, so that the spider's web of Columbus's days became the steel and asphalt grid of the 21st century. Even more importantly, information was allowed to flow increasingly freely along this global grid. When Columbus first hooked up the Eurasian net to the American net, only a few bits of data could cross the ocean each year, running the gauntlet of cultural prejudices, strict censorship and political repression.

But as the years went by, the free market, the scientific community, the rule of law and the spread of democracy all helped to lift the barriers. We often imagine that democracy and the free market won because they were "good".

WHILE WE'RE HERE...

An easy way to check your line length on the fly is to use the alphabet as your measuring tool.

2-3 alphabets is 52 - 78 characters.



Lists! Fun in documents, not fun in Java.

font.

WHILE WE'RE HERE...

The numbering font I use in these slides is called Concourse T3 Index. It was designed by Matthew Butterick, whose web book is my go-to quick reference (and where a lot of this material came from).

The main point I want to make here is: please don't use the default lists. They're boring and bland. In any modern document software, you can change the bullet symbols and the numbering



The 48 Laws of Power is a book written by Robert Greene. It's a very notorious book, and was actually banned from several U.S. prisons. Here are the first few laws:

- Never outshine the master. (1)
- (2)
- (3) Conceal your intentions
- Always say less than necessary. (4)

The prisons banned the book, describing it as:

- » subversive
- » manipulative
- » machiavellian

Never put too much trust in friends, learn how to use enemies.

Interesting bullet and number symbols show effort and elegance.

© Sahil Sanghvi 2020. All Rights Reserved.



The best way to lay out all the text on a page is by using a GRID SYSTEM. A grid is a system of horizontal and vertical lines that can guide layout choices¹, and has been used for many centuries.

We'll look at some examples, but like a lot of tools, it only works if you use it in moderation.

¹ Matthew Butterick, *Practical Typography*

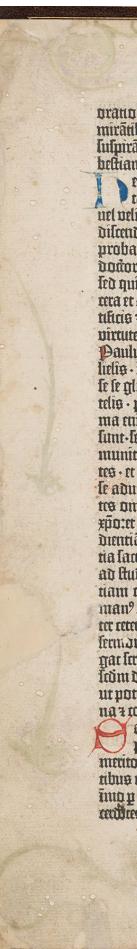
© Sahil Sanghvi 2020. All Rights Reserved.



The Gutenberg Bible used a four column grid system.

If you're writing a normal essay or paper, one column is fine (and probably best).

But, if you're making a more complex document with levels of hierarchy and images, then multiple columns are great¹.



orano qua adversus eum habuerar: mirātibus cādis atq; laudantibus: fulpiras air. Duid fi-ipam audiffei bestiam-fua verba refonatem : Cruny echoc dico-q lu aliquid in me rate · qo uel pollis a me audire nel velis difere: led quo ardoz nus er dilændi Audin-enfa ablos nobis prik probari abeat. Ingenin dockers line doctore laudabile 2. flö gd inenfas: fed quid queras colideram?. Mollis cera et ad formandu faulis: etia li artificis a platte cellent manus : tamen virtute torum eft quirquid elle potett Paulus apoftolus ad protes gamalielis . legen morfi et mberas didicif fe fe gloriaf: ut armatus fpiritualibs telis . postea doceret confidenter . Ar: ma enim noffre militie non carnalia funt-fed potentia deo- ad aftructione munitionü et cogitationes destruentes - et omme altitudinem extollentem le aduerlus friennam dei: + captiuantes omne intelledum ad obdiendum xpo:er paran subingare omne inobe-dientia. Thimothen scribit ab infantia factis litteris eruditum:et hytatur ad Audiü ledionis : ne negligat gra tiam que data fit el per impolition? man? prelbiterif. Treo precipit-ut inter ceteras virtutes epilcopi- que breut fermane Depingit-frientiag; no neglimat fripturan . obtinetem inquit tu à fröm dodrina eft fidelem fermonem: ut potens fit erhoztari in dodtina fana i contradicentes reumcere. Capitu anda quipe rufficitas folu fibi prodelt: a quatu edificat egune merito ecclelia xpi: tatu nocet li teltrue nbus no reliftat. Malachias phra-โพยุ y malachia due interrogauit la= cerdices lege. Jutatu lacerotis officiu

eft:infrogatu respodere de lege. Et in deuteronomio legim?. Interroga pa= trem tuñ et anninabit cibi: maiores tuos i dicent tibi. In plalmo of cente-limodecimoodauo. Lantabiles mithi erat inflificationes tue : in loco pe grinacionis mee. Et in delcription infli viri-cum eum arbori vice dauid que elt in paradilo compararer: mer reteras virtutes hor eria intulit. In le ge domini voluntas cius . 1 in lege e= ikne factatiffime vilionis ait. Jufto fulgere quali fellas : et intelligentes id elt doctos quali firmamentu. Hi dequantümter le diftant infta rufti ritas. 2 doda infticia. Alii fellis: ali nlo oparant. Duangi iurta tebraica uttitatem-uttug; de etuditis pollit intelligi. Ita eni apud eos legim?. Dui aut docti fuerint fulgebut fili fpledoz firmamenti:et q ad inflicia erudiunt multos: fili ftelle i peruas eternitares. Eur Dicit paul? aplus vas electionis! Rempe qa vas legis: + fripturas fan= darü erar armariü. Pharilei Rupent in dui dodrina-et mirant in petro et ohane-quomo lege faat: cu fras no Didicerit. Duicid en alis exercitatio er quotidiana i lege meditato tribué folet-illis tor spirit? faud? suggeretat Et erat insta of friptu e weibiles des. Duodeim annos faluatos ipleuerat: et i cemplo feans a queltionibs legis interrogas:magis wer du prudente infrogat. Aili forte rufticu preu . rufti rum iohänem Dicino? : quois vrerq; di rere poterat. a li imprit? Emone: no tamen friena. Johanes ruffic? : pilratoz indd?. Er unde illa vor oblecco:i pricipio erat obu-et webu eat apud du-z deus erat verbū! logos grece:multa

fignificat. Mam z verbü eft et ratio-z fupputato: et caula uniulcuiulg: rei-p qua für fungla que lublifit: que uniuerla rede intelligimus in xpo. Cap un

or dodus plato nelciuit-hor de-moltenes eloquens ignorauit. perda inquit lapienna lapienna : et prudentia pruxitu reprobaby. Hera Tamitia perdet falla faprencia: et quani Aulticia poicationis în cruce ît : tamen paulus lapitia loquit inter per-fedos. Bapitiam autem no leculi ilius. que altruitur.nec principum: led loquitur ai lapicitam in millerio ab-londitam: qua pdeltinanit deus ante feula. Dei fapiettia-tpo elt. Xpo e-nim-dei virtus et di fapiettia. Qec fapientia in mifterio abliondita eft . De qua anoni plalmi titulus pnotatur. pro occultis filip: in quo funt omnes thelauri fapienne et fciencie dei ablico Din. Et qui in mifterio ablconditus erat.poetinatus et ante fecula:prede-Amarus autem et prefigurat? in lege et prophetis. Hnde et prophet amel labantur vitentes : quia videbant eu que reteri non videbant . Abraham vidit diem eins et letatus eft . Aperie bantur reli ezechielt: qui pro pecatori clauft etat. Reuela ingr bauid oclos meos: 1 confiderato mirabilia de lege tua. leg em spiritualis e: a reuelatone op? eft ut intelligat : at reuelata facie dei gloria stemplemur. Liber i apoca lipli leptem ligillis lignat? oftendit: quem fi tederis homini facuni litas ut legat:relpondebit nbi. fon poffum. Bignar? ? eni. Duan hodie putat fe nolle leas : tenet figuatum libru . nec aprire pollut-nili ille referauerit à has bet daue dauid: à aperit et nemo daudit: daudit z nemo aprit. In adibus

apoftoloru-landus tunuchus - imo land? vir - fir trim tu farra friprura cognominat : cū legeret ylaiam propheram-interroganis a philipo-pu-talite intelligis que legis: relpondit. Ouomodo pollum: nili aliquis me docuerit : Ego ut de me loquar interinec landio: fum hor eunucho . nec Au= diofioz: qui de ethiopia id elt de estremisfinibus mudi venit ad emplu. reliquit aulam regiam: 3 tatus amas tor legis fuit dinine faentie - ut eriam in vehiculo lineras legeret lacras. Et tamen cum libru teneret - et verba din in cogitatione conperet-lingua volue-ret-labijs perfonaret : ignorabat eu que ilibro uclares venerabaner. Denit philipus:oftendit elihelum:qui daufus latter in lia. D mira wdori virms. Faxin hora moidit eunuch?: bapuzar? fidelis et land? mgr efficit de difapio plus i deferto fote ecclie: g faurato fritagoge tiplo reprit. Captu ec a me pftrida für breuit : negs

pietatis & singularis amicitice ergo: Dano dedit foc volumen S. Biblice Vno Melchtori Ganbisch Pastori in Long Volms dorff: Armo 15 05.

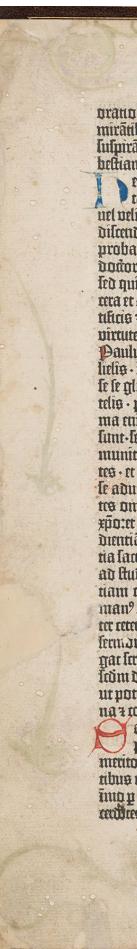
> enim eplaris äguftia euagar longi? parietatur:ut intelligeres . te in fripturis factis fine puis et möfträte femita.no polle ingredi. Laceo de gramancie-rechoricie-philolophie-geo merricis. Dyalericis. mulicis. aftrono: micis-aftrologis medicis-gru fairia moztalibs lans uel villillima et: 3 in tres parces fandit.i warina.rationt. zulum. Ad minores artes vemä:et que non cam lingua of manu amini-Aratur. Agricole-cementary-fabri me= talloy-lignoruq; celores-lanarij get fullones. z ceteri qui varia fuppelledile et vilia opulcia fabricat : abla: dodo re elle non pollunt qu' cupiut. Quod medicon el pminut medici : tradaut fabrilia fabri. Bola Impuran ars i:



The Gutenberg Bible used a four column grid system.

If you're writing a normal essay or paper, one column is fine (and probably best).

But, if you're making a more complex document with levels of hierarchy and images, then multiple columns are great¹.



orano qua aduerlus eum habuerar: mirātibus cācis atq; laudantibus: fulpiras air. Duid fi-ipam audiffei bestiam-fua verba refonatem : Cruny echoc dico-q lu aliquid in me rate · qo uel pollis a me audire nel velis difere: led quo ardoz nus er dilændi Audin-enfa ablos nobis prik probari abeat. Ingenin dockers line doctore laudabile 2. flö gd inenfas: fed quid queras colideram?. Mollis rera et ad formandu faulis: etia fi artificis a platte cellent manus : tamen virtute torum eft quirquid elle potett Paulus apoftolus ad protes gamalielis . legen morfi et mberas didicif fe fe gloriaf: ut armatus fpiritualibs telis . postea doceret confidenter . Ar: ma enim noffre militie non carnalia funt-fed potentia deo- ad aftructione munitionü et cogitationes destruentes - et omme altitudinem extollentem le aduerlus friennam dei: + captiuantes omne intelledum ad obdiendum xpo:er paran subingare omne inobe-dientia. Thimothen scribit ab infantia factis litteris eruditum:et hytatur ad Audiü ledionis : ne negligat gra tiam que data fit ei per impolitioné man? prelbiterij. Trto precipit-ut inter ceteras virtutes epilcopi- que breut fermane Depingit-frientiag; no neglimat fripturan . obtinetem inquit tu à fröm dodrina eft fidelem fermonem: ut potens fit erhoztari in dodrina fana i contradicentes reumcere. Capitu anda quipe rufficitas folu fibi prodelt: a quatu edificat egune merito ecclelia xpi: tatu nocet li teltrue nbus no reliftat. Malachias phra-โพยุ y malachia due interrogauit la= cerdices lege. Jutatu lacerotis officiu

eft:infrogatu respodere de lege. Et in deuteconomio legim?. Interroga pa trem tuñ et anninabit nbi: maiores tuos i dicent tibi. In plalmo of cente-limodecimoodauo. Lantabiles mithi erat inflificationes tue : in loco pe grinacionis mee. Et in delcription infli viri-cum eum arbori vice dauid que elt in paradilo compararer: mer reteras virtutes hor eria intulit. In le ge domini voluntas cius . 1 in lege e= ikne factatiffime vilionis ait. Jufto fulgere quali ftellas : et intelligentes id eft doctos quali firmamentu. Hi dequantümter le diftant infta rufti ritas. 2 doda inftina. Alij fellis:alij nlo oparant. Duangi iurta tebraica uttitatem-uttug; de etuditis pollit intelligi. Ita eni apud cos legim?. Dui aut doch fuerint fulgebut in fpledoz firmamenti:et q ad inflicia erudiunt multos: fili ftelle i peruas eternitares. Eur Dicit paul? aplus vas electionis! Aempe ga vas legis: + fripturas fandarü erar armariü. Pharilei Rupent in dui dodrina-et mirant in petro et iohane-quomo lege faat: cu lras no Didicerit. Duicid en alis exercitatio er quotidiana i lege meditato tribué folet-illis tor spirit? faud? suggeretat Et erat inxta q friptu e wribiles deo. Duoteim annos faluator inleuerat: et i cemplo feans a queltionibs leais interrogas:magis wer du prudente infrogat. Aili forte rufticu preu . rufti rum iohänem dicim? : quoi; vterq; di rere poterat. a li imprit? Emone: no tamen friena. Johanes ruffic? : pilratoz indd?. Er unde illa vor oblecco:i pricipio erat obu-et webu eat apud du-z deus erat verbū! logos grece:multa

fignificat. Mam z verbü eft et ratio-z fupputato: et caula uniulcumly rei-p qua für fungta que fublittu: que uni necla rede intelligimus in xpo. Cap mi

or dodus plato nelciuit-hor de-moltenes eloquens ignorauit. perda inquit lapienna lapienna : et prudentia pruxitu reprobaby. Hera famitia perdet falla famencia: et quami fulticia odicatioms în cruce lit : tamen paulus lapitia loquit inter per-fedos. Bapitiam autem no leculi ilius. que diruitur.nec principum:fed loquitur di lapituam in millerio ab-fconditam: qua pdeltinauit deus ante feula. Dei fapiettia-tpo elt. Xpo e-nim-dei virtus et di fapiettia. Qec fapientia in mifterio ablicondita eft . De qua anoni plalmi titulus pnotatur. pro occultis filip: in quo funt omnes thelauri fapienne et fciencie dei ablico Din. Et qui in mifterio ablconditus erat.poetinatus et ante fecula:prede-Amarus autem et prefigurat? in lege et prophetis. Unde et prophete appel labantur uitettes : quia uitebant eu que reteri non videbant . Abraham vidit diem eine et letatus eft . Aperie bantur celi ezechielt: qui pro pecatori claufretat. Reuela ingr Dauid oclos meos: 1 confiderato mirabilia de lege tua. leg em spiritualis e: a reuelatone op? eft ut intelligat : at reuelata facie dei gloria stemplemur. Liber i apora liph lepten figillis fignat? oftendit: quem fi tederis homini facuni litas ut legat:relpondebit nbi. fon poffum. Bignar? ? eni. Duan hodie putat fe nolle leas : tenet figuatum libru . nec aprire pollut-nili ille referauerit q has bet daue dauid: à aperit et nemo daudit: daudit z nemo aprit. In adibus

apoftoloru-landus tunuchus - imo land? vir - fir trim tu farra friprura cognominat : cū legeret ylaiam propheram-interroganis a philipo-pu-talite intelligis que legis: relpondit. Ouomodo pollum: nili aliquis me docuerit : Ego ut de me loquar interinec landio: fum hor eunucho . nec Au= diofioz: qui de ethiopia id elt de estremisfinibus mudi venit ad emplu. reliquit aulam regiam: 3 tatus amas tor legis fuit dinine faentie - ut eriam in vehiculo lineras legeret lacras. Et tamen cum libru teneret - et verba din in cogitatione conperet-lingua volue-ret-labijs perfonaret : ignorabat eu que ilibro uclares venerabaner. Denit philipus:oftendit elihelum:qui daufus latetat in lia. D mira wdori virtus. Faxin hora moidit eunuch?: bapuzar? fidelis et land? mgr efficit de difapio plus i deferto fote ecclie: g faurato fritagoge tiplo reprit. Captu ec a me pftrida für breuit : negs renim eplaris äguftia euagar

pietatis & singularis annicitie ergo: Dono dedit foc volumen S. Biblice Ino Melchtori Gaubilch Pastori in Long Volmsdorff: Anno 1505.

> longi? parietatur:ut intelligeres . te in fripturis factis fine puis et möfträte femita.no polle ingredi. Laceo de gramancie-rechoricie-philolophie-geo merricis. Dyalericis. mulicis. aftrono: micis-aftrologis medicis-gru fairia moztalibs lans uel villillima et: 3 in tres parces fandit.i warina.rationt. zulum. Ad minores artes vemä:et que non cam lingua of manu amini-Aratur. Agricole-cementary-fabri me= tallou-lignorug; celores-lanarij gjet fullones. z ceteri qui varia fuppelledile et vilia opulcia fabricat : abla: dodo re elle non pollunt qu' cupiut. Quod medicon el pminut medici : tradaut fabrilia fabri. Bola Impuran ars i:

¹ Not every column in a grid needs to be a body text column. You can use it for images, side notes, etc.



	Grid systems		Grid systems				Grid systems			Grid systems			
	A grid can be simple or complex,		A grid can be simple or complex,	A grid can be simple or complex,	A grid can be simple or complex,					ond operation	1 2 2 3 3 3	S 8 5 5 15 1 X	
STATE AND AND ADDRESS AND	specific or generic, tightly defined	specific or generic, tightly defined	specific or generic, tightly defined	specific or generic, tightly defined	specific or generic, tightly defined							105 100 100	20 25 75 0
	or loosely interpreted.	or loosely interpreted. Typographic	or loosely interpreted.	or looptly interpreted.	or loosely interpreted.								
the set of	Typographic grids are all about	grids are all about control. They	Typographic grids are all about	Typographic grids are all about	Typographic grids are all about						ABCDI	EFGAB	CDEFO
and a strate in	control. They establish a system	establish a system for arranging	control. They establish a system	control. They establish a system	control. They establish a system						A second s	the paper particular from the local	
F C A B C D	for arranging content within the	content within the space of page,	for arranging content within the	for arranging content within the	for arranging content within the						H I K L	I H O NO	K L M N 0
The BULLER T.	space of page, screen, or built	screen, or built environment.	space of page, screen, or built	space of page, screen, or built	space of page, pcreen, or built								States and and the Real Property lies, or other
	environment. Designed in	Designed in response to the	environment. Designed in	environment. Designed in	environment. Designed in						In a Bully State	V V D D	PSTVW
DODS	response to the internal pressures	internal pressures of content (test,	perponse to the internal pressures	response to the internal pressures	response to the internal						I S S S S S S	The second	
W P Q K S	of content (text, image, data) and	image, data) and the outer edge or	of content (text, image, data) and	of content (text, image, data) and	pressures of content (text, image,								
	the outer edge or frame (page,	frame (page, pcreen, window), an	the outer edge or frame (page,	the outer edge or frame (page,	data) and the outer edge or frame	11月1日日 日本 日	A grid can be simple or (complex, specific or gener	ic, tightly defined or	A grid can be simple o	r complex, specific or	A grid can be simple of	r complex, specific or
'he typographis grid is a proportional rgulator for composition, tables, pietures,	screen, window), an effective grid	effective grid is not a rigid formula	screen, window), an effective grid	persen, windowj, an effective grid	(page, poreen, window), an			graphic grids are all abou		generic, tightly defined	or loosely interpreted.	generic, tightly define	or loosely interpreted.
	is not a rigid formula but a	but a flexible and resilient	is not a rigid formula but a	is not a rigid formula but a	effective grid is not a rigid	This had a been		whent within the space of		Typographic grids are	all about control. They	Typographic grids are	all about control. They
	flexible and resilient structure, a	structure, a slotleton that moves in	flexible and resilient structure, a	flexible and resilient structure, a	formula but a flexible and	3 . 3		n response to the interna			arranging content within		arranging content within
pograpilis grid is a proportional	skeleton that moves in concert	concert with the muscular mass of	skeleton that moves in concest	skeleton that moves in concert	resilient structure, a skeleton that	A D D C D D D	(text, image, data) and th				en, or built environment.		en, or built environmen
gulator for composition, tables, pictures,	with the muscular mass of	content. Grids belong to the	with the muscular mass of	with the muscular mass of	moves in concert with the			rigid formula but a flexib			to the internal pressures		to the internal pressures
u. It is a formal programme to commodate x anihumu items.	content. Grids belong to the	technological framework of	content. Grids belong to the	content. Grids belong to the	muscular mass of content. Grids	A CAR AND A			r mass of content. Grids		, data) and the outer edge		data) and the outer edg
	technological framework of	typography, from the concrete	technological framework of	technological framework of	belong to the technological		modularity of letterpress	al framework of typograp			, window), an effective		, window), an effective
	typography, from the concrete	modularity of letterpress to the	typography, from the concrete	typography, from the concrete	framework of typography, from			ications. Although softwa		grid is not a rigid form		grid is not a rigid forn	
	modularity of letterpress to the	ubiquitous rulers, guides, and	modularity of letterpress to the	modularity of letterpress to the	the concrete modularity of	QRST		ntinuous tones, every digi		resilient structure, a si concert with the muse		resilient structure, a s concert with the musi	
	ubiguitous rulers, guides, and	coordinate systems of graphics	ubiquitous rulers, guides, and	ubiquitous rulers, guides, and	letterpress to the ubiguitous	Construction of the second sec		from a grid of neatly bo			hnological framework of		hnological framework o
	coordinate systems of graphics	applications. Although poffware	coordinate systems of graphics	coordinate systems of graphics	rulers, guides, and coordinate		ubiquitous language of t	te oui foranhical user inte	reface) creates a gridded	typography, from the o			ondrete modularity of
	applications. Although software	generates illusions of smooth	, , ,				space in which windows				aitous rulers, guides, and		uitous rulers, guides, an
	applications. Although somvare generates illusions of smooth	curves and continuous tones, every	applications. Although software	applications. Although software	systems of graphics applications.			eduction, grids have been		coordinate systems of			graphics applications.
	curves and continuous tones,	digital image or mark is	generates illusions of smooth	generates illusions of smooth	Although software generates	Ri	tools. Avant-garde design				erates illusions of smooth	Although software get	
		constructed-ultimately-from a	curves and continuous tones,	curves and continuous tones,	illurions of smooth curves and	10°-	letterpress, bringing it to	the polemical surface of	the page. In Switzerland	curves and continuous	tones, every digital image	smooth curves and co	tinuous tones, every
	every digital image or mark is	grid of neatly bounded blocks. The	every digital image or mark is	every digital image or mark is	continuous tones, every digital		after World War II, graph	ic designers built a total	design methodology	or mark is constructed	-ultimately-from a grid	digital image or mark	is constructed—
	constructed—ultimately—from a	ubiquitous language of the gui	constructed—ultimately—from a	constructed-ultimately-from a	image or mark is constructed-	/10	around the typographic g	r d, hoping to build from	it a new and rational	of neatly bounded bloc	ks. The ubiquitous	ultimately-from a gr	d of neatly bounded
	grid of neatly bounded blocks.	(graphical user interface) creates a	grid of neutly bounded blocks.	grid of newly bounded blocks.	ultimately-from a grid of neatly				of typographic evolution.	language of the gui (g	aphical user interface)	blocks. The ubiquitou	
	The ubiguitous language of the	graphical user interrace) creates a gridded space in which windows	The ubiguitous language of the	The ubiquitous language of the	bounded blocks. The ubiquitous			ids are catefully honed in		creates a gridded space		(graphical user interfa	
	gui (graphical user interface)								he inescapable mesh that		dition to their place in	· · · · · · · · · · · · · · · · · · ·	vs overlay windows. In
	creates a gridded space in which	overlay windows. In addition to	berberberberberber	A REAL PROPERTY AND	The typographic grid is a proportional		filters, at some level of re	sposition, nearly every sys	tem of writing and	the background of des	ign production, grids have	addition to their place	Country and a second
	windows overlay windows. In	their place in the background of		he huburh hat	regulator for composition, tabler,		The repognphic policies preparational	The top-specific gold in a proportional	On tryupple pells a proportional				ds have become explicit
	addition to their place in the	design production, grids have	1 12 1 14 1 18 1 10 1 10 1 10 10 10 10 10 10 10 10 10		pictures, etc. It is a formal programme to accommodate a unknown items.		replace to compation, when picture,	replace to conjection, when you are,	equilater for composition, tables, pictures,		The upographic gold is a proportional regulater for comparison, while, survey,	The typigmphic goldu u preparated regulate for comparation, tables, pictures.	The typigesphic gell is a perperioual psychoterfice composition, while, picture
	background of design production,	become explicit theoretical tools.	the last free free free free free	- I I I I I I I I I I I I I I I I I I I	The typographic grid is a proportional		ere, his a formal programme to accommodate a subjective item. The	er: b is a formal programme to accommendate or subscreen Print The	et . 2 is a formally regulation to an annual star a subjective item. The		en. It is a formal programme to	etc. 212 a firmed programme to	et: Dir siteral programme to
	grids have become explicit	Avant-garde designers in the 1910s		RCDEEG	regulator for composition, tabler,		hyspapitz pidto s pry-oriend replace	sponska and to provide along the	npographic geli is a proportional mysilener		aronnedate s'udacea, men Ta tepranala avil à a proportional marketer	errormelek a valuent itere file torupplik gid is a provinced system	accontrology a values on the top-specify gold in proportional supple
	theoretical tools. Avant-garde	and 192.05 exposed the mechanical			pictures, etc. It is a formal programme		for composition, while pictures, etc. It is a formal programment to an examplein a	for composition, while, pictures, etc. 21 is a formal programme in accommodation of	for corporation, failine, pictures, etc. 218 a formal perspectrum to accommodate a		Recomposition, tables, pictures, etc. It is a	Recomposition, while picture, etc. It is a	for computers, while, parson, et. 21
	designers in the 19205 and 19205	grid of letterpress, bringing it to	The Ar Bullet and	TREMNO	to accommodate a unless weitternz.		spilaren itera	adaren itare.	salacon new		Konsignigation to accommodate a subserve incre.	Kanalyngranne tracennodowe witaren berez	formal programme to uncontrolicite to subscrete intere-
	exposed the mechanical grid of	the polemical surface of the page.	I K L MAND										
	letterpress, bringing it to the	In Switzerland after World War II,	a had a had a had a had	DODST									
	polemical surface of the page. In	graphic designers built a total	q K S T V V	W K S I V W									

The above images were taken from THINKING WITH TYPE, a website with lots of useful reference information. Some columns are used for body text, and others for captions. Notice that the images still line up with the grids.



Ethical Management of Hierarchies

BY SAHIL SANGHVI | HISTORY C184D | MAY 6, 2020

In 2016, a *New York Times* exposé brought to light a massive surveillance system recording email and web traffic at a high level of detail (sufficient to trace traffic back to a specific person) within the networks of UC schools¹, and the staunch opposition by a group of Berkeley faculty. As a direct result of hackers stealing medical data at UCLA, UC President Janet Napolitano instituted a secretive surveillance program that monitored *all* network traffic in *all* UC campuses – something that didn't sit well with faculty at Berkeley, a school which prides itself on being a bastion of freedom of both speech and academia. They feared an intrusion of privacy and censoring of academic research into topics the UCOP (UC Office of the President) didn't agree with.

The program was discovered several months after it had begun spying on the networks, and faculty were outraged at the lack of transparency about where their data was going. Even Berkeley IT and cybersecurity staff, who keep the massive campus networks secure, were against the program; however, they were ordered by UCOP to maintain the secrecy and comply. The issue was only revealed to the public when a group of senior faculty members at Berkeley leaked information about this intrusive monitoring², which is able to gather data on a level comparable to spyware.

This situation is symptomatic of a larger 21st century issue. As the risks from data leaks rapidly grow, organizations take increasingly larger liberties with the amount of surveillance and power they have over users of their digital devices and networks. As a result, when hierarchal structures in these organizations cause ethical disagreements, the minimization of corporate and operational risk often prevails at the cost of individual rights and liberties. Reconciling the differences between different ethical standards

sahil sanghvi | ethical management of hierarchies 1

HIERARCHY AND LAYOUT

What does that look like in actual schoolwork? Well, not too crazy, unfortunately. We can't drastically alter the grid of a college paper¹, but the other things we've learned together do apply!

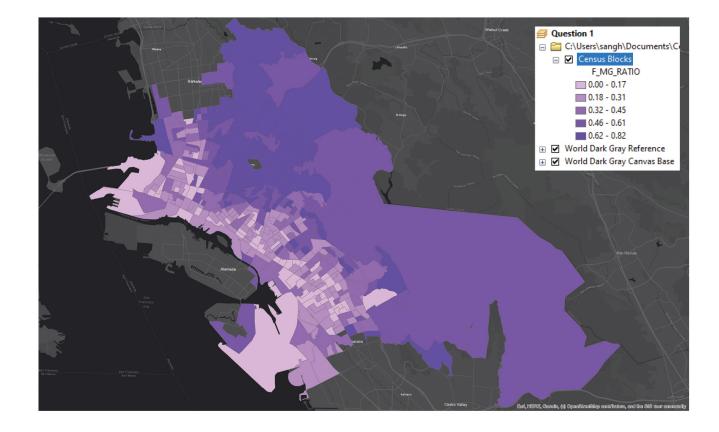
¹ Yes, even a one-row, one-column grid is a grid. One could argue that this is a three-row, one-column grid though.



¹ At Berkeley, a New Digital Privacy Protest. The New York Times.

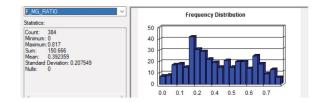
² UCOP Ordered Spyware Installed on UC Data Networks. Remaking the University.

020 MBER \mathcal{O} 0 D 50 0 U



Question 1

In the map above, we can see the number of women employed in "Management, Professional, and Related Occupations" divided by the number of employed females within the census block. In the statistics below, we see that on average, a census block in Oakland has about 39.2% of



their employed females working in our selected occupation (management, etc.). We can also see that the highest value this percentage takes is 81.7%, meaning that there is at least one census block where 81.7% of the employed females work in management, etc fields.

In the graph on the left, we see a frequency histogram of the F_MG_RATIO field. The mode is a little less than 0.2, and the mean is 0.29.

Geography C188 Lab 2 Sahil Sanghvi, Section 104

HIERARCHY AND LAYOUT

What does that look like in actual schoolwork? Well, not too crazy, unfortunately. We can't drastically alter the grid of a college paper, but the other things we've learned together do apply! However, next time you work on a lab writeup (or anything more complex), think about the grid of your document!

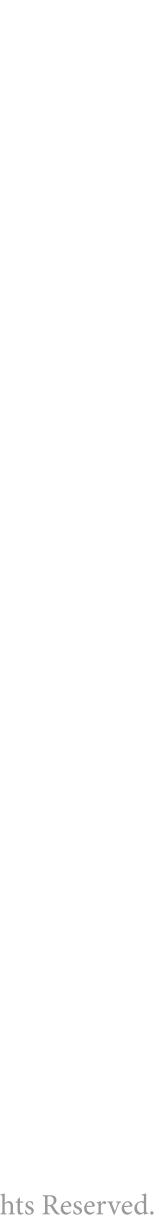


Time to apply these tips to a real document!



So ... résumés.

© Sahil Sanghvi 2020. All Rights Reserved.



THE DEAL WITH RÉSUMÉS

While typographic rules and tips are great, we need to apply them with discretion. A couple of considerations:

- Most recruiters are *skimming*, not reading. So our el-(1)ements need to be exaggerated accordingly.
- The first thing I get asked is when I'm graduating. (2)So that goes right up top by my name.

SAHIL SANGHV B.A. DATA SCIENCE GRADUATING 2021

(123)-456-6789

sanghviss@berkeley.edu www.sahilcreates.com

LinkedIn: sahil-sanghvi

Experience

Software Engineer Intern

Microsoft Corporation, May 2020 - August 2020

- Built a plugin for a very popular CI/CD platform to enable developer teams to run Microsoft Credential Scanner as part of their build pipeline in a seamless end-to-end use case
- Added advanced features such as cloud storage support and guick-response tools from the CI/CD platform's UI itself, as well as cross compatibility with other plugins to further extend the capabilities of the product.
- Worked closely with project managers to ideate features and to discuss the user base and their needs.

Security Software Engineer

UC Berkeley Information Security Office, Jan 2019 - May 2020

- Full-stack development for UCB's centralized security operations and monitoring software. Projects include:
 - Synchronization scripts between incompatible applications.
 - Integration with a new intrusion detection system
 - Server-side pagination for faster record retrieval
 - UI theme development
- Used Ruby on Rails, PostgreSQL, Vue.js, and Sass.
- Used tools such as ArcSight to monitor for suspicious network activity and eliminate or mitigate discovered vulnerabilities.

Undergraduate Research Apprentice

UC Berkeley Division of Data Sciences, Sept 2019 - Dec 2019

 Co-developed an exploratory tool using a recurrent neural network with LSTM architecture to perform languageindependent phonetic transcription

Education

B.A. Data Science University of California, Berkeley Geospatial Information & Technology EMPHASIS

Electrical Engineering & Computer Science MINOE

- Probability Theory
- Data Visualization Discrete Mathematics &
- Artificial Intelligence Human Contexts and Ethics of Data Science
- Principles & Techniques of Data Science
- Introduction to Geospatial Technologies
- **Probability Theory** Data Structures &
- Algorithms
- User Experience Design
- Foundations of Data Science

Skills & Knowledge

Languages and Frameworks

- Python
- Java
- Ruby on Rails
- C++
- PostgreSQL
- HTML & CSS
- Comfortable in Linux/UNIX environments

Data Science & Analytics

- Standard Python data science libraries - Pandas, Numpy, Scipy, Matplotlib, etc.
- Tableau
- Jupyter Notebooks
- ArcGIS & QGIS
- Clustering, Classification
- (Learning) Tensorflow & Keras

Design Skills

- Fluent in the Adobe CC Suite
- Logo Design
- Print Design
- Slide Deck Design

Achievements

- 1st Place at IBM Watson Challenge, CalHacks 5.0)
- Leadership Award (Cal Alumni Association, Sept. 2017)

Personal Projects

StyleMe

Awarded 1st Place by IBM at CalHacks 5.0

Co-created a Python program that uses IBM Watson's Visual Recognition core and the OpenWeatherMap API to classify user's wardrobe and suggest outfits based on the weather.



THE DEAL WITH RÉSUMÉS

While typographic rules and tips are great, we need to apply them with discretion. A couple of considerations:

- ① Most recruiters are *skimming*, not reading. So our elements need to be exaggerated accordingly.
- 2 The first thing I get asked is when I'm graduating.So that goes right up top by my name.
- ③ The complexity of a résumé lends itself to a nice grid. The shape of this grid depends on the content.

SAHIL SANGHV B.A. DATA SCIENCE GRADUATING 2021

(123)-456-6789 sanghviss@berkelev.edu www.sahilcreates.com LinkedIn: sahil-sanghvi

Experience

Software Engineer Intern

Microsoft Corporation, May 2020 - August 2020

- Built a plugin for a very popular CI/CD platform to enable developer teams to run Microsoft Credential Scanner as part of their build pipeline in a seamless end-to-end use case
- Added advanced features such as cloud storage support and quick-response tools from the CI/CD platform's UI itself, as well as cross compatibility with other plugins to further extend the capabilities of the product.
- Worked closely with project managers to ideate features and to discuss the user base and their needs.

Security Software Engineer

UC Berkeley Information Security Office, Jan 2019 - May 2020

- Full-stack development for UCB's centralized security operations and monitoring software. Projects include:
- Synchronization scripts between incompatible applications.
- Integration with a new intrusion detection system
- Server-side pagination for faster record retrieval.
- UI theme development
- Used Ruby on Rails, PostgreSQL, Vue.js, and Sass.
- Used tools such as ArcSight to monitor for suspicious network activity and eliminate or mitigate discovered vulnerabilities.

Undergraduate Research Apprentice

UC Berkeley Division of Data Sciences, Sept 2019 - Dec 2019

 Co-developed an exploratory tool using a recurrent neural network with LSTM architecture to perform languageindependent phonetic transcription.

Education

B.A. Data Science University of California, Berkeley EMPHASIS Geospatial Information & Technology

MI	NOR Electrical Engine	eering 8	& Computer Science
	Probability Theory	•	Data Visualization
•	Artificial Intelligence		Discrete Mathematics &
•	Human Contexts and Ethics		Probability Theory
	of Data Science	•	Data Structures &
•	Principles & Techniques of		Algorithms
	Data Science		User Experience Design
	Introduction to Geospatial		Foundations of Data Science
	Technologies		

Skills & Knowledge

Languages and Frameworks

- Python
- Java
- Ruby on Rails
- C++
- PostgreSQL
- HTML & CSS
- Comfortable in Linux/UNIX environments

Data Science & Analytics

- Standard Python data science libraries - Pandas, Numpy, Scipy, Matplotlib, etc.
- Tableau
- Jupyter Notebooks
- ArcGIS & QGIS
- Clustering, Classification
- (Learning) Tensorflow & Keras

Design Skills

- Fluent in the Adobe CC Suite Logo Design
- Print Design
- Slide Deck Design

Achievements

1st Place at IBM Watson Challenge, CalHacks 5.0) Leadership Award (Cal Alumni Association, Sept. 2017)

Personal Projects

StyleMe

Awarded 1st Place by IBM at CalHacks 5.0

Co-created a Python program that uses IBM Watson's Visual Recognition core and the OpenWeatherMap API to classify user's wardrobe and suggest outfits based on the weather.



CREDIT WHERE CREDIT IS DUE

Most of today's material is from these two sources, which is where I learned this stuff myself.

- Other cool stuff:
- » r/typography

» *Practical Typography* by Matthew Butterick

» Thinking With Type (the website) by Ellen Lupton

» *Designing Type* (guess what this book is about)

