DESIGN FOR A PERFECT SCREEN.

TAL FLORENTIN

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Tal Florentin

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Chapter 1

THE MAGIC BEGINS

Chapter 1

The Magic Begins

The Magical Power of Design

Good designers are similar to magicians or mentalists. Good designers have the power to influence the way we do things. Good designers have the ability to control how our eyes scan a page, define the flow in which we use an interface and make us click a button. Good designers have the ability to affect the way people behave, and if this isn't magic, then I'm not really sure what magic is.

They do that using a set of skills and tools. The toolset of a designer comes from a few different disciplines. It comes from classic design – used for a long time in architecture and for a few hundreds of years in print design. It comes from research, such as eye tracking – learning how our eyes scan visual interfaces. It comes from psychology and behavioral sciences, where things like human decision making are explored, and from physiology, as we know the way we use interfaces is affected by the human anatomy. It even goes back to the days of da Vinci, the greatest design influencer who ever lived.

Like magicians, designers have to get to know the secret techniques that affect people, train a lot in order to master them, and then – let the show begin.

Revealing the Secrets of Design

It took me 18 years to get to know the different techniques of digital interface design and master them. At first, I didn't really know they existed. Later, I found out about some of them and then about others, but didn't really know how to implement them specifically in my layout designs. Afterwards, I found more and more techniques from different disciplines and tried to embed them together. I can't say it always worked. It took me 120 digital product design processes and as many as 3,500 pages, screen and layout designs for all types of platforms to be able to say I now master the tools of a designer. And I'm sure I have a lot more to learn and can get even better.

Enjoying the Power

It was one of my latest projects in which I had the feeling that now, after all of these years, I'm in control and not the other way around. I led a redesign project for a local Tel-Avivian blog site aimed for the Y-generation (people born after the year of 1980). The bottom line is that this project won the 2014 international UX Award and put me on a list of around 40 people who have ever won the award.

Sharing the Power

Although this is very flattering, winning the award didn't change me. However, it did increase my passion for sharing knowledge. I've been teaching UX design for a decade now and I'm probably the most active

UX speaker in my country. A few years ago, I founded UXV – the Israeli UX certification program, and since then I mentored hundreds of UX designers who found their way into the market. But winning the international prize made me want to share my knowledge outside the borders of my country.

This is where the idea for the book was born. I wrote the book in order to shorten your path. Although I'm a great believer in practice and training, I don't think we always have to achieve things the hard way. Why not have some cheat sheets on the way? Why not learn from the experience of others?

This book was written to make the path easier for you. The different tools, methods and techniques are described in the simplest way possible, and I invested tons of time adding more than 50 visuals to make things straightforward for you. All you have to do is spend some time and read. The rest is up to you.

Unlike the world of magic, the secrets you are about to discover do not belong to a closed group of people. We are not afraid of spreading them. Actually, it is exactly the other way around. The more people know, the better the world will be for all of us.

Let's make it a better world – pixel by pixel.

The Questions You Need to Answer before You Get Started

This book deals with the processes of designing a digital layout. However, this process doesn't stand on its own. In order to be able to start a new layout design or examine and criticize an existing one, you must go through the prior process of user experience research. In this process we go through a few crucial steps that give us the information we need in order to get started with the design:

- We examine and define the product's business goals and what would be defined as a successful interaction.

- We go through a long process of target audience analysis, based on the understanding that we never really know and represent our target audience. The user research process reveals who our users are, how they behave and what they are looking for. This knowledge allows us to get into the shoes of our users and look at the world from their point of view, rather than ours.

- In addition, we have to get to know the product and its functional requirements. A UX designer is not the one defining what the product does. We are in charge of taking the required functions and present them in the most effective way that will lead to achieving the designated business goals in the product's meeting point with its users.

Before Starting to Design

By the time you hold a piece of paper or open a new layout document in your favorite design or prototyping tool, you have to make sure you can answer the following three questions:

1. What functions is the page supposed to offer?

2. What is your target user? What type of user will be using the page?

3. What is it you want the user to do on the page? Which actions do you expect from the user?

Once you have defined your expectations you can start the design process. The goal is to create the most effective design that will cater to all your expectations as laid out in the beginning.

Editor Note: Setting Expectations

Before we begin, it is important to set expectations. Well, this is a screen. I'm pretty sure you knew that. Throughout the book I will use this screen structure to demonstrate and show examples and describe situations. Although this is a specific type of screen, all of the models, guidelines, rules and tips you are about to read in this book are relevant for the interactive design of all kinds of displays, **including tablets and smartphones**. Whenever the model needs some modifications in order to fit any other type of screen, I will address that.

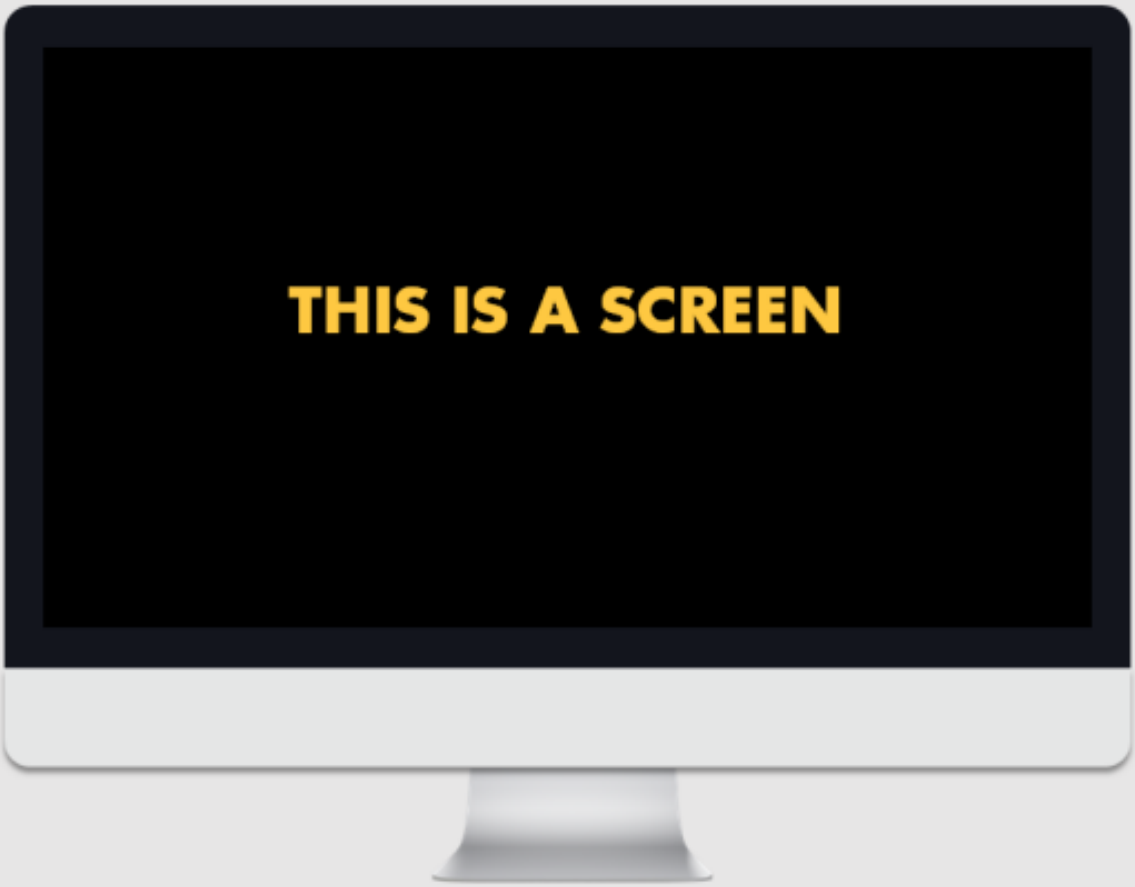

Figure 1.1 – Setting expectations

Chapter 2

FORCES & GRAVITY

In this chapter you'll get to know:

- Guttenberg's force of gravity
- The force of language
- What affects how people scan the screen

Chapter 2

Forces and Gravity

Understanding How Users Use

Designing a layout is all about understanding the forces that drive our user's behavior and actions. The first part of the cognitive cycle is where the user gets his information from the environment. Most of the information used by the user to understand a layout comes from the eyes (what he sees). Understanding how the user's eyes work, and mainly, how they **scan** is a valuable input for the design process.

Two Main Forces

There are two main forces that drive the way a user scans the page. **Top-to-bottom** and **left-to-right** (the latter depends on a few things. I'll get there in a minute).

Both of these forces are relevant in print design such as newspapers, eBooks and ads. In the same way they are relevant for all digital layouts, such as websites, landing pages and mobile apps.

Let's examine these forces:

Figure 2.1 – The two forces

Top to Bottom

The first force we deal with is the vertical one – making us scan visual information from top to bottom. This rule is also called **"The Gravity of Gutenberg"**, named after **Johannes Gutenberg,** the inventor of the printing machine. Whenever we look at a visual interface, we start our scanning at the top and something makes us move downwards towards the bottom.

What do we do with that? We put the main and most important information on top, in order to make sure the user sees it first. Pretty straightforward, right?

Left to Right

The second force is the one that influences the horizontal scanning. This force is based on the direction of reading the content's language. If your content is English-based, the force will lead the user's scanning flow from left to right, but if you are working with right-to-left languages, such as Hebrew or Arabic, the second force will make its users scan the other way around - from right to left.

Just to clarify - the text isn't the one driving the force. This force is context-based. A left-to-right reader assumes in advance that the content will be placed accordingly, so his eyes "automatically" land at the top left of the screen as he begins scanning.

Editor's Note

For reasons of convenience, from now on, I'll address the horizontal force as 'right-to-left', but if you are dealing with language going the other way – make sure to flip all of the following models horizontally.

Combining the Forces Together

In physics, whenever we have more than one active force, we combine them together into a **vector**, embedding the different forces into a unified guiding arrow. However, knowing the direction of each arrow isn't enough to draw the vector's arrow. We also have to know each force's magnitude. So, which one of these forces is stronger?

The **top-to-bottom** or **left-to-right**?

Generally speaking, both of the forces have an equal magnitude, essentially creating a vector across the screen moving from the top left to the bottom right.

Figure 2.2 – General scanning vector

The general scanning flow of the user will start from the top-left corner of the screen. The 2 forces will lead his eyes towards the bottom-right corner.

Another Editor Note

For now, let's leave scrolling out of the picture. We'll add it later on.

So, Users Scan Diagonally?

Does all of this mean that users scan the screen diagonally?
Hold on, the answer is no. Research methods such as **eye-tracking** reveal that people scan visual interfaces in horizontal and vertical flows. Only our **fixations** – the eye movement between each pair of focal points - are diagonal. So this idea of a diagonal vector indicates to which general direction the user's eyes will move and nothing more.

So, How Do Users Scan???

All we know so far is that users start to scan at the top-left and finish at the bottom-right. But what happens in between? Well, the answer is **it-depends.** It depends on you – the designer. The way elements are placed within the screen will define how users scan the screen.

This is both bad news and good news. Bad news for people who assumed that there is a fixed model and that we can't influence that process. This is bad news because if you haven't taken charge of that, you actually left it for luck. We never want to lose places we can take charge of. Whenever the user doesn't scan the screen the way you wanted him to – you have only yourself to blame…

The good news is that we have the outstanding power of controlling how people scan our layouts. Good designers like control. We want to be the ones defining how users scan, based on our goals.

I'll be teaching you how to use that power in the following pages. You'll just have to keep on reading…

Secrets Revealed in This Chapter

Designer Secret #1
Two Forces with Similar Strengths Control the Flow

Designer Secret #2
Flow Starts on Top Left
and Goes Towards Bottom Right

Designer Secret #3
Reading and Scanning are Done in Straight Lines

Chapter 3

CONTENT PLACEMENT GUIDELINE

In this chapter you'll get to know:

- The classic content placement guideline
- How to direct the scanning process
- What empty space will help create a flow

Chapter 3

Content Placement Guideline

The challenge of placing elements correctly and creating a good layout wasn't born in the digital era. This challenge has been around from the first days of print.

The basic content placement guideline I'm about to show was born then and was created in order to help print designers plan their layout correctly.

Splitting the Layout into Four

This guideline starts by splitting our layout into 4 quarters. Top-left, top-right, bottom-left and bottom-right. They are numbered accordingly.

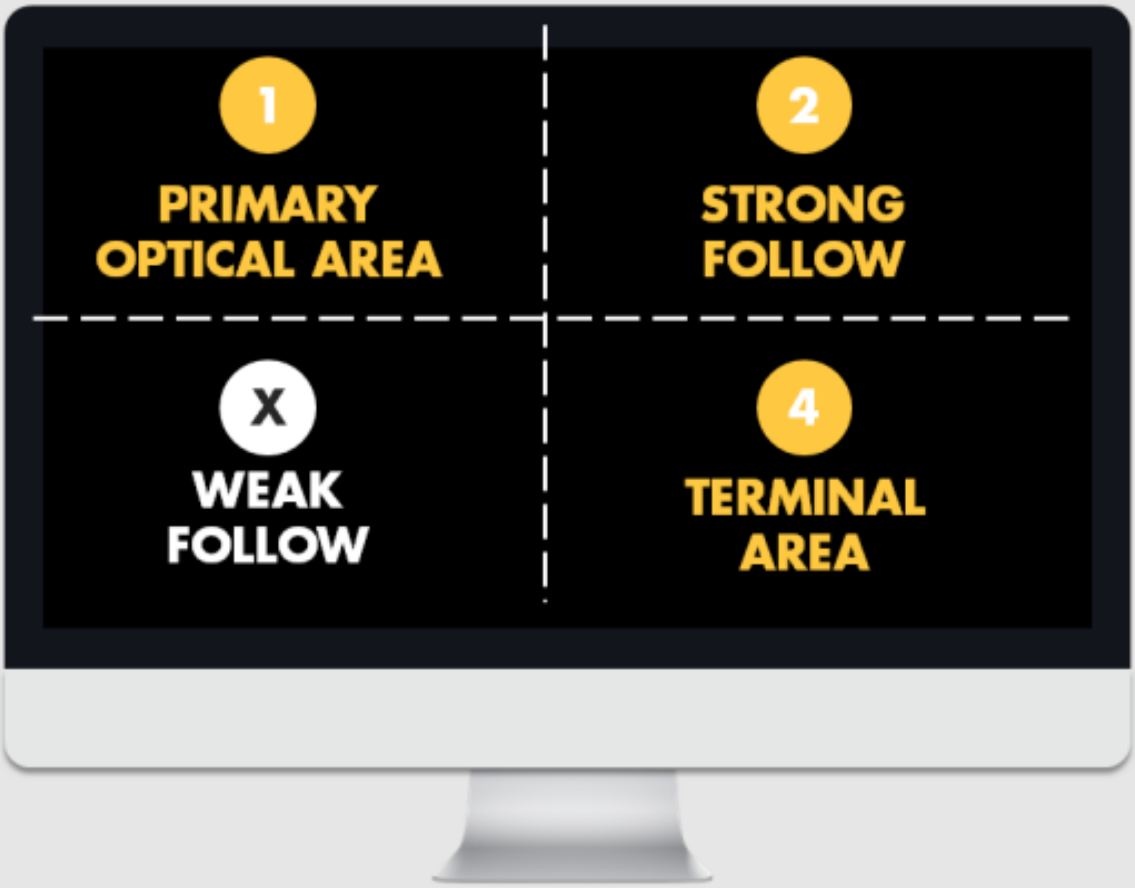

Figure 3.1 – Content placement guideline

Primary Optical Area

The first square, on the top left, is called the **Primary Optical Area**. It is the place our eyes land at the first glance of the page. The primary optical area will capture the user's initial attention, Therefore, it would be the right place to welcome the user to the page by placing the logo and providing orientation, answering the question 'where am I?' and building motivation to stay on the page.

Strong Follow

The second area is called the **Strong Follow** and it follows the primary optical area. Our vision is horizontal and, naturally, it would only make sense to lead our eyes and allow them to wonder horizontally to this area next. In order to support that idea, our goal as the designers is to place elements to make the eyes move horizontally. Placing a wide “hero” picture over the top area of the page, for example, will make that happen. For now, we are making use of the horizontal force.

Terminal Area

As the eyes wonder to the second area and go to the right toward the end of the screen, we would like to use the vertical force and drive the user’s eyes downwards to the fourth area, which we call the **Terminal Area**. This is where the visual flow ends. This area would be the correct place to put your call-to-action buttons, and the explanation for what it is the user can do and where he can continue from this page.

But wait! We skipped the third area!

Weak Follow

That’s right! In order to control the eye flow and make sure the eyes wonder in a way we would like them to, we actually skipped the third quarter. That’s exactly why this guideline calls the bottom-left area **Weak Follow**. We try not to place anything important there in order not to drive the user’s attention to that area.

If by mistake we put equal elements on the second and third quarters, we create a dilemma. The user, who has just completed scanning the

first quarter will get to a point where both the second and the third quarters demand an equal amount of attention and his brain will have to decide where to go. Since we know our horizontal and vertical forces have equal magnitude, this means that our brain will not know where to go. This situation will cause our eyes to wander between both areas, not following a directed flow, and the user will be confused and loses focus. We don't want this to happen, ever.

By skipping the third area, we make sure the user follows our pre-defined flow.

This Guideline isn’t Mandatory

The general idea described by this guideline builds a correct way of thinking. But skipping one quarter of the screen is a privilege we don’t always have. Therefore, this idea will fit landing pages and content websites, but might not fit professional products. With professional products - when we want to take advantage of every pixel of the screen - we will use this guideline slightly differently. We won’t put the bottom lines and main action buttons in the third quarter.

Secret Revealed in This Chapter

Designer Secret #4
Keeping the Third Quarter Empty Will Prevent Ambiguity

Let's See the Model in Action

In order to visualize this better we will use the page below as an example. Despite the fact that it probably uses too much introduction text, no one will actually read, the layout is certainly effective.

POCKET

Pocket's homepage shows a great use of the content placement guideline.

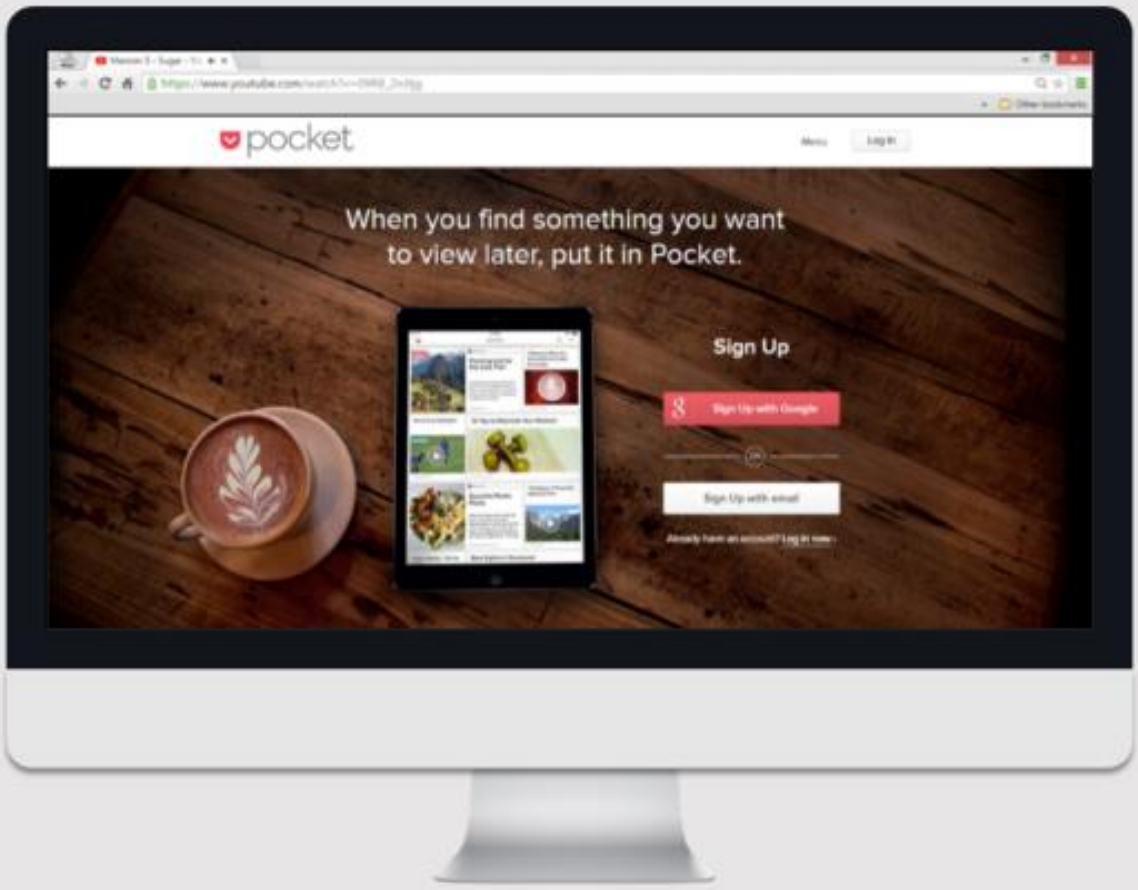

Figure 3.2 – Pocket's homepage

When he starts at the top left he will first see the logo. The beginning of the welcome text is placed in the left part of the screen, so reading the

main two lines of text take the user naturally to the second quarter on the top right. Once the reading is done, the eyes move towards the sign up options.

Surely, on the way, the user pays attention to the tablet and even to the coffee, but the eyes are not focused on them, since there's no detailed content that has to be examined there.

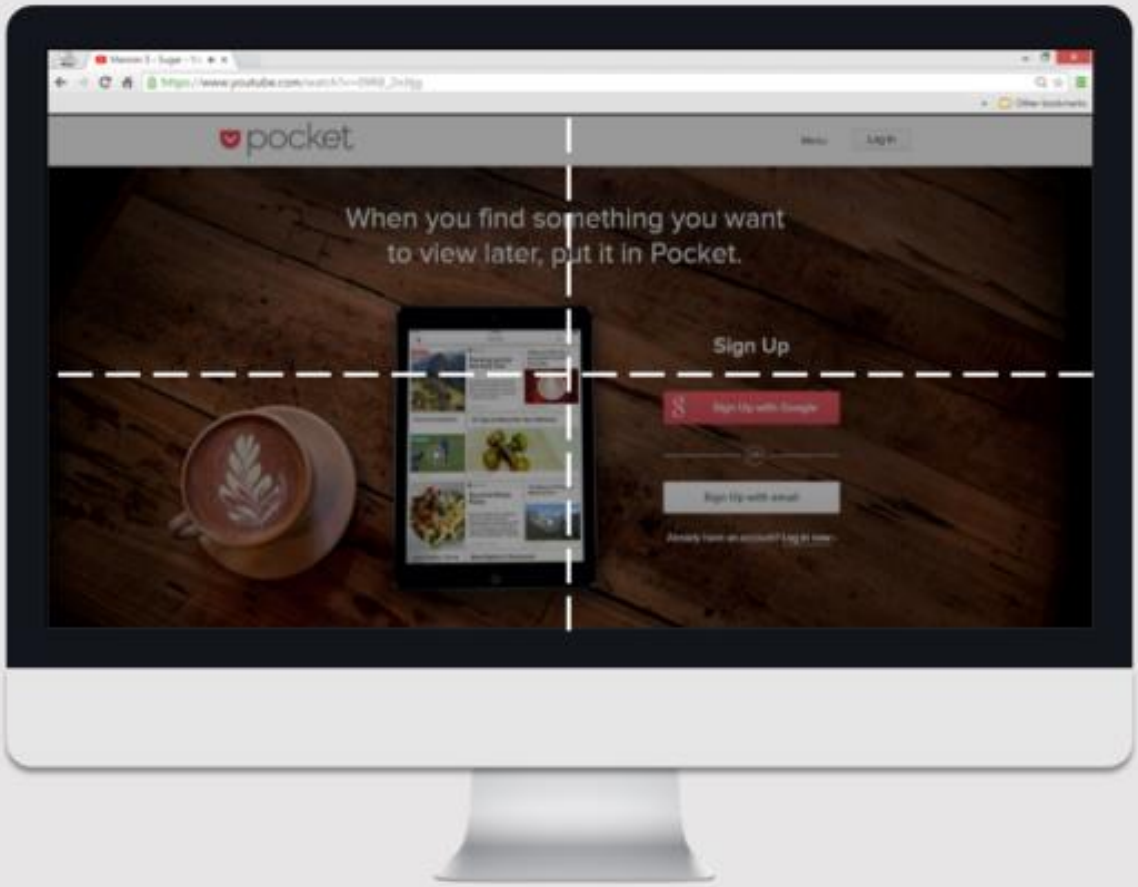

Figure 3.3 – Pocket's homepage split into four

Notice how the tablet goes on from the first quarter towards the third one, leaving the user with nothing important to look at in the third quarter. This way the Pocket guys can be sure the eyes go all the way towards the call-to-action buttons.

YOUTUBE

Another great example is the layout of a YouTube page. It follows the exact same pattern.

Figure 3.4 – YouTube's video page

The video starts in the first quarter and continues to the right; to the second quarter. The user's eyes are driven from the main video onwards to the group of additional videos. The user can't actually avoid looking to the right, due to the horizontal force affecting him.

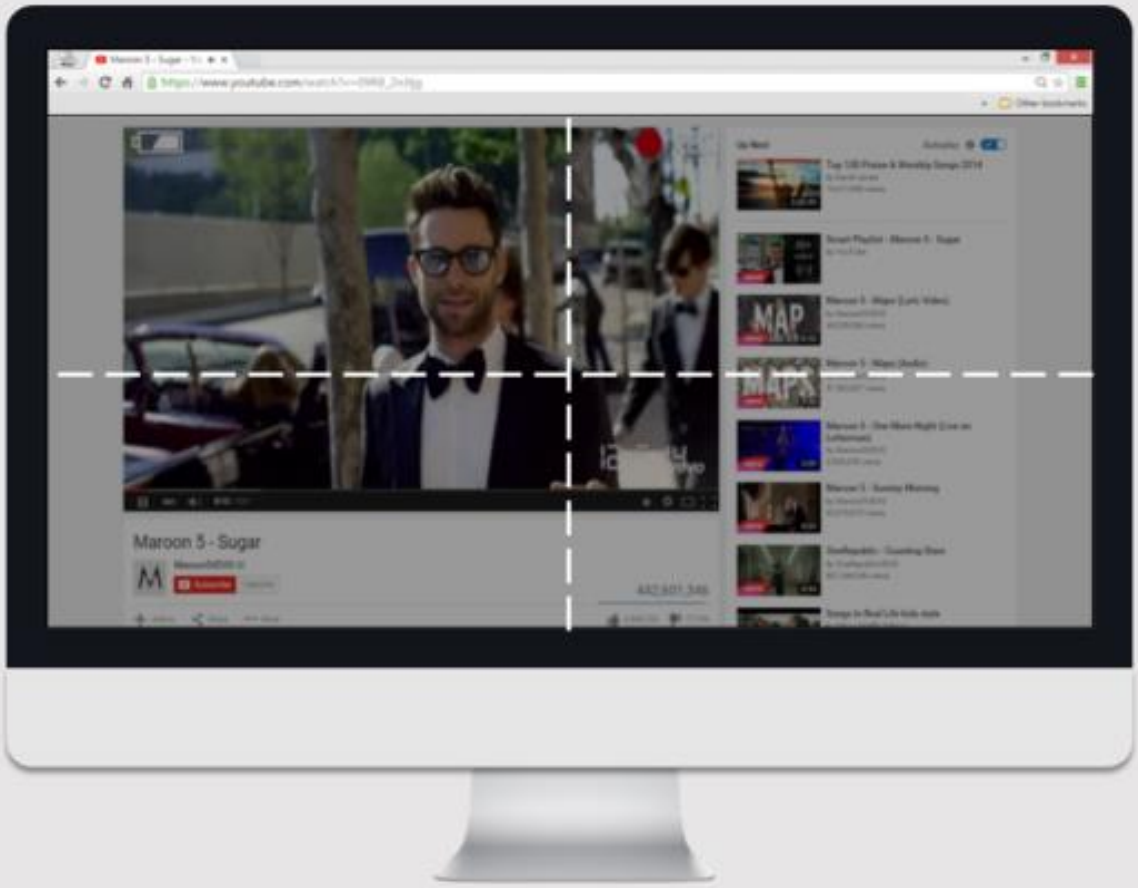

Figure 3.5 – YouTube's video page split into four

As he gets to the list of additional videos offered by YouTube, he starts scanning them vertically, moving from the second quarter directly into the fourth one. The fact that there is no important added value in the third quarter helps the user stay focused and helps YouTube grab the attention to the next videos, improving the chances that the user will go on and watch another video – which is exactly what they want the user to do...

Warning! Don't Get Too Attached

Please don't get too attached to that guideline exactly as it is. Since in a few chapters we are going to modify it and update the way we use it.

Chapter 4

PUTTING ELEMENTS INTO ORDER

In this chapter you'll get to know:

- How to begin designing a layout using frames
- The logic behind the a basic layout
- How to test your design and make sure it works

Chapter 4

Putting Elements in Order

Playing with Boxes

Designing a layout should always start with playing with rectangular elements. For a well-structured design process, you first want to define how the layout of these elements will be, simply by taking a piece of paper and dividing your screen up into rectangular elements. Each rectangular representing a specific role – an image, a block of text, a form or any other element you have in mind.

Playing with the frames and placing them on the screen will provide the baseline for your layout.

Remember, our motivation was to lead the way people scan and use our screen. Surprisingly, a big portion of that power is achieved when your frames have been placed correctly.

Defining Scanning Flow with Frames

Let's start to play. Let's say all I want is to create a page with a top menu, a secondary and an inner area for the main content. I'm designing a basic layout to show this structure, only by placing the initial frames and nothing more. Now comes the fun part…

Figure 4.1 – Basic layout made of frames

Test Your Structure

Amazingly, the structure I just created with three simple frames is already directing the way people scan the page. Go ahead. Ask people to help you with a short task. Tell them this is a website in English and ask them to enumerate the elements according to their order.

Don’t be surprised if this is the answer you’ll get from each and every one of them:

Figure 4.2 – Layout frames numbered

The Two Forces in Action

Why is that so obvious? Remember the two forces? The user starts scanning on the top-left, and meets frame number 1. From that point, the closest box is frame number 2. It starts at the same horizontal position as frame number 1, but is lower (Gutenberg’s gravity is at work now). Once you meet the second frame, naturally, you go on straight to frame number 3 (now the language force is at work).

It is that simple! By placing elements correctly, we can communicate how we expect the user's eyes to scan the screen.

What If?

But what if I wanted to make the user start scanning the screen vertically, and only then move his eyes to the right? Well, placing the frames in a way that supports the new flow can make that happen. Check out the following model:

Figure 4.3 – Effecting frame numbers by changing their structure

Don't take my word for it. Ask people around you. Let them number the frames, knowing that this is a left-to-right language website or application. You'll see that the frame from the left would be marked as

the first, the next top frame would be marked second and the main content area is marked as third. It might look trivial, but you just started influencing people.

The Magic Revealed

While you have only slightly altered the design of the page, you have entirely changed the way it will be scanned by the user.

Notice that through your design you can control the behavior of the user to fit your purpose and you then begin to understand how powerful you can be as a designer.

A 3-Minute Test

If you would like to make sure that your layout is indeed making people scan the way you want them to, you can do a simple test by handing out copies of your drawing and have a few people number your boxes according to how they would intuitively scan the page. If their numbering meets your expectations you will have confirmation that you have made the right design choices.

Dealing with More Complicated Models

Once you mastered that step of the way, and you understand the way forces affect the way people scan layouts, moving on to splitting areas into more complicated models is a piece of cake.

Check out the following layout. Try to number the elements on your own and see if you got the same flow that I had in mind. Ask some other people. You'll see this works like a charm.

Figure 4.4 – Layout numbering test

Secret Revealed in This Chapter

Designer Secret #5
Element Box Placement Communicates Screen flow

Chapter 5

ASSISTING DECISION MAKING

In this chapter you'll get to know:

- What are the elements that affect the way we decide
- How to design a layout to fit effective decision making
- How to use hierarchy to make a layout usable

Chapter 5

Assisting Decision Making

The Cognitive Process in a Glance

I mentioned the cognitive process earlier. The cognitive process of people starts by getting information from our different senses. Generally speaking, our eyes provide 95% of the information our brain receives.

When we deal with digital interactions, our brains gets a task and some information from the visual senses in order to try and deal with that task. The information goes through a filter, and is left with as little as 5% of the information our eyes provided.

This information is handled by the perception process. Through this perception, our brains process the information, and at some point we get to the point where our brain decides what to do next. The decision process might end with an action, such as talking, moving our hands to

the keyboard, driving the mouse or sending the finger to perform a touch gesture.

Understanding How People Decide

Understanding how each step of the cognitive process works is a **gold-mine for designers**. I won't get into it, but instead will dive into the way we decide. You'll see in a minute that understanding what affects the user's decision process will help us create a winning layout.

In order to understand how people decide, we have to learn about jam! Yes, I mean the stuff you spread on bread... Specifically, you have to get to know the famous jam study performed in the mid 1990's by a Stanford graduate **Sheena Iyengar**.

Sheena conducted a research, which is now considered one of the most referred social marketing researches ever done. The purpose was to examine specific behavioral patterns based on choices that are offered to people.

The First Step of the Research

The research team used a local grocery store to set up a stand on which they offered 6 different types of jams for visitors of the store to taste and then perhaps make the decision to buy one of them.

30% of people entering the store ended up stopping at the stand and tasting the different jams, **of which 30% ended up buying.**

The Second Step

In the second iteration, the research team changed one factor. Instead of offering 6 different types of jams, they offered 24 to taste and choose from.

Surprisingly, the wide range of options attracted much more attention. **40% of the store's customers stopped to taste, but only 3% ended up actually buying one type of jam**.

So What?

The result of this research shows that offering 6 options makes it easier for the customer to make a choice, while offering 24 types of jams made the stand look more intriguing to a larger number of people, but it also made it tougher for them to make a choice.

Hick's Law

William Edmund Hick, an American psychologist, and his colleague **Ray Hyman** performed a research and found a formula that represents the time it takes to decide as a factor of the number of choices we have. Without diving into its details, the Hick's law defines that **the more options we have – the longer it takes to make a decision. This was back in the 1950's.**

Paradox of Choice

A few years later, in 2004, an American psychologist, **Barry Schwartz** presented the idea of paradox of choice. The basic idea behind Schwartz's assumption is that **whenever we have too many options**

to choose from, we choose not to choose.

The Jam Research - Third Step

Back to the jams. The research didn't end after offering 24 jams. The team was interested in how customers felt about their choices and therefore modified their research slightly. They switched their product to chocolate pralines, offered their customers to taste and then choose one to take home free of charge.

The same concept was used by first offering 6 choices and then 24 for the control group. Of course people chose one in the end no matter how many choices there were because they were offered for free.

After they purchased their chocolate, however, parts of the research team were waiting for them outside the store to quiz them about how satisfied they were with the choice they made. It turned out that the people who chose from 6 options were more satisfied than the ones who chose from 24. The people who selected one item from 24 were much less satisfied, knowing that they probably missed a much tastier option from the rest of the 23 flavors.

The third part of the research described above reveals the way we deal with choices. In addition to the fact that it takes longer to choose from a larger number of options and that we might fall into the trap of avoiding a decision (choosing not to choose), it seems that once we do select an item from a long list, we tend to regret it.

Thank God We Have Miller

Knowing all of these limitations are affecting our decision making, we need a solution. We have to find a guideline for the correct number of options that can drive people to choose effectively. This is where **George A. Miller** comes into the picture. Returning back to the 1950's, Miller, one of the founders of the cognitive psychology, was researching the different aspects of our cognitive processes. He explored our short and long term memory, the way we retrieve information from our memory and some different aspects of decision making.

In his research Miller found that all of our cognitive processes are limited and that human beings have a hard time dealing with multiple elements. Miller coined a basic guideline and offered **the law of 5 plus/minus 2 options** to fit the way we decide. **Miller's law** guides us to offer between 3 and 7 options whenever we want to support effective decision making.

The Four Rules of Decision Making

The jam research is only one of the many examples illustrating how we make decisions. Decision-making can be summed up by four main rules:

- The more options we have – the longer it takes to make a decision.
- Whenever we have too many options to choose from, we choose not to choose.
- Whenever we do choose between too many options to choose from - we feel bad about our choice.

- Effective decision making is achieved when we have 3-7 options to choose from.

What does All of That Have to Do with Design?

You've been patient and I really appreciate it. Now let's see how all of the above affects our layout.

Let's start by looking at the following screen structure. Yes, you've seen it before, but this time I have a different question. Without knowing the purpose of this screen, and without getting into details, does this look like a complicated screen for you to use? I'm sure you'll conclude that it doesn't look too complicated.

Figure 5.1 – Simplicity test – Layout #1

Now, what about the next one?

Figure 5.2 – Simplicity test – Layout #2

This one seems more complicated, but still usable, right?
But what about the following one?

Figure 5.3 – Simplicity test – Layout #3

I'm sure you can agree that this layout seems crazy. At first glance it seems like this is a screen way too complicated. And you got that feeling even though the elements in the screen are actually empty!

Simplicity or Complexity are Defined Early

You can see that our perception of complexity is based on the basic elements that form the layout. This happens much earlier than the stage in which detailed UI controls are placed. What is the factor in charge of making a layout simple as opposed to a complicated one? The exact number of basic elements. Three elements were simple. Seven were OK. But ten are way too many. But wait. Isn't that exactly what Miller said?

Dealing with Complex Structures

Having a very simple layout is a privilege we might not always have. What do we do when our structure does require much more content? This is exactly where we use **Hierarchy**.

Instead of splitting our layout into its smallest pieces, we divide the process into a few levels. The basic layout will be based on 3-7 basic elements, and each one of these elements may be split into more elements internally.

Figure 5.4 – Using hierarchy to simplify layout

In the layout shown above you can see the same number of elements. However, instead of creating them in one hierarchy, I actually divided the layout into 4 basic elements, and then divided each one of them internally according to its structure. The outcome is a much simpler model which is easy on the eyes and allows the brain to process it.

SECRETS REVEALED IN THIS CHAPTER

Designer Secret #6
Multiple Options Result in People Deciding Slower or Not At All

Designer Secret #7
Decision Making Works Best with 3-7 Options

Designer Secret #8
Perceived Complexity is Set on Box Placement Stage

Chapter 6

IMPLICIT FLOW INSTRUCTIONS

In this chapter you'll get to know:

- How are brain uses patterns to understand things
- How to apply the patterns and lead the eyes
- How to make the layout intuitive and avoid ambiguity

Chapter 6

Implicit Flow Instructions

I'm sure by the time you got to this chapter you can see how powerful a good designer can be. We have a valuable set of tools that allows us to influence and guide the way people use our layouts. But this was all a game. In the following chapter I'm about to take you to a place where our design powers become a little scary, and explore how far we can take the powers of design.

The World of Gestalt

Christian von Ehrenfels was an Austrian philosopher and one of the founders of **Gestalt psychology.** The Gestalt is a fundamental and wide theory that has an effect on many different aspects of human behavior. Although there are many implications of Gestalt on design, I'm going to stay focused and as practical as possible (and invite you to learn more about Gestalt on your own).

The word Gestalt in German means “shape” or “form”. The basic assumption of the Gestalt theory is that we human beings tend to perceive the reality around us based on a pre-defined set of patterns that simplify things for us.

Is it a Bird? A Plane?

The most basic example of Gestalt is the following. Look at the following visual and describe what you see.

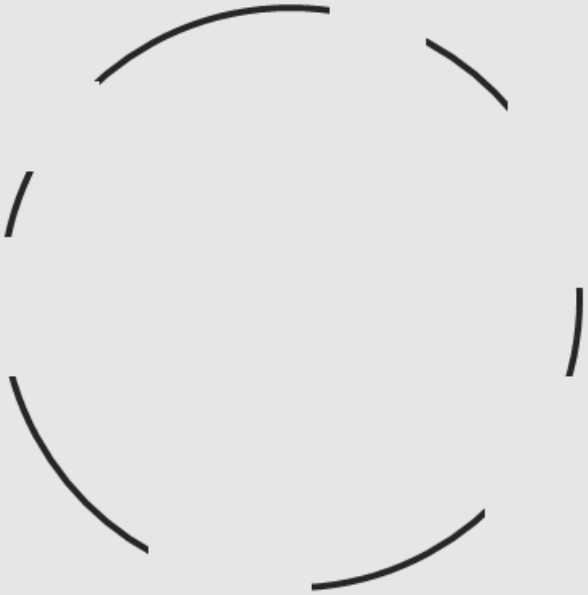

Figure 6.1 – Understanding Gestalt – What is that?

Let me assume you choose to describe that as a dotted circle. I guess you didn’t describe it as a set of six different curves in space. Why is that? Was there any hint showing a connection between the six separate elements? The answer is Gestalt. The reason for that is that it was much easier for you to process that set of elements as a single unit rather than process each one of its components separately. This is how

we work. We try to find the easiest way out…

The Easiest Way Out?

Let's give it another try. Look at the following object. What do you see?

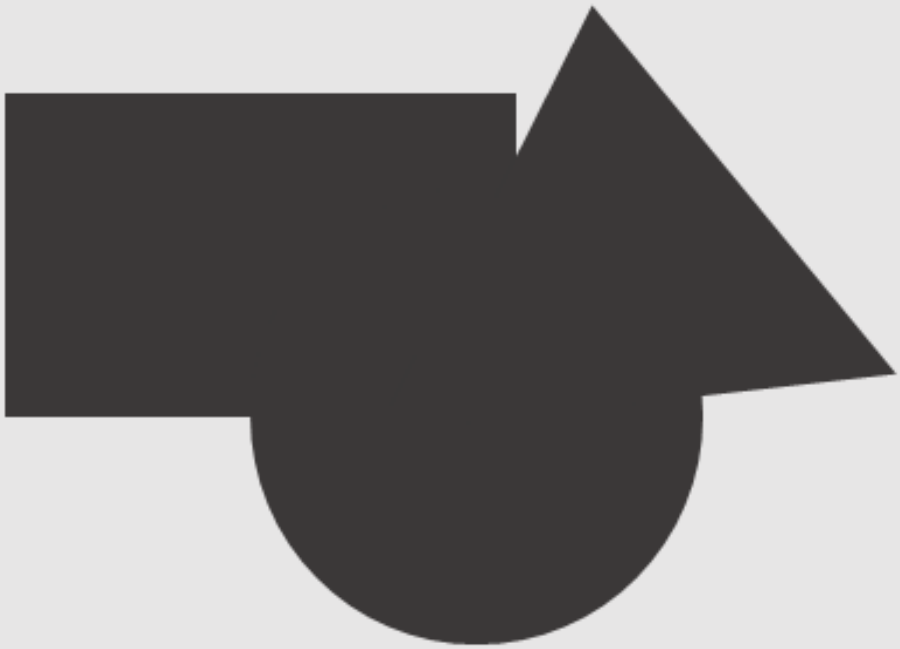

Figure 6.2 – Understanding Gestalt – An interesting shape

This time you probably think you didn't fall victim to Gestalt psychology, right? You assume that you didn't try to look at it as a single unit. Instead, you actually split it into 3 different elements – a rectangle, a triangle and a circle, right? Well… This is another basic Gestalt pattern. We will try to process elements in the easiest way we can. This time dealing with the complexity of the shape that we see, is in fact more difficult to do. Splitting it into 3 basic objects we are all familiar with, makes our lives easier.

Gestalt Rules Us

There are many more patterns and examples of how Gestalt controls us. But we, as designers, never want to be controlled. We want to be the ones controlling things here. Why not use Gestalt to our advantage?

This is where Gestalt becomes powerful. Instead of placing elements and looking at how people will perceive them using Gestalt, we are going to go the other way around. Knowing what the mind does when faced with visual appearances and how people perceive visuals using pre-defined patterns, allows us to place elements in a way that will make the user act or move in a direction we want to lead him to. In other words, we may use the patterns of Gestalt in order to plant the thoughts in our user's mind.

The Power of Proximity

One of the most important Gestalt principles is called **Proximity**. The rule of proximity shows us that the distance between elements will guide the way we perceive them.

Look at the following group of elements. They look like a mess. Ten squares hanging in space.

Figure 6.3 – Understanding Gestalt – Multiple objects #1

But now, let's look at this group of elements:

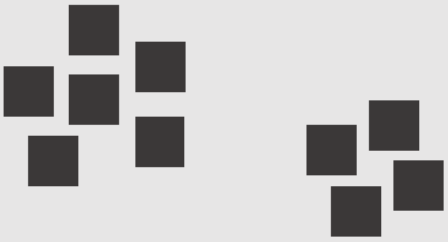

Figure 6.4 – Understanding Gestalt – Multiple objects #1

What you see in there are two separate groups of squares. The left group has six elements and the right group has four. You can't control it.

What Made You Group?

This is exactly where the principle of proximity is working its magic. The fact that a few elements have an equal distance between one another, and a bigger distance between them and the other group, made us treat them as separate groups.

You will also assume that the members of the left group aren't talking to the members of the right group. If you'll think about it logically, this is crazy. These are just a bunch of visual elements! Try to think how this affects your life. If you see a group of people standing in equal distance between one another, while you stand a little further away from them, your brain can make you feel left out.

Applying Gestalt in Our Layout Design

A basic application of the proximity principle can be seen in the following model:

Figure 6.5 – Element grouping using proximity

Take a look at the top menu bar in the layout above. You can easily understand that the seven elements to the left have something in common. You also know that the two elements on the top right have a different role. Also, instead of dealing with nine buttons, you now have to deal with two groups. When you decide to go on and deal with the left group, you'll drill down and have to work with seven items.

This model supports the idea of **hierarchy** presented previously, and also works well with **Miller's law of 5 plus/minus 2** elements for decision making. See how things start to connect?

Same with the action buttons at the bottom. There are two groups of actions, each with a common role, and a separate action button standing on its own. Probably Save or Exit or Cancel. He doesn't belong to all the others.

Let's Take That to the Next Level

Look at the following layout. How would you describe it to someone you are speaking to on the phone?

Figure 6.6 – Describe what you see – layout #1

You would probably say there are five columns of four rectangles each, right? Why did you group them into separate columns? Gestalt. Proximity. That's right. Let's take it one step further. Remember our

method of numbering the elements on the screen? How would you number the elements above?

Understanding the basic forces we talked about in our early stages makes me pretty confident you'll define the top left rectangle as the first one. And since the objects below are closer than the ones on the right, you'll go into a vertical sequence and number the items below objects #1 as #2, #3 and #4. Only after numbering the elements of the first column, you'll go to the second and start with number 5.

What happens if we change the placement of the rectangles to this?

Figure 6.7 – Describe what you see – layout #2

Now how would you describe what you see? Would they stay five columns of four elements each? Probably not. The story here is completely different. Now we have four rows of five elements each.

Numbering the elements now will lead to a completely different answer. Sure the same rectangle from the top-left will stay number one, but your eyes will go all the way to the right before moving to the second row.

See what happened? The distance between the elements not only helped you perceive them as groups, it also affected the direction your eyes went.

If you would like your users to scan the elements on your online store horizontally, considering the spaces between the elements will help you achieve that. And by not paying attention to these factors, you might cause the users to scan the screen in a different way than what you had in mind.

The Problem with Most Designers

The problem with most designers is that they like things to be consistent. Most of the time, they will do their best to make sure that the spaces between elements horizontally and vertically are the same. They will even measure them and make sure it is done by the pixel.

But what happens if both spaces – vertical and horizontal – are the same? This is exactly where we get layouts that look nice and consistent, but don’t assist and guide our users.

Check out the following layout. What will happen now? How would you number the elements? In what flow would you expect the user's eyes to scan the elements? You probably don't know. Your user doesn't know either and neither does his brain. In the best case, we leave it up to luck and hope the user will look at the elements in the way we wanted. But actually, what happens is that instead of getting 3-7 groups of items, in a way that fits hierarchy and Miller's law, the user gets too many options. He gets twenty elements on the screen.

Figure 6.8 – Equal horizontal and vertical spaces

Remember what happens when we get too many options? We choose not to choose. In web interaction this basically means that the user is

leaving your page.

Let's Take That into Form Design

When it comes to form design, things work pretty much the same.

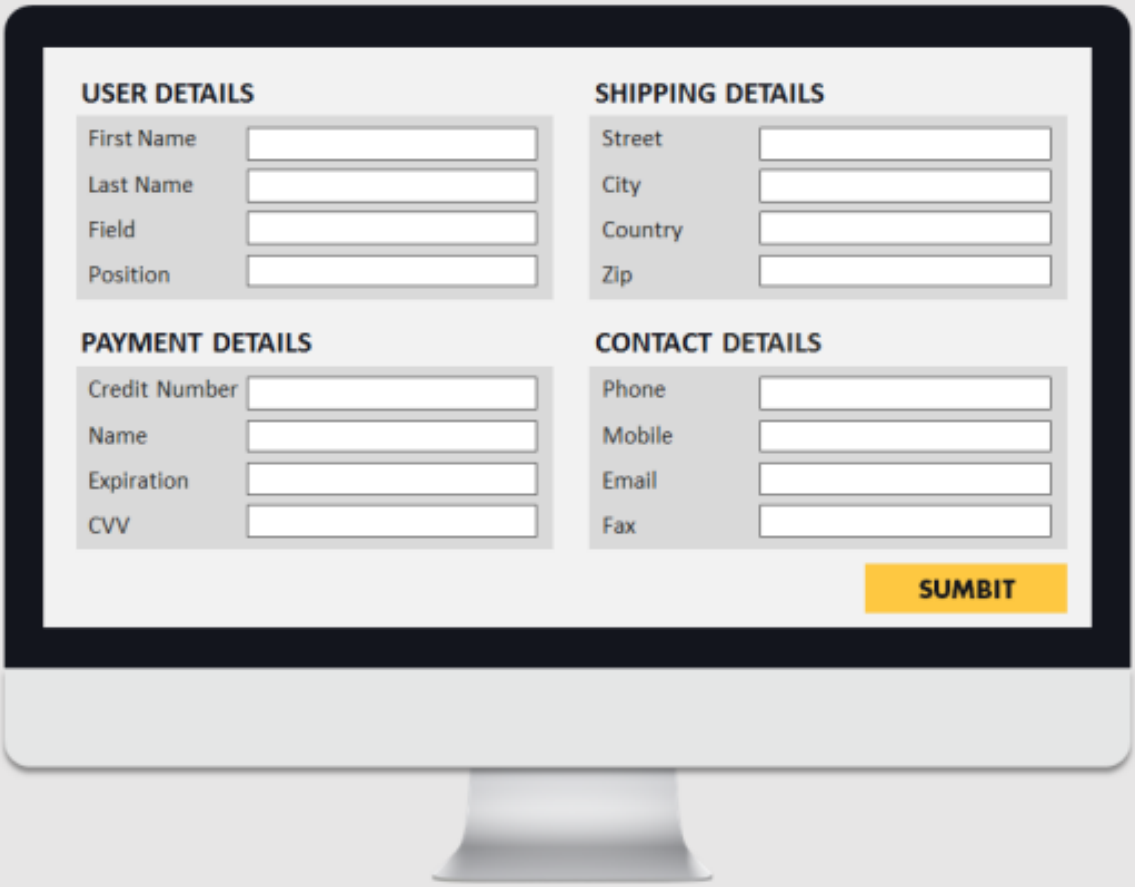

Figure 6.9 – Intuitive form design

Our basic forces tell us that the user will start by filling in the user details. But where will he go from there? We can't really know. Placing the shipping details box and the payment details box in an equal distance from the user details box makes it impossible for us to guess and for the user to follow what we had in mind. If the user is an advanced user, once his cursor will be placed inside the "Position" field,

he may click on the Tab button in order to move to the next field. His eyes will move to one of the areas, but the cursor may move to the other.

This is where usability problems are born. Where instructions aren't clear enough.

The Power of Implicit Instructions

By applying the principle of proximity, we can support either one of the directions. We can make the eyes go naturally to the right and move over to the shipping details or go down naturally into the payment details area. By using Gestalt we gain control over the situation and we may use it elegantly, by using implicit instructions embedded within the layout, and without leaving any explicit trace such as numbers (most designers I know would tell you to number the different boxes in order to tell the user where to go next).

Secret Revealed in This Chapter

Chapter 7

MAKING THINGS READABLE AND SCANNABLE

In this chapter you'll get to know:

- How people read and scan
- The rule of 7 seconds and its effect on people
- How to use labeling to assist scannability

Chapter 7

Making Things Readable and Scannable

From T.M.I To TL;DR

A decade ago we were in **the era of T.M.I**. Too Much Information. One of the main changes in our lives since the birth of the internet is having too much information and not enough time to deal with it.

Recent years took us from trying to deal with it into understanding that we can't, moving from T.M.I into TL;DR If you haven't been introduced to it yet, TL;DR stands for **Too-long-didn't-read**. For the Y-generation audience (formally defined as people who were born after the year of 1980) it is fully legitimate to send a response meaning "You wrote too much. You don't really expect me to read that, right?" or "if you really want me to have a look, make it shorter!"

We Weren't Supposed to Read

Going back to our sources, if you think about it, reading and writing h only been part of the general public for the last 600 years, since the printing revolution. Cognitively, reading and writing take effort.

If you examine the development of babies, you'll notice that they start to communicate after a few months and usually, start to walk in their second year. However, reading and writing requires a much more advanced set of skills and lots of training. Children get to the age of five or six and only then start to deal with text.

Cognitive sciences show that **dealing with text takes as much as 60,000 times more**, than the time required by our brains to deal with visual elements.

Some say that we actually weren't supposed to read and write. We aren't built for it. And others may offer the idea that as time goes by, technology will allow us to skip the need of reading and writing, using different and more effective ways of communication.

We Don't Read

While reading is still around us, the bottom line of all of this is, that we don't read. Or putting it bluntly, we don't want to read. We want to read as little as possible.

It was **Jakob Nielsen**, one of the creators of the world of Usability, who said that all people want in their digital interactions is **"Get in, get it and get out!"**.

Our role here as designers is to allow users to get to the place they are looking for as soon as possible, and invest as little time as possible in reading things that they aren't looking for.

Basic Reading Pattern

In order to understand the way we scan and read digital interfaces, we have to start at the basics. The classic way that we read is based on a pattern called the **Z-pattern**.

Of course this is rather trivial and seems pretty obvious. You start to read the line from one side and when you get to the end you move to the second. Basically, that model is naturally true for moving across paragraphs and for scanning the elements on the screen.

Figure 7.1 – Z-Pattern for reading and scanning across a layout

Z-Model with No Time

The important thing to understand here, however, is that interacting with digital design is not the same as reading a book. One reason is that the screen is much wider than a book, which makes it a physical challenge to scan the screen horizontally from one side to the other. We will deal with this issue later.

But the main difference is that the attention span of a user in a digital interaction is far lower than the attention a user has when reading a book, and the intentions and context are usually completely different.

When reading a book, you are interested in all of its content and have time and desire to read every word. However, when reading a website you are most likely searching for something in particular and don't have the time and motivation to read the vast amount of content found on the internet. Remember TL;DR?

Therefore, when reading goes digital we get a shorter version of the Z-pattern: The **F-Pattern**. Looking at eye tracking heat maps for content pages reveals that people don't read the content presented in front of them thoroughly. We all start reading the title and move on to the main paragraph, some of which we may read.

Figure 7.2 – F-Pattern for digital scanning

We go on and read thoroughly only if this is found to be what we were looking for. Assuming we didn't find what we are looking for in the first paragraph, we will try to perform a quick jump and skip to the next paragraph, and after scanning some of it, we will jump on to the next one. The understanding is that the more we move along, the more we lose patience, we spend less time on each paragraph and after 2-3 paragraphs we actually stop.

Making It Easier For the User

When designing a layout we want to consider the fact that people don't want to read and rather, prefer to scan the page. We can assist the process of scanning by supporting three principles:

- Making sure each paragraph is labeled with a simple title – a title that will look like one (bigger font, stronger color, etc.) and that will provide a concise and straightforward summary of the info it holds.

- Create a good visual separation between the different paragraphs, helping our eyes know where to jump to from one paragraph to another.

- Place the elements from the most important and relevant content for the users to the least important one. We don’t want our users to lose their patience, leave the page and miss the place where the main information is placed at the bottom of the page.

The Rule of 7 Seconds

Web research shows us that we have up to 7 seconds from the moment the user landed on our page until the time he makes the basic decision to stay and dive in, or leave the page. This means that as designers we have to plan our layout in a way that will provide a sense of orientation, tell the user where he is, and build the motivation to stay.

The 7 second rule is a great tool for testing the ‘scannability’ of your page. This isn’t only relevant for web interfaces and promotional pages. This rule can also be applied when dealing with users who are frequently using a known interface. The 7 seconds test will allow us to

check if the elements on the page are laid out in a way that supports scanning and getting directly to the right place on the screen.

Look at the following screen. Take 7 seconds and try to understand what information it is giving.

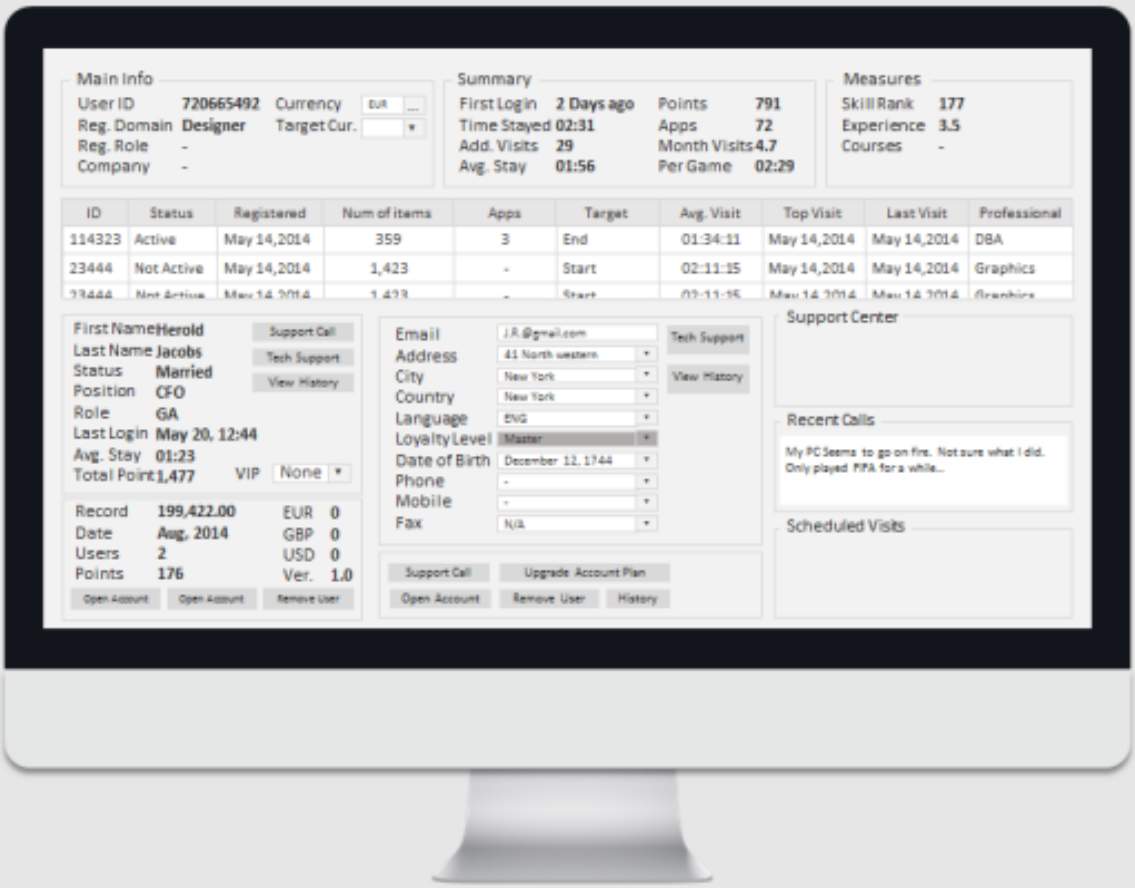

Figure 7.3 – An online service professional interface

Am I joking? Well, no I am not. The layout above is a duplication of a layout I got in one of the customer support systems I redesigned. This screen is used on a daily basis by a few hundreds of support assistants

in the company's support center.

If you look at it for seven seconds you might pay attention to a few specific fields, but there's zero chance you understand what this screen is offering. This is where I want to reveal another great source of design power.

Labeling

Labeling is a one of the strongest secret powers of a good designer. The idea is simple. In order to allow the screen to be scanned and understood in seven seconds, we have to create hierarchy and allow only an initial set of elements to pop out of the page. The way to achieve this is to put a label on top of each one of the basic frames of the layout. This is probably the easiest way to take a lousy layout and improve it within a few seconds.

Look at the screen now. I added labels to the different areas of the layout, without changing anything within the content of the different areas. I made sure the labels are big enough and have a strong contrast over the content of the page, and that's it. Try to look at the screen now for 7 seconds and tell me what you can get from it, and you'll see that you can actually get a full answer straight forward.

Figure 7.4 – Correct labeling with Miller in mind

I Cheated…

Actually, I didn't really follow the rules. If labeling means that I have to put a label to each one of the basic elements on the screen, I should have had many more labels, since the screen is built out of eleven different areas. But **Miller** wouldn't allow that, right?

If I'd place eleven labels on top of the different areas, I'd automatically fall into the too-many-items trap. This is how it would look.

Figure 7.5 – Labeling with too many basic areas

Label Hierarchy

By putting top-level labels and limiting them to up to seven, I supported the seven seconds specifically, and scanning in general. Now I have to use hierarchy and add some second level labeling for the elements within the main areas. This way, once the user decides to dive deeper into one of the areas, he will have a supporting layout that will provide the required information for understanding what can be found in any of the basic areas.

Figure 7.6 – Correct hierarchy with secondary labeling

Notice how the second level labels don't attract attention, only when you decide to dive deeper into each one of the main five sections.

Secrets Revealed in This Chapter

Designer Secret #10
Effective Reading and Engaging Reading are Two Different Things. Aim for Engagement.

Designer Secret #11
Basic Reading and Scanning are Based on Z-model.

Designer Secret #12
Actual Content Scanning is Based on F-model

Designer Secret #13
It Takes 7 Seconds to Identify Screen Content

Designer Secret #14
Labeling of Content Areas Helps Scanning Work

Chapter 8

GOLDEN RATIO & WHITE SPACES

In this chapter you'll get to know:

- What da Vinci found out about the world
- How to apply the rule of thirds on layout design
- How to embed white space and create a movement

Chapter 8

Golden Ratio and White Space

Golden Ratio

Leonardo da Vinci was born in 1452 and died in 1519, almost 500 years ago. Amazingly, his findings still have a direct effect on design today. Da Vinci never seized to dive into the world of discovery and did endless research in order to figure out how things operate.

In particular he was interested in the structure of the human body and why it is built the way it is. In order to understand human anatomy, da Vinci used to steal bodies and perform surgeries. Nowadays, this is a less popular technique among designers, so we have to use da Vinci's findings and take his word for them…

In his research, da Vinci discovered that a consistent ratio repeats itself in the anatomy of a human body. The so-called **"Golden Ratio"** in which the various body parts are structured in relation to each other

was found to correspond with all kinds of natural phenomena. The golden ratio is represented by the Greek letter phi (ϕ) and defined by the following formula and value:

$$\phi = (1+\sqrt{5})/2 = 1.61803398875$$

The sunflower demonstrates this perfectly. The distance from the center of the flower to the edge of the seed circle and the distance from the outer edge of the circle to the end of the flower petals are set in precisely this Golden Ratio.

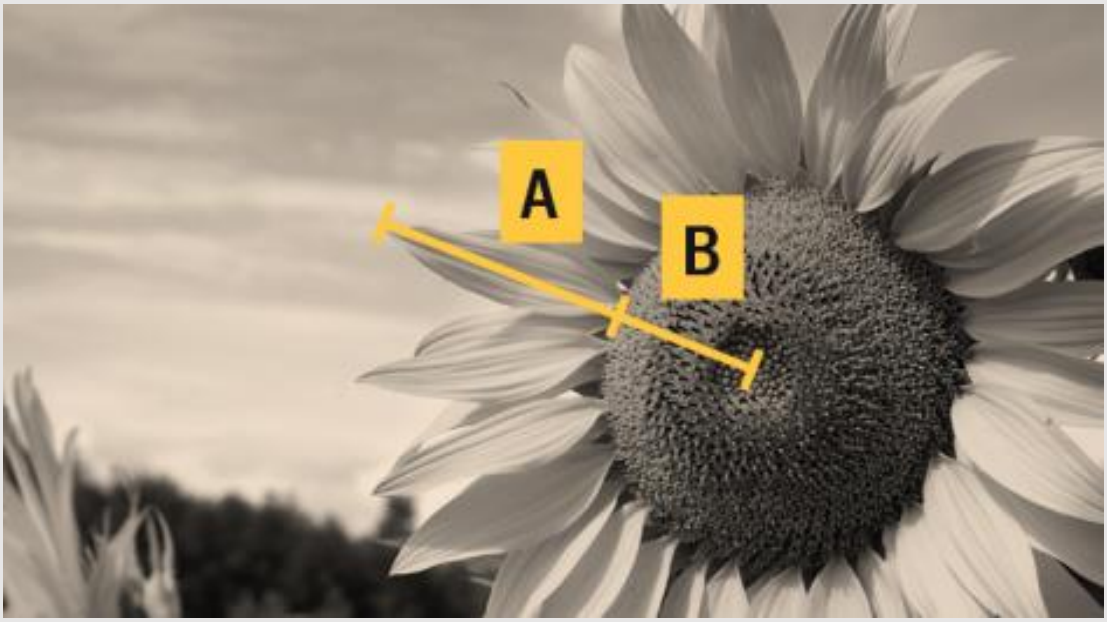

Figure 8.1 - A = B X 1.618

While the golden ratio is a well thought out formula, the easiest way of remembering it is as a **“rule of thirds”**. The flower petals are two thirds of the entire length of the axis, while the radius of the inner circle is one third.

The Rule of Thirds and Digital Photography

This ‘rule of thirds’ is strongly evident in photography. Digital cameras and the cameras on smartphones have a grid placed on the screen dividing it into 9 squares. Most people remove this grid from their screen because they are not aware of its function and it simply irritates them.

Most of the people, who obviously have no design education, will usually place the main element of their picture in the center of the screen, which of course is the most intuitive thing to do. The result of this is a very dull picture, like the one below.

Figure 8.2 – A boring photo of a phone

All you see is an old telephone, which in itself is not very exciting. However, if you follow the rules of the Golden Ratio, splitting your screen into horizontal and vertical thirds, and then placing your main element in any of the crossing points, your image automatically becomes more interesting.

Figure 8.3 – An inspiring photo of that phone

The same phone, with the same background becomes a part of a story. The phone is no longer just a simple object. It is a part of an unknown situation that inspires our thoughts and causes our mind to wander. In addition, it creates a flow and a feeling of movement and leads our eyes. This effect is achieved only by placing the image on the right spot.

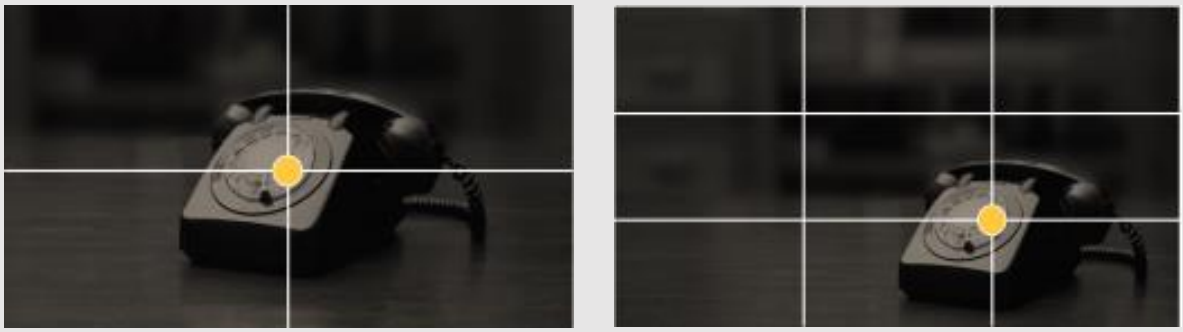

Figure 8.4: Object placement based on the golden ratio

So without really knowing why, this really works! If you look at images taken by professional photographers, with this in mind, you will

suddenly notice that they are well aware of this rule.

White Space

Before we see the implications of the golden ratio on web design, I'd like to leave it aside for a second, add another element to our conversation and talk about "**White Space**". White space is the name given to areas which are left empty with no content. In the second version of the phone photo we've seen above, all of the areas around the phone are considered as white space, since there's nothing to see there.

White space is another secret power of designers. Although it looks like this area was left empty unintentionally, we plan specifically how to use that white space, and once again, we leave nothing to chance. The power of white space lies behind the fact that whitespace emphasizes the existing element. White space also makes complicated things look simple. So if you have a complicated and detailed area on the screen and you would like to make is seem easier to use, instead of redesigning it, you might want to add some white space around it.

In addition, white space creates a feeling of movement and flow. Look at the following photo of the plane. Leaving an empty area behind it makes it feel like it is moving.

Figure 8.5: Movement effect with white space

Better Together

The reason for adding white space to our discussion in the middle of talking about the golden ratio is because these rules work well together. If you pay attention, you'll notice that the white space left behind the plane is a third, while the plane itself takes two thirds of the photo. A coincidence? Nope.

It was **Jan Tschichold**, one of the most influential designers worldwide, who said that **"White Space is to be regarded as an active element, not a passive background"**.

Figure 8.6: Airplane photo supports golden ratio + white space

White Space and Our Sub Conscious

White Space, however, can do way more than just making a page look sleek and simple. It can stand as a message in itself. Probably the best example for the use of White Space, is the FedEx Logo.

Figure 8.7: The FedEx logo and surprise

Experienced designers will agree that this is probably one the most brilliant logos ever created. If you consciously scan the white space in the logo you will soon discover **the white arrow** created by the letter “E” and “X”. The entire purpose of this company is to move things from one place to another and this is wonderfully demonstrated in that simple white arrow.

If you haven't seen it until now, you can be sure that your subconscious has registered it. However, now that we've moved the logo into your conscious mind, you won't be able to forget it. From now on, whenever you'll see a FedEx truck, you'll look for that arrow and tell the person next to you about it. Who would have thought using white space can cause viral marketing.

Golden Ratio and Web Design

The same principle works with designing a website. This page from the Apple website is perfectly designed to fit the grid of thirds.

Figure 8.8: Apple's iPhone 6 homepage

The name of the product is placed precisely in the center of the first vertical line while one of the phones is on the second one. The name is more important therefore the first thing when you scan from left to right. It seems as though the large version of the iPhone 6 is emphasized by its positioning and the white background indicates clean simplicity.

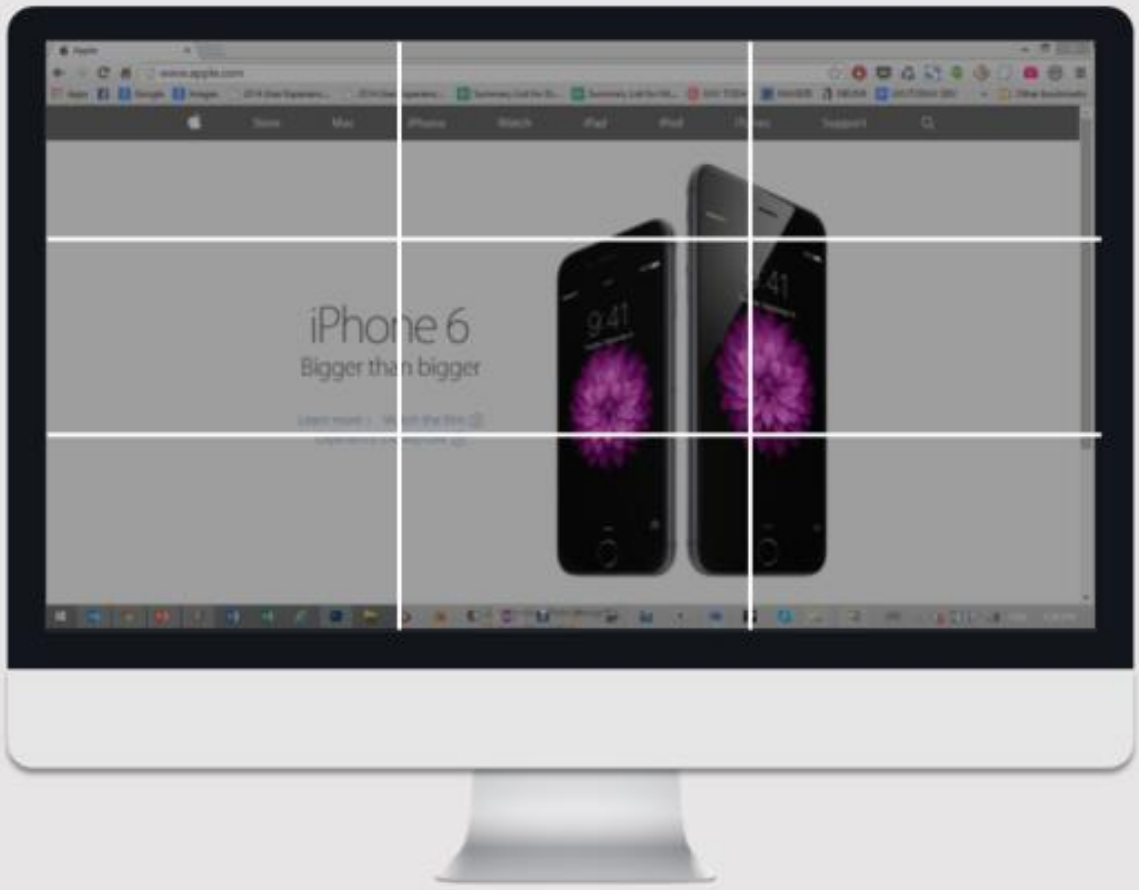

Figure 8.9: Main elements on the page are placed on third lines

Never Split

The first thing that has to be remembered when considering ratios is never ever to split your screen horizontally into two equal halves. If you do, you basically send a message for the right eye to look at the right side of the screen, and for the left eye to look at the left side of the

screen. The result is that the user will end up looking back and forth from one half to the other. The brain will not be able to smoothly make a choice between the two, and they will end up in a competition against each other.

Figure 8.10: Layout split horizontally into two makes your eyes fight

Listening to da Vinci and working with thirds makes things fall into place. What you want to do as a designer is create a page which leads the user's eyes to the target in a natural flow, and this effect is the one we get whenever we use a non-equal horizontal division of the content.

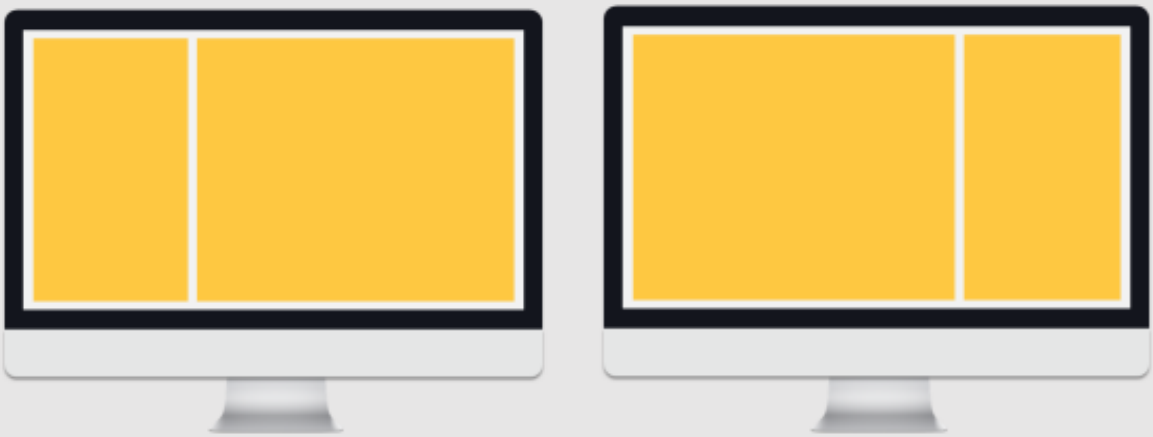

Figure 8.11: Using non-equal frames to achieve hierarchy, flow and movement

Placing the first element to the right as the narrow one doesn't make it less important. The content that will be placed in each one of the areas and the final design, coloring and so on will all define which of the two gets more attention. But starting with one and two thirds division creates the flow and movement the golden ratio is able to create, making it easy for the brains to go with the flow instead of having to decide (like it had to do in the equal split).

Back to the Content Placement Guideline

Remember our guideline from chapter 3? I promised to get back and change it. Now you know why. We can't just split the layout into four. This leads directly to two equal areas next to each other.

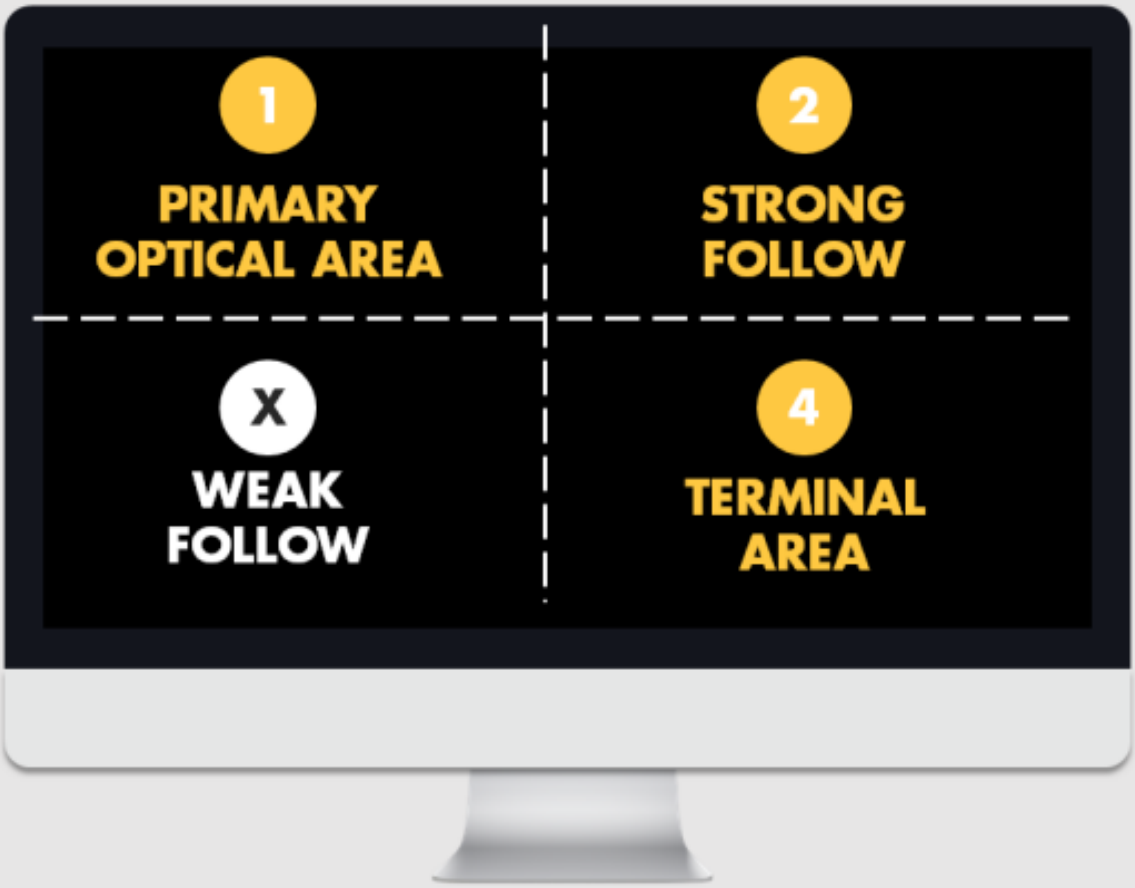

Figure 8.12 – Content placement guideline

For this reason, the guideline is very general and we have to find a better way to implement it. Going back to the YouTube screenshot shows us that YouTube didn't follow the quarters.

Figure 8.13 – YouTube's video page

If you'll look again, you'll find out that the content on the page is split into two non-equal areas. Can you guess what the ratio between them is?

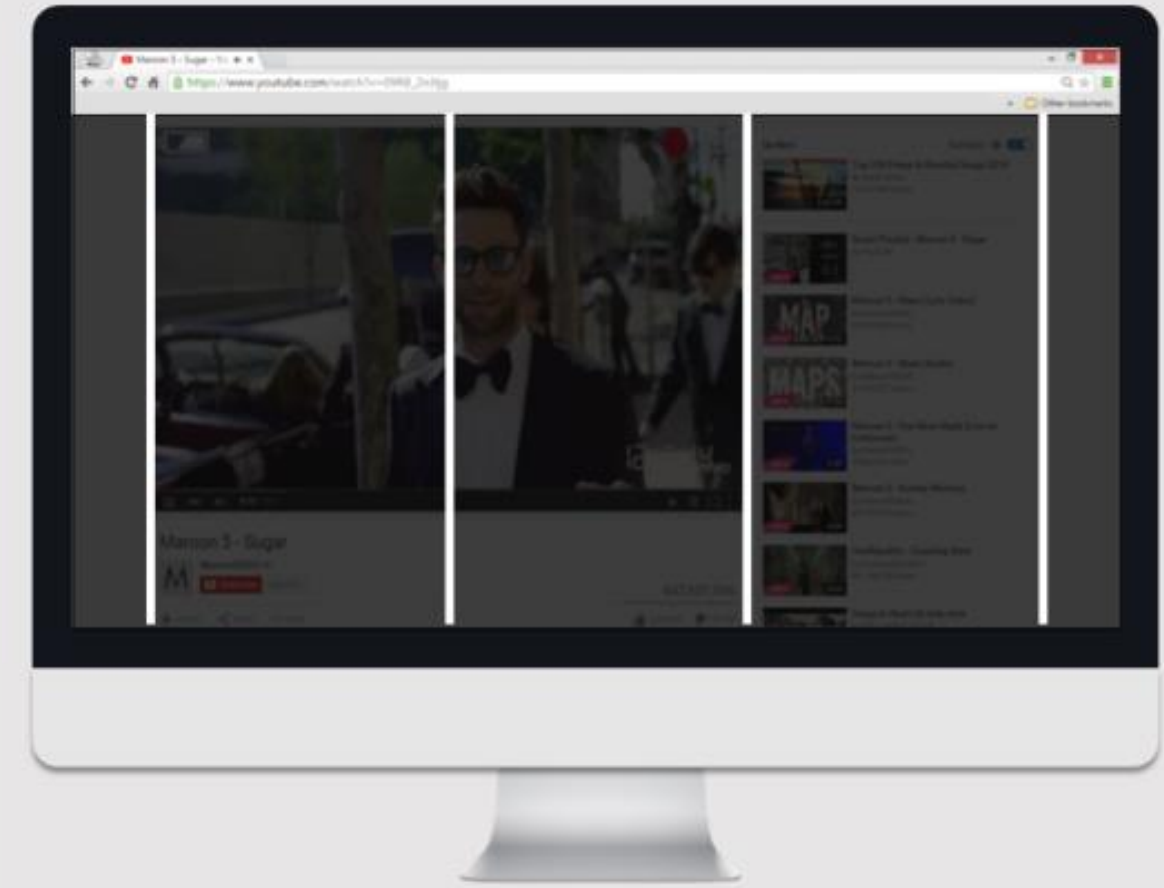

Figure 8.14 – YouTube's golden ratio revealed

Returning to YouTube's, remember we talked about how the third quarter doesn't include any content that attracts attention ("Weak follow")? Now we can use the right name for it and call it **White space**.

Secrets Revealed in This Chapter

Designer Secret #15
Golden Ratio and Dividing Layout Elements into Thirds Make Screens Rock

Designer Secret #16
White Space is an Active Element and Should Be Used Intentionally

Designer Secret #17
A Split Screen will Kill Your Users

Designer Secret #18
Non-Equal Element Width Creates Flow

Chapter 9

CORRECT USE OF SCREEN DIMENSIONS

In this chapter you'll get to know:

- How to use the width and height of a layout correctly
- How to fit the layout for engaging reading
- How to fit the layout to provide a sense of space

Chapter 9

Correct use of screen dimensions

Correct Use of a Horizontal Screen

No matter which screen you will be designing it is most certainly not square (unless you are designing for the Apple watch…). Assuming that we deal with the horizontal screen the TV, desktop or laptop, or deal with a tablet held horizontally, we certainly know that W>H (the screen's width is longer than its height). This fact has some important implications over the way you choose to design a layout. In the design process we have to take into consideration the purpose of the screen and what people intend to do with it, and make correct use of the horizontal and vertical axis in respect to this intention.

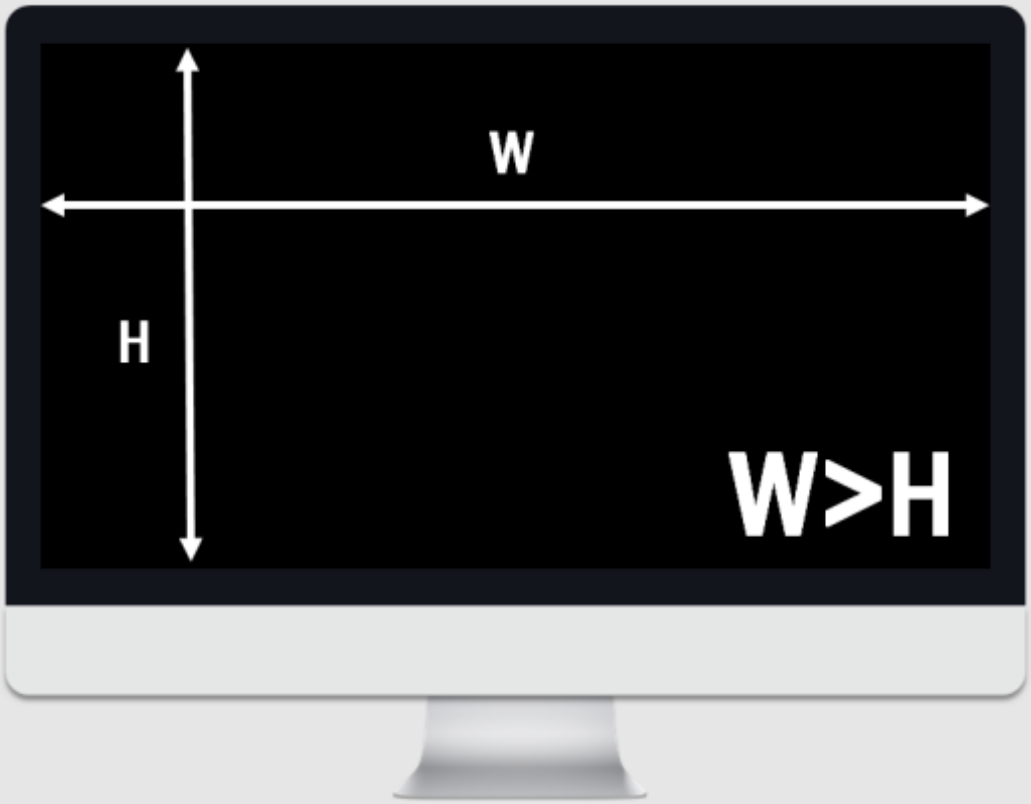

Figure 9.1: Width and height on horizontal screens

Designing for Reading

A common mistake made by people who wish to include text on their page, is to use the whole width of the screen for it. The user will have to begin on the far left and work his way all the way to the end of the screen. With the understanding we gained earlier, that a user of the internet has no desire to read much at all, this layout of text is counter-productive and will make him lose patience quickly.

Check out the following screenshot taken from Wikipedia. Putting the small text across most of the screen makes it hard on the eyes and doesn’t suit our users, who are constantly suffering from a lack of patience.

Figure 9.2: Wikipedia requires a long horizontal reading

Effective vs. Engaging Reading

Effective user reading is achieved when lines of text are designed to include 100 characters. Effective reading is what we want to achieve when people read a book. While their full attention is on the bookkeeping this line width will help them read fastest.

However, when designing for web and mobile interfaces, effective reading is not desirable. With the web, people don't have the intentions and attention span they have when they read a book. When dealing with digital design, we want to help people find what they are looking for, read much less text and make them feel comfortable to stay longer.

What we need is **Engaging reading**, rather than effective reading. Engaging reading is achieved when lines hold as few as 45-75 characters. Making lines shorter makes it easier for people to stay longer, read and interact with the product.

If communicating by text is what you want to do, then it is of essence that you follow these guidelines. You will notice that blogs, for example usually have a rather narrow column of text placed in the center of the page. Print newspapers are all structured in a way that sentences are as short as possible, resulting in narrow columns filling the pages of the paper.

Figure 9.3: Layout split into three columns of engaging reading

Reading vs. Breathing

If you are not using text and your desired outcome is to make the user comfortable you want to avoid a structure of narrow columns as it creates a feeling of limited space. Human beings have a horizontal way of looking at things and in order to create a sense of space, a horizontal layout will do the trick.

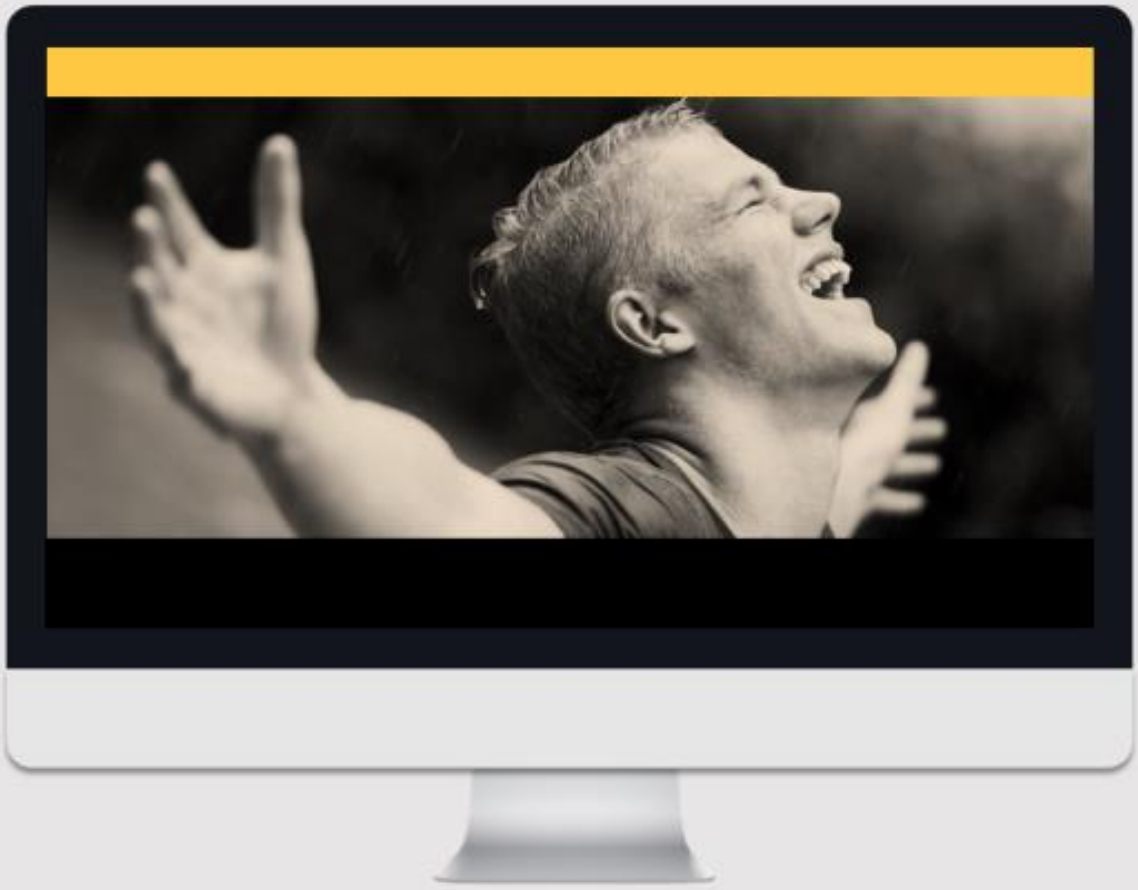

Figure 9.4: Breathing with a horizontal element

As opposed to the use of narrow vertical columns for readability, planning your layout to include a horizontal element that goes all the way from one side to the other will create an effect of continuation, limitlessness or perhaps even a sense of freedom.

Secrets Revealed in This Chapter

Designer Secret #19
Full Width Areas Make Reading Impossible

Designer Secret #20
Wide Structure Helps Users Breathe

Chapter 10

SETTING GRIDS

In this chapter you'll get to know:

- What makes layouts consistent
- How to use grids to assist element placement
- How to use static and dynamic grid frames correctly

Chapter 10
Setting Grids

The Bad Results of Inconsistency

When using online services and information systems we sometimes find that different pages have a completely different structure from one another. This creates confusion and a loss of confidence, and even when it doesn't, it makes the product look and feel much less professional. Usually, users won't be able to pinpoint what was wrong with the interface. We hardly pay attention to such differences, but when they exist, we get what psychology calls "**cognitive overload**". We get tired quickly, we lose patience, we invest much more energy looking at the screen and finding elements we are looking for, or we just don't like the product.

Differences between layouts and pages are caused by a few reasons. Those reasons could include different people working on different pages or simply by a lack of awareness for the importance of consistency. It is not only important within the components of a layout, but also between different layouts in the same product.

The Secret Recipe behind Consistent Layouts

The secret ingredient that creates consistency is **a grid system**. A grid system is a very simple thing. Instead of placing elements randomly on our layout, we use a set of horizontal and vertical guides that show us the way. Once we have a grid system placed on the layout, we place elements based on it and make sure they are aligned and consistent.

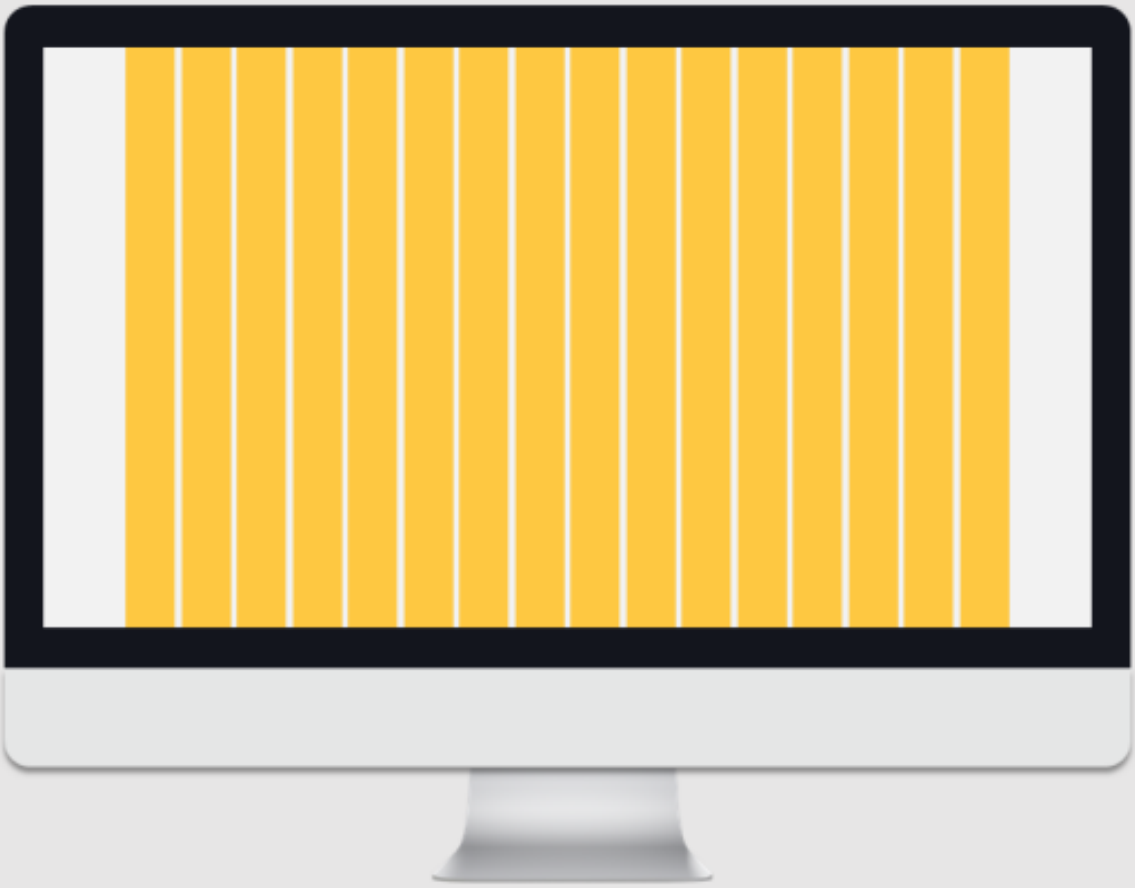

Figure 10.1: The basic grid

The basic grid system used by most of the designers is based on vertical rectangles. In classic web design, they are placed in the center of the screen, based on the lowest common screen resolution we would

like to support.

The most common grid systems are built of 12 or 16 elements. The number of elements affects the density of the content. Each one of them has its pros and cons. For example, we use a grid system of 12 elements when we want to follow the rule of the thirds.

However, usually, when designing layouts for professional tools with a vertical menu area aligned to the left, it doesn't make sense for that menu to take a third of the layout width, so we use a grid of 16. A quarter of it is used for the menu, and the rest is used for the content. In that case three quarters are again 12 elements, so we get the chance to enjoy the rule of the thirds once again.

Figure 10.2: A 12 grid system vs. a 16 grid system

The Air Control System of Your Grids

Another element within the grid system is the space between the horizontal rectangles. This space is called a **Gutter**. The width of the gutter defines the density between elements on the layout. Making the

gutter wider will create **more space to breath** and will make the layout feel more simple and easy to use. Notice that changing such a minor factor can have an outstanding effect on the overall look of your layout.

Static and Dynamic Elements

When you start designing a layout, it is recommended to start with some kind of a grid. The grid helps placing elements consistently from the start.

By the time the first layout is ready, we find out that it is built out of two types of elements. There are static elements that are going to stay in place throughout the different pages of the product. Elements like a top menu bar, a sidebar toolbox, a header and a footer are usually consistent, and we wouldn't want them to wander around whenever we move from one page to another. But other elements are specific to each one of the page. Different pages have different functionalities, thus leading to a different layout.

However, when we create different pages with different layouts, things get messy… This is exactly where the grids come in handy.

Looking For a Consistent Grid Model

The process goes like this:

1. We start with the functionality of one page and start designing its layout until we have a layout that fits our needs.

2. Then, we start designing a second page with a completely different functionality. We leave the consistent static elements in place, and

try to find a visual solution for the new functionality.

3. Even though we have two different layouts that fit the different functions, we are not done yet. We now have to face the hardest step and find a consistent model that will fit both layouts. Even though both of them have a finished design, we can't release them until both of them are placed on the same grid system.

4. Pay attention to the fact that the designs don't have to be the same. They only have to be placed on a consistent set of grids. Take a look at the following layout:

Figure 10.3: Static and dynamic frames on a grid

Assuming this is our first layout, we can see a ‘sixteen grid system’ with two static elements for the main menu on the top and the secondary menu as a side bar. The rest of the layout includes four different content areas. The following layouts shown below were created on the same set of grids.

Notice how all of them include the static elements, but the rest of the content changes completely. If you’ll pay attention, you’ll be able to see how all of the elements in all layouts are placed over the same set of grids.

Figure 10.4: Different layouts over a consistent grid system

We could easily change the sizes and places of the elements and move them out of the grid and nobody would even notice, but the final outcome would make users feel less comfortable and our product would lose points.

Finding a grid that works for all of our layouts consistently is not an easy process. For me this is sometimes the hardest step of the design. But it's a crucial step, and when accomplished, makes your layouts rock.

Grids hold another secret phenomenon. Once we find a consistent grid for 3-4 main layouts, in most cases the grid will automatically fit following layouts. I'm not sure how this really happens, but it does.

Secrets Revealed in This Chapter

Designer Secret #21
A Grid System Will Make You Jump From Amateur to Pro

Designer Secret #22
Wide Structure Helps Users Breath

Designer Secret #23
A Grid that Fits the Main Screens will Fit the Rest

Chapter 11

INTUITIVE SCROLLING

In this chapter you'll get to know:

- The correct use of horizontal and vertical scrolling
- How to make scrolling intuitive
- What is the fold line and how it affects your design

Chapter 11

Intuitive Scrolling

Up until this chapter we have spoken about a static screen, assuming that all of the visual elements have their place within the visual area seen without scrolling. It was easier to get the basics of layout design leaving scrolling out of to the picture. But now it’s time to add scrolling to the story.

Scrolling happens when the layout we designed and implemented is longer or wider than the space we have on screen, causing the appearance of horizontal or vertical scrollbar elements and allowing the user to move across the layout.

Scrolling behaves differently based on the browser the user is using, the screen size, proportions and resolution. Different people will see different scrolling situations on different screens.

For many years, scrolling was viewed as **almost illegal** in the design world. This was based on the fact that for most people. Things which didn’t appear on the screen when the page was loaded, didn’t exist. A

big portion of people just didn't scroll. However, times have changed and scrolling is an important factor in layout design.

Vertical vs. Horizontal Scrolling

When dealing with web design for desktop and laptop devices, vertical scrolling is easy to use, natural and intuitive, when done correctly (we'll dive into that in a second). Users have a scrolling assistant on their mouse device, and they tend to expect more content below from what they see as the pages are loaded.

The story with horizontal scrolling is different. On web design, we usually tend to avoid horizontal scrolling, since it is hardly seen and not usable. For example – our mouse doesn't support horizontal scrolling using its scroller.

However, when we move from desktop and laptop devices to tablets and smartphones, things tend to change. On devices operated mainly by touch, horizontal scrolling becomes even easier than vertical scrolling, depending on the device and the way we hold it. This is where physiology and anatomy become relevant factors in layout design.

On a tablet horizontal scrolling is more common and on a computer screen the scrolling is ideally done vertically.

Get to Know the Fold Line

When dealing with scrolling, the main term to talk about is **"Fold line"**. The so called 'Fold Line' is an expression taken from print. It is, quite simply, the line where a newspaper is folded. While folding the paper

might be a simple practicality it has an impact on the design. When you purchase a newspaper you will do this according to what is visible to you from the top of the page to the fold line. Everything below that point is not visible to you and is not initially attracting your attention.

Figure 11.1: The classic fold line

When translating that to the screen, the fold line is the point where the screen ends and you begin to scroll. Although vertical scrolling is “allowed” for the web, statistics show us that elements which appear below the fold line (‘below the fold”) get much less attention.

Therefore, you will want to place important elements above this line such as the call to action, which will lead the user to do what you want him to. This is why defining the location of the fold line is an important factor in the process of designing a layout.

In order to take the fold line into consideration, we draw it on our layout model and specifically refer to it and define what we expect to see in relation to that line.

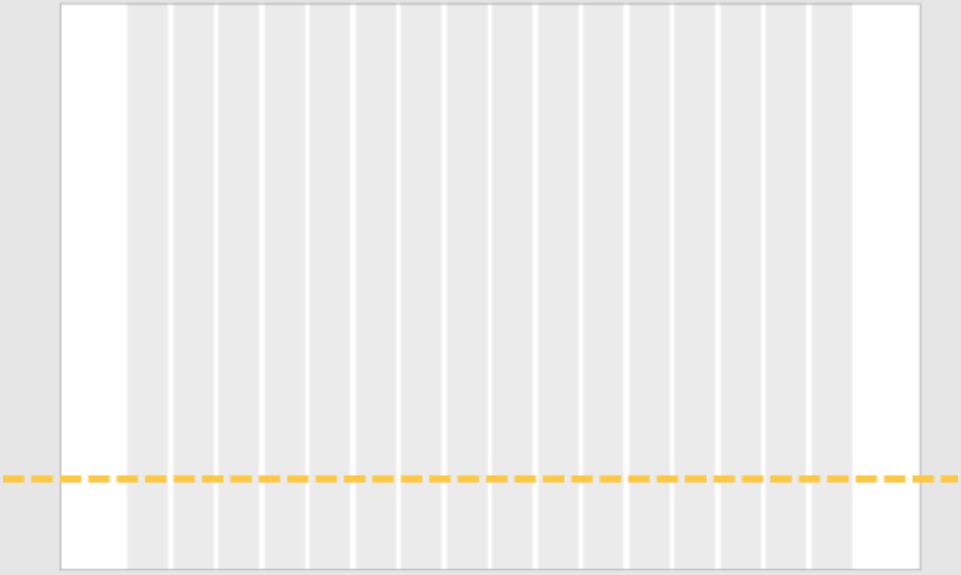

Figure 11.2: A layout with a fold line indication

Statistics of Time Spent Relative to Fold Line

According to statistics, most of the time spent by the user is on the top part of a page. To be exact, research shows that we spend 80% of the time scanning the page, looking, reading and interacting with visual area seen on the screen before scrolling. Generally speaking, we spend as little as 20% of the time on a page dealing with the entire content below the fold line. Amazingly, this is true even if we are dealing with a very long page.

Furthermore, it is important to understand that when the page is loaded and we interact with the area shown above the fold, the content is standing still. However, when we start scrolling, we sometimes tend to deal with the content below the fold while it is on the move, without stopping the scrolling process, leaving us with a much lower chance to pay attention to its details.

Helping Scrolling Become Intuitive

As with all aspects of User Experience Design, here too we have a chance to control our user's actions and make scrolling a natural action.

Usually, when we design a layout, we tend to place elements in a way that fits the room we have. This is a natural behavior. After placing the fold line in our layout design, we tend to place the elements and make sure they are shown in their full size above the fold line. However, by doing so, we make scrolling non-intuitive. By making elements entirely visible above the fold, we send the message that all of the content of the page is shown and nothing is missing.

Figure 11.3: A layout planned with a false fold line consideration

If we would like to make scrolling intuitive, we have to ditch our intuition and instead, slice elements in a way that parts of them are above and

the rest appear below the fold line.

Planning the fold line in a way that cut through the elements will allow the visual sensors to send the right signals to the brain and will automatically cause the user to want to scroll and see the rest of the content.

Figure 11.4: A layout planned with visual hints to make scrolling intuitive

That idea is relevant both in horizontal and vertical scrolling. If horizontal scrolling is what you have in mind, usually when dealing with touch interfaces, make sure the content hiding below the visible area pops out a bit.

Figure 11.5: Supporting horizontal scrolling with right fold line consideration

Using both Horizontal and Vertical Scrolling

Using both scrolling options together on the same page can't be done with cases in which the main controlling is done using a mouse. This is simply because the mouse doesn't support that. The mouse allows scrolling vertically, but scrolling horizontally has to be done by placing the cursor over the scrolling control and moving it physically – which is a non-usable and hard-to-do task from which we try to avoid.

The only situation where using both scrolling models together is when we use touch gestures as our main control form. This is relevant on tablets and smartphone layouts. Making sure objects are cut by both vertical and horizontal fold lines will allow the user to get that. However, this is usually a pretty complicated model to support.

Lately, we start seeing more and more websites and applications that allow horizontal scrolling over the web, when the leading controller is the mouse, rather than our fingers. If you want to go that way, pay attention that you are not going to a standard model. In order to make the model usable with a mouse, you can make sure that when using the mouse scroller object, the product will be set to make things move horizontally. This is a technical requirement that can be supported in most web platforms and makes things much more interesting.

Secrets Revealed in This Chapter

Designer Secret #24
Fold Line is the Designer's Best Friend

Designer Secret #25
Intuitive Scrolling is Created by Visual Signals

Designer Secret #26
Horizontal Scrolling and the Mice aren't Friends

Designer Secret #27
Horizontal Scrolling and Touch Interfaces are Great Friends

Chapter 12

TIME TO SAY GOODBYE

Chapter 12

Time to Say Goodbye

Your Magical Power

If you have made it this far, well done! You are now aware of the magical power designers have and may use this power yourself, either for designing interfaces on your own or evaluating designs of others.

It seems like a fiction, but we can control the way people use our layouts. Having you on our side now makes the design community stronger, and we hope you'll make a good use of the tools you acquired and use them only for good causes.

In the world of magic, once you've been exposed to the secrets, you have to promise never to share them with anybody else. In our case this is the other way around. If you find this set of tools valuable, share them with your colleagues and friends. The more design awareness the world has, the better interfaces we will see.

Join our efforts and help us **change the world, pixel by pixel**.

Yours truly,
Tal Florentin

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