# Using Your UI To Lead The User (To Do What You Want)

## Al Wilkinson

## Why Are We Here?

UX is a big term that means a ton of different things to people. This session is not about best practices for user testing or integrating UX design processes in your development processes, nor does it have a technical or implementation focus with CSS or Photoshop secrets. In this session, we are going to look at how users approach and interact with software by looking at some ways our brains respond to some of the systems we interact with. Understanding these kinds of ideas can help anyone improve their software.

The reality is that most people that work in software are not usability experts, and most companies do not have one on staff. There are 10’s of thousands of usability experts and almost 1 billion websites and probably more mobile apps, so the math suggests that the rest of us should have some basic understanding of how to design software.

## A Few Terms So We Speak The Same English

There are a few terms that can mean many things so I want to take a minute to get us on the same page for this conversation. You will also find that I use some of these terms interchangeably.

## Building Blocks

First some building blocks…

The User’s Mental Model:

People are very active problem solvers who always have a general model in mind that drives their behavior in a very systematic way. And we are constantly refining and revising this model as we encounter new experiences.

So when a user approaches a new system – a chair, pen, headphones, the latest bird game – they already have an idea of what it is going to be and how it is going to work. This model may or may not be accurate.

Previous experiences may or may not be very applicable:

* The user has never used a website that does what your does, but they have used desktop apps
* The user has read magazines and newspapers for decades, and just picked up a tablet for the first time
* A child has been reading on a tablet as toddler and now tries to use a book

It’s all about understanding where users are coming from and what is driving their behavior. What they have seen and experienced before drives their expectations when they use your software.

## Passing The Rock

This is a short video, about 1 minute and a half. There is a question to start the video, some action to observe, and finally the answer and some follow up.

## The Mental Model Meets The Bear

This video and variations were originally created for studying change blindness and inattenional blidness, but have been used for many different reasons. In the UX realm, this is often used to make the point that you must observe whole systems to be able to identify the problems that need to be solved. Initial user testing and research approaches are a big area in UX, which we are not going to focus on today.

Today we are going to focus on a different aspect of the video – if you correctly frame your software, or any system, most of the time your users will do exactly what you lead them to do.

In all its variations over 40 years, on average around 50% of people do not see the bear or other changes.

Many have created similar videos dating back to the 1970s, but Daniel Simons and Christopher Chabris at Harvard University have some of the best known studies during the 1990’s. Their research revealed two surprising observations:

* We miss a lot of what goes on around us
* We have no idea that we miss so much

Various research has combined to identify some possible causes including:

* Capacity
* Expectation
* Conspicuity
* Working Memory
* Mental Workload
* We will see these show up in different ways as we continue through this session

## Who Is Going To Use My Software?

So let’s start with the who.

Identify your target audience 🡪 who is going to use your software?

What is their level of technical ability? Technically inclined or your 90-something year old great grandmother that has fought for 20 or 30 years?

What devices are they using or not using? Phones, tablets, laptops, desktops, multiple monitors, TVs?

Is your software something they are choosing to use or something they are forced to use? Required by their day job or something they choose to use on their own time?

Will they be doing other things while using your software? Are they going to be focused, multitasking, or really distracted

🡪 Knowing these kinds of details help setup the capacity and expectation of your users

## Drawing The User’s Attention

These are some ideas from Steve Krug’s Don’t Make Me Think…

There are a wide variety of factors that affect how a user flows or progresses through parts of any system, and software is a prime example of that.

## Elements of Good Design

Because users look at so many different systems all day long, there are a few general elements we can identify to help our designs along

Characteristics of Usable Interfaces

* Easy to learn
* Easy to remember
* Consistent
* Efficient
* Self-evident
* Prevents errors
* Provides appropriate feedback
* Satisfying and fun to see

## Navigation

Tells user where they are 🡪 like breadcrumbs

Shows the user where they can go and how to get there 🡪 top and side navigation, other quick and featured links on the sides

Shows user how they can go back 🡪 breadcrumbs or sometimes a history

Provides users with alternatives 🡪 any link on a page

Is obvious to the user 🡪 if it looks like a link, navigates like a link, it might be a link

Matches the user’s mental model 🡪 is it where the user expects? Does it take them where they expect to go?

The true challenge behind navigation is that in the last decade we have introduced so many new types of devices that our expectations have been changing. However, I think you will find that each device and each type of app has some standards that are settling in.

## Challenging The Norm

Conventions are good, but sometimes they require more brain power than they should. Consider stove top design. Which would you prefer to have in your kitchen? Sometimes we have to challenge current conventions to design better ones.

\*\*\* For the next slide, I am going to give you a few seconds, pay attention to what jumps out at you first.

## Visual Hierarchy

Where did your eyes go first?

When did they read the text?

Size directs our eyes through a visual hierarchy, which is usually more powerful than the actual contents

## Conventions and Areas

This is a screen shot of a Chinese news site - http://www. xinhuanet.com/ on 5/5/2014

Obviously this is not in English. Does anyone speak Chinese?

What are some of the things that jump out at you, that you can identify?

## Conventions and Areas

I used my browser to translate the page to verify. It came out very poorly because the English words take up much more space than the Chinese characters. But it turns out we are all on the right path. Some highlights:

* Some links and info, perhaps a date, and maybe on the right is a language selection or login
* Logo and banner near the top
* Some other links that are maybe for languages or versions of the site, possibly a mobile version
* Top and side navigation
* Some ads or featured previews
* Large headline for the main story with some rotating images
* Two different sections for news or feature article
* Search
* Stock or weather or other sections of news
* Videos

In looking at the collection of Chinese characters may have forced you to think through some standards of different types of software, like:

* desktop apps tend to have a main menu bar
* mobile tends to scroll up and down, not side to side
* every OS has conventions

🡪 Examining some basic conventions of other similar apps may reveal significant details about your average user’s mental model when they open your software

## Page Layout

Sometimes the visual flow comes from our expectation of top to bottom, right to left reading of text. We learned that from books and magazines as kids, and many English based systems still follow that. Similarly, newspaper design from 100 years ago still shows up in many websites – like a banner are the top of the page and boxie groupings of related content. And we carry some newspaper terms like “the fold”

It is important to think about how much a user has to scroll. Consider the amount of content you have on different devices.

## Shapes

Shapes are all around us and have always caught our attention and directed us.

Research indicates people’s eyes tend to move in specific patterns

When we fight the brain’s expectations, software can seem difficult to use, or users may miss whole portions of the app

## Grouping

Gestalt

* There are several principles related to perception in the human visual system
* German cognitive scientists in the 1920s
* German word for "form" or "structure“

## Color Me Happy

Colors have many ways of affecting UX from directing users to setting the tone of the software.

## Color Me Happy

There are good and bad color groupings

Notice the shapes suggest similarities for the 8 different boxes. However, there are some reused colors, which suggests they are the same. But you would typically only have one item per group in a structure like this, I think, or maybe not, or … etc., etc., etc. My brain started thinking too much about this, how about yours?

The Leap Frog site is a much more clear example by choosing very distinct colors and only using them once. Plus they are bright and engaging, and they are consistent from visual perspective.

Brands typically have specific sets of colors they use and re-use to identify themselves without reusing their logo everywhere. Think Google. Those brands also have to make since. Did you notice that Leap Frog is green?

Similarly, we have learned that certain colors and shapes mean certain things. Like a red octagon means stop. So putting up a green circle with the word “STOP” in the middle is not going to see many people stop what they are doing. Our mental model identified the color and the shape and acted, probably before reading the word.

## Color Me Confused

Not all color usage is good – there are some challenges:

Approximately 9% of men and .5% of women are color deficient. Types of color deficiencies:

* Anomalous Trichomats – red or green is shifted making the eye less sensitive to this color; accounts for over half of deficiencies
* Small Field Tritanopia – general weakness for detecting blue due to a smaller proportion of blue receptors
* Dichromats – complete loss of a color spectrum
* Cone Monochromats – can see only one color; rare, about 1/1 million
* Achromatopsia – true color blindness (no cones); fairly rare

🡪 Color deficiencies present some interesting challenges to color and conventions. Consider a stoplight if you are red or green or red AND green deficient. You must rely on the standard order of the lights to guess the intended meaning. So changing the order of a stoplight could cause serious problems for color deficient users. Consider if you have any stoplight-like design elements in your site.

When searching for an object based on color, one color dramatically speeds search time. When more than 5-6 colors are used in the same display, performance is often slower than non-color displays

## Can You Read Me Now? Good.

Talking about color can easily lead into a nice discussion on good use of images. The short version is icons can be helpful or harmful ☺

Related to graphics is fonts. Did you know that our brains do not really process letters like we think about them? We have trained ourselves to think of letters as letters, but our brain still processes them as shapes. Have you every tried reading an email or document that had the vowels or other middle letters jumbled?

Some things that make fonts stand out include the style. There are two basic font styles.

There are also some font treatment conventions to consider.

An interesting article on some different fonts being used can be found at <http://www.typewolf.com/blog/industry-leading-designers-share-their-favorite-typefaces>. I was intrigued by one person that found a font that is supposed to help dyslexic readers.

## Act Now!

Despite talking about everything short of words so far, at some point, your users will actually read the text in your software. So how do we get them to read?  
Use active voice – use command words like Act Now, Save This, Sign Up, Follow Me

Strive for precise meaning – avoid words that are vague or require too much context for understanding

Keep it short and simple – we are creating software, not a novel, save your loquacious verboseness

Remove repetition – especially in lists, and instructions on forms, and around buttons

## Watch Their Eyes Not Their Words

As we think about reading text we can talk some more about how eyes move through a page. A couple of quick items are:

Eyes fix and scan to read text

* Fixations – Periods when the eyes stop or hesitate to focus or gaze upon a visual object
* Saccades – Periods when the eyes rapidly scan within the vertical or horizontal planes of the visual field.

🡪 Has anyone seen the Spritz reader? It gives you the ability to read words in a single location instead of your eyes moving. I just saw this and it is an interesting way to change how a user moves through your content.

Just like words, users fixate on the part of the page they identify as meeting their need. They rarely read everything on a page, especially after they have been there a few times.

## Look! Real Examples

Theory is nice, but some real examples are always helpful. Let’s start with one of my favorites. This is from Billy Hollis’ Pluralsight video on UX. Take a look at this elevator panel and then let’s talk about what you see.

Observations:

No 13th floor, especially in cities with casinos

Alignment of the buttons is a little off

The label for the groud floor

* The paint is worn off the label - people have tried to press it, many times
* We expect bttons to be round in the physical world
* This is a design principle called archetypes

## Look! Real Examples

The next few examples are of real comparisons of some different approaches to parts of sites. These are all courtesy of a couple of Google searches, so you can probably find some that are applicable to your specific software with a few more searches. Please note, this is not a specific endorsement of A/B Testing, just some interesting results.

Green vs Red “Get Started Now!” button – 21% more clicked Red

http://blog.hubspot.com/blog/tabid/6307/bid/20566/The-Button-Color-A-B-Test-Red-Beats-Green.aspx

Human photo over icon “Contact” link – up to 50% increase clicks

http://www.smashingmagazine.com/2010/06/24/the-ultimate-guide-to-a-b-testing/

## Look! Real Examples

Adding “It’s free!” increased conversion rate by 28%

http://visualwebsiteoptimizer.com/split-testing-blog/ab-test-case-study-how-two-magical-words-increased-conversion-rate-by-28/

Single Page over Multi-Step Checkout increased sales by 21.8%

http://www.getelastic.com/single-vs-two-page-checkout/

## In Reality, It Depends…

I try to keep two things in mind, because the reality is that it all depends on your specific case

Make it pretty but it must be usable. We all like visually appealing things, and you may understand a little more about why now. But it is still important to make it usable, because a beautiful design that is not usable still results in no one wanting to use your software.

Which rules and conventions you follow always depends on many factors. Another clip from Don’t Make Me Think is this Farmers vs. cowmen graphic. You may have to build software for all four types of people. You may only be targeting one group, or you may also be targeting many other groups. For better or worse, there is no one blanket design for all software. If there was, we might all be out of jobs ☺

## Thanks!

Thank you for joining me today! Hopefully you have some new ideas about what to consider while designing or modifying your software. There are several other great sessions at the conference this weekend related to multiple aspects of UX, so I hope you enjoy!

Feel free to contact me:

[awilkinson@balanceinnovations.com](mailto:awilkinson@balanceinnovations.com)

[zealouscoder@gmail.com](mailto:zealouscoder@gmail.com)

@zealouscoder

Presentation: <https://github.com/zealouscoder/presentations>