UX Workshop, June 2016

VISION™

Help practitioners understand how to incorporate concepts and methods from different disciplines into UX

Topics

- User Research Methodologies

- Human Mind and Usability

- Analytics

- Process Review

User Research Methods – 3 Dimensions

1. Qualitative vs. Quantitative

2. Self-Reported vs. Behavioral

3. Context of website or product use

False Consensus Effect

Be care

How Much Do Americans Drink?
There's a wide range.

TOP DECILE		73.85 DRINKS/WEEK
NINTH DECILE		15.28 DRINKS
EIGHTH DECILE		6.25 DRINKS
SEVENTH DECILE		2.17 DRINKS
SIXTH DECILE		0.63 DRINKS
FIFTH DECILE		0.14 DRINKS
FOURTH DECILE		0.02 DRINKS
THIRD DECILE		0 DRINKS
SECOND DECILE		0 DRINKS
BOTTOM DECILE		0 DRINKS

Average number of drinks consumed per week

SOURCE: WASHINGTONPOST/WONKBLOG, "PAYING THE TAB" BY PHILIP J. COOK
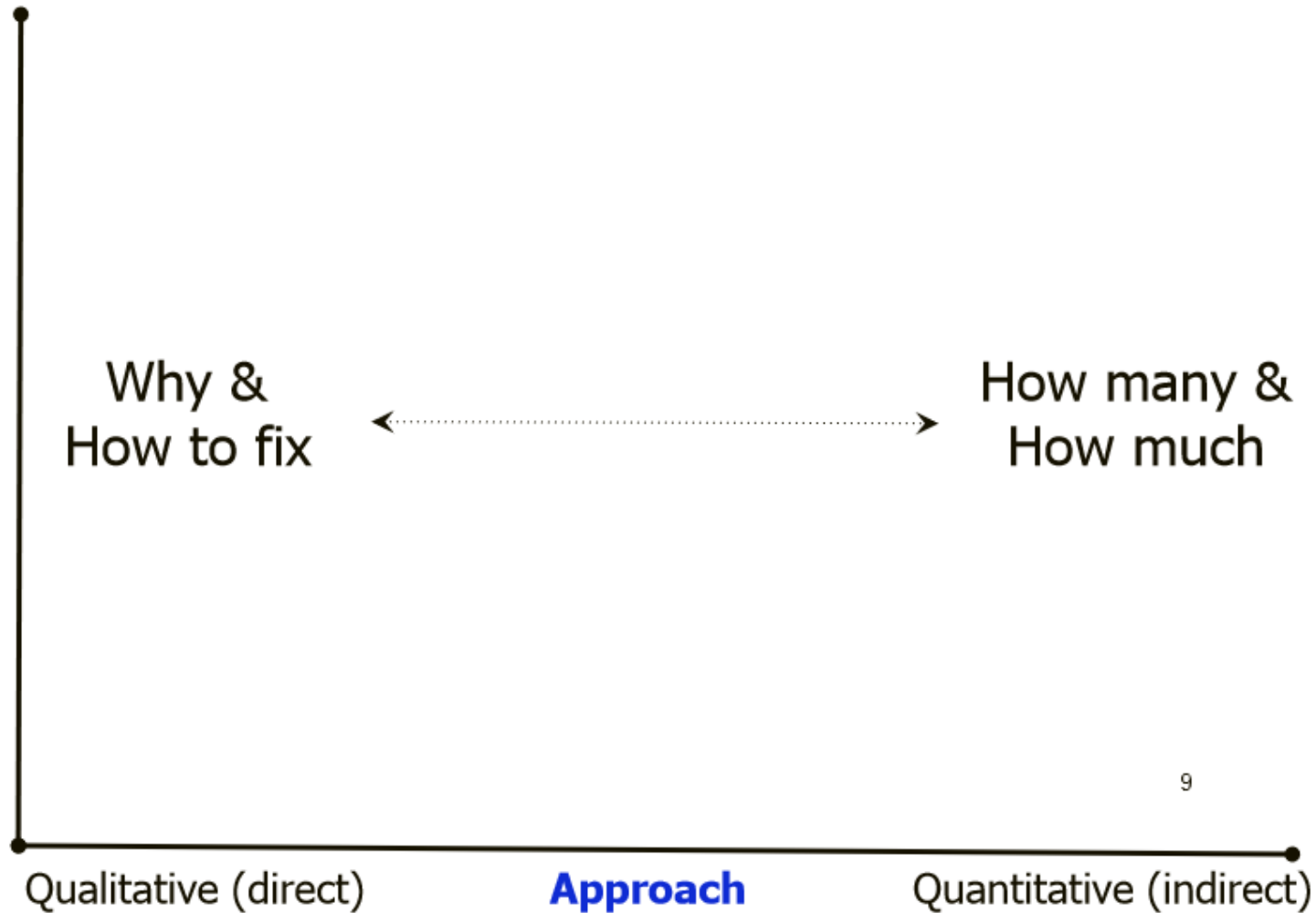
Qualitative vs. Quantitative

Quantitative Research

- Data typically gathered **indirectly**
- Large amounts of data can be coded and analyzed mathematically

Qualitative Research

- Data typically gathered **directly**
- Researcher can ask follow up questions
- Analysis of data is not mathematical

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Qualitative vs. Quantitative

Why &
How to fix

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How many &
How much

9

Qualitative (direct)   **Approach**   Quantitative (indirect)

Self Reported vs. Behavioral Dimension

Self Reported Data

- Understand, measure or inform change of people's stated beliefs or attitudes
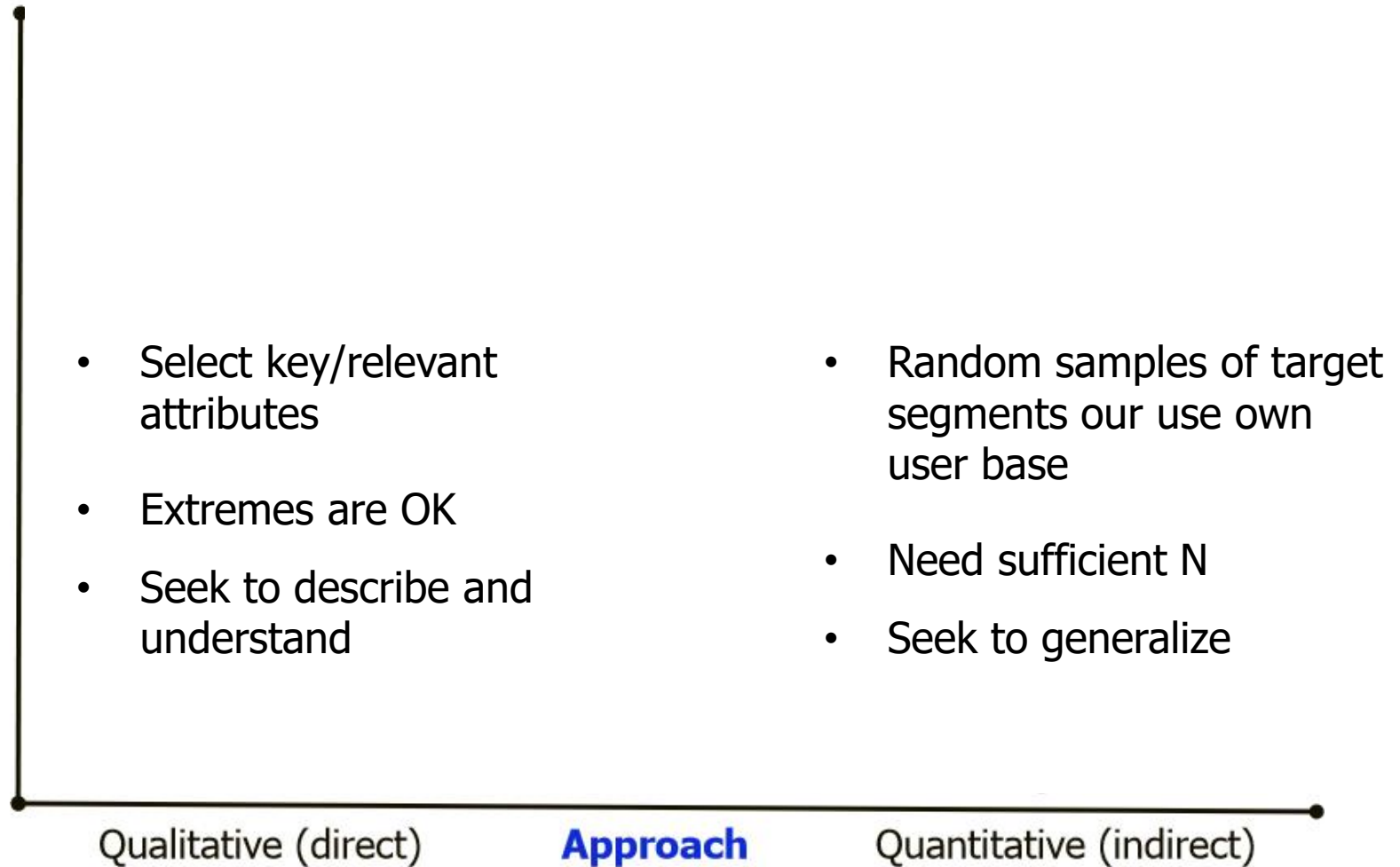- Often relied on heavily in marketing departments

Behavioral Data

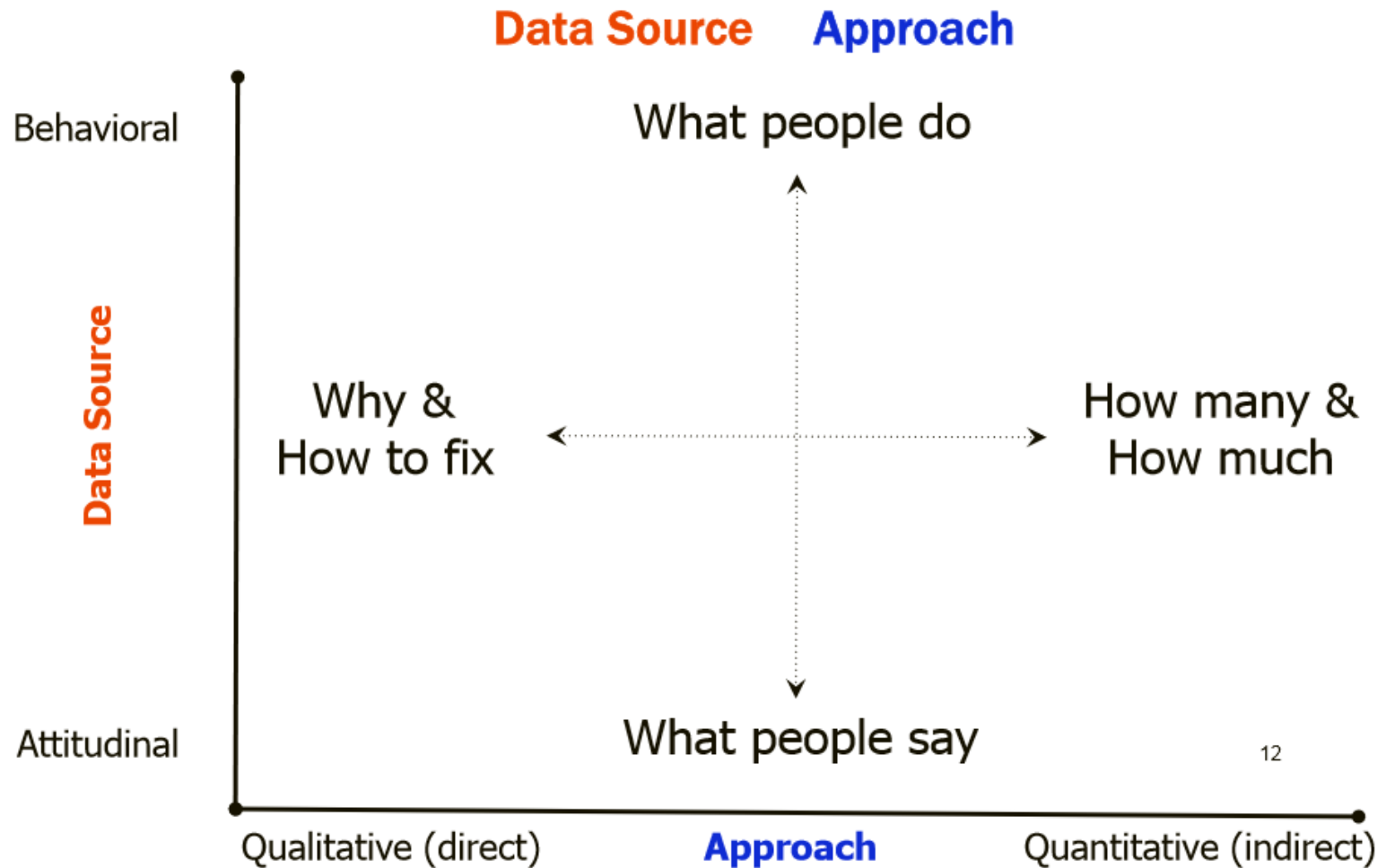- Understand what people do with minimal interference from the method itself
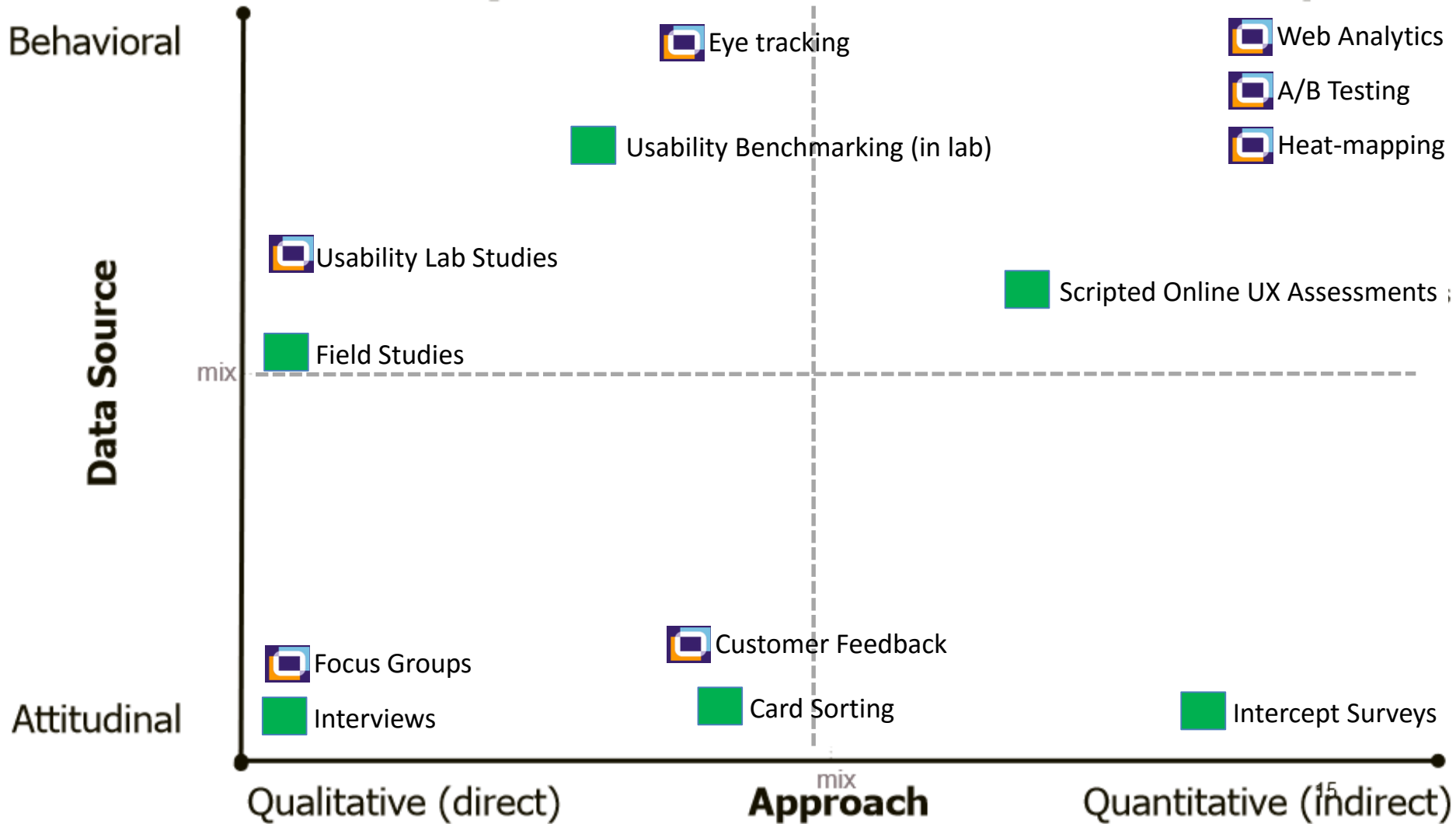
Self Reported vs. Behavioral Dimension

Data Source   **Approach**

What people do

Behavioral

Data Source

What people say

Attitudinal

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Self Reported vs. Behavioral Dimension

- Select key/relevant attributes

- Extremes are OK

- Seek to describe and understand

- Random samples of target segments our use own user base

- Need sufficient N

- Seek to generalize

Qualitative (direct) **Approach** Quantitative (indirect)

Landscape of User Research Methodologies

Data Source   **Approach**

Behavioral

What people do

Data Source

Why &
How to fix

How many &
How much

Attitudinal

What people say

Qualitative (direct)   **Approach**   Quantitative (indirect)

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Landscape of User Research Methodologies

Behavioral

Eye tracking

Web Analytics

A/B Testing

Heat-mapping

Usability Benchmarking (in lab)

Data Source

Usability Lab Studies

Scripted Online UX Assessments

mix

Field Studies

Customer Feedback

Focus Groups

Card Sorting

Intercept Surveys

Attitudinal

Interviews

Qualitative (direct)   mix
                           Approach   Quantitative (indirect)

Web Analytics

- **Pros**
  - Know traffic source and conversions
  - Know your visitor behavior
  - Set up KPIs
  - Optimize Marketing Campaigns

- **Cons**
  - It's time consuming
  - Dependencies on IT to get things done
  - Expectations of accuracy

A/B Testing

- **Pros**
  - Ease of implementation
  - Ease of test design
  - Ease of analysis

- **Cons**
  - Can take a long time to see results (depending on website traffic)
  - Make sure you are not "Cloaking"
  - As any quantitative study, leads to "conversion-first" approach
  - Ethical questions – Dark Patterns

Heat-Mapping

- **Pros**
  - Easy to visualize
  - Gives insights to what items work and which don't
  - Provides ideas for new layouts/order of menu headings or other items

- **Cons**
  - Will not show data for sub-nav menus
  - Does not show number of clicks – only area clicked

Eye Tracking

- **Pros**
  - Fairly quick to run and setup
  - Clients love it!
  - If used with other methods, it can provide useful insights
  - Useful during wireframing/prototyping

- **Cons**
  - Does not tell you why, just what
  - Might not work on users with glasses
  - Does not measure peripheral vision
  - Almost impossible to get users act naturally

Customer Feedback Surveys

- **Pros**
  - Dynamic and Flexible
  - Depth of understanding
  - Taps consumer creativity
  - Formative creative ideas can be evaluated

- **Cons**
  - Responses are not measured, neither are they statistically representative
  - Dependent on interviewer, orientation & interpretation
  - Cannot be repeated as easily
  - Requires human intervention to interpret responses given

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Focus Groups

- **Pros**
  - Different people
  - More honest responses and reactions
  - Special training can yield more insights
  - New ideas

- **Cons**
  - Exaggerated opinions
  - Influence & Groupthink
  - Not so natural environment
  - Influence from focus group leader

Human mind & Usability

Why human mind & usability?

- Understand psychology concepts that affect design
  - Anticipate what people will do and why they do it

Cognitive Psychology

- Emerged in the late 1950s

- Examines mental processes, such as how people:
  - Think
  - Perceive
  - Remember
  - Learn
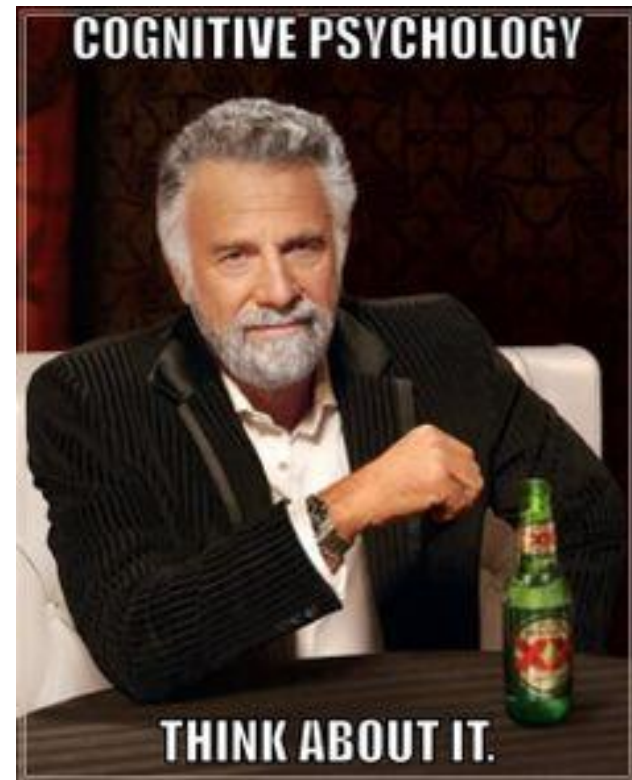
Human Factors

- Examines human capabilities and limitations

- Emerged during WWII
  - People matched with jobs and machines
  - New weapons were ineffective because of its complexity

  - Focuses on designing systems that work well with the human body and cognitive ability

Human Computer Interaction (HCI)

- Emerged in 1980s
- Studies interaction of humans and computers
- Multi-disciplinary practice

Computer Science

Cognitive Science

Sociology

Human Factors
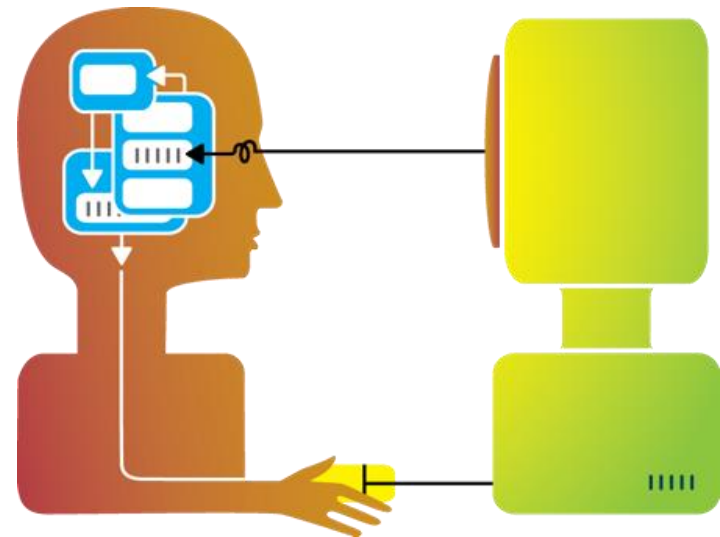
Why is it important to keep it simple?

- We have limited cognitive resources
  - Bottleneck theory
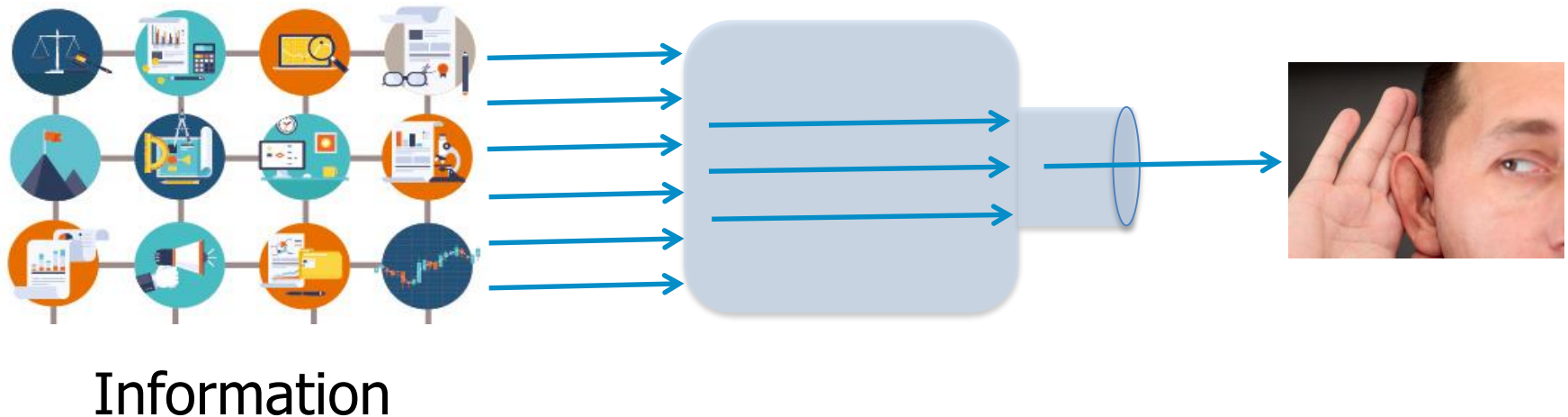
Information

Why is it important to keep it simple?

- We have limited cognitive resources
    - Attenuation theory

Information

Attenuator

Meaning

Other Cognitive Processes
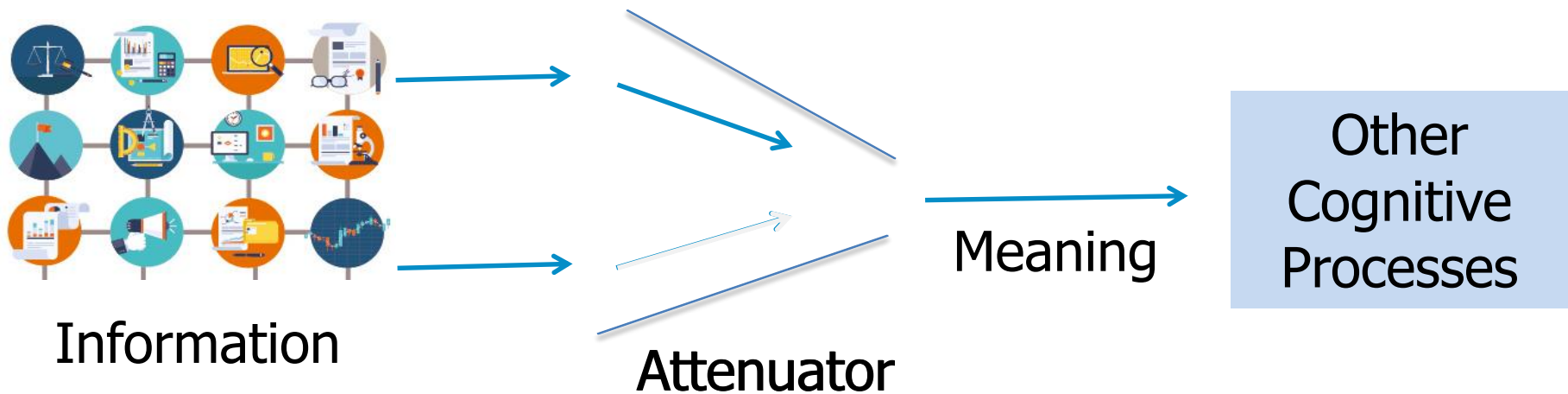
Principle of Least Effort

- Show a little bit of information

- Instead of just describing things, show an example

- Pay attention to the affordance of objects on the screen

- Only provide the features that users really need – don't rely on your opinion

- Provide Defaults

Perception & Attention

Our perception & attention is biased.

- We perceive things based on:
  - Goals
  - Context
  - Prior Experience
  - Culture

Perception & Attention: Goals

- Users are tasked focused on the web

Perception & Attention: Goals

- Goal-related factors that affect attention

Complexity

| Submitting a Job Application Form ✓ | Reading your horoscope |

Similarity

| Listening to two conversations simultaneously ✓ | Eating and watching TV |

Perception & Attention: Goals

- Question: Are we good at multi-tasking?

  No, multi-taskers are more likely to:
  - Become distracted
  - Make errors
  - Have "inattentional blindness"

Inattentional Blindness
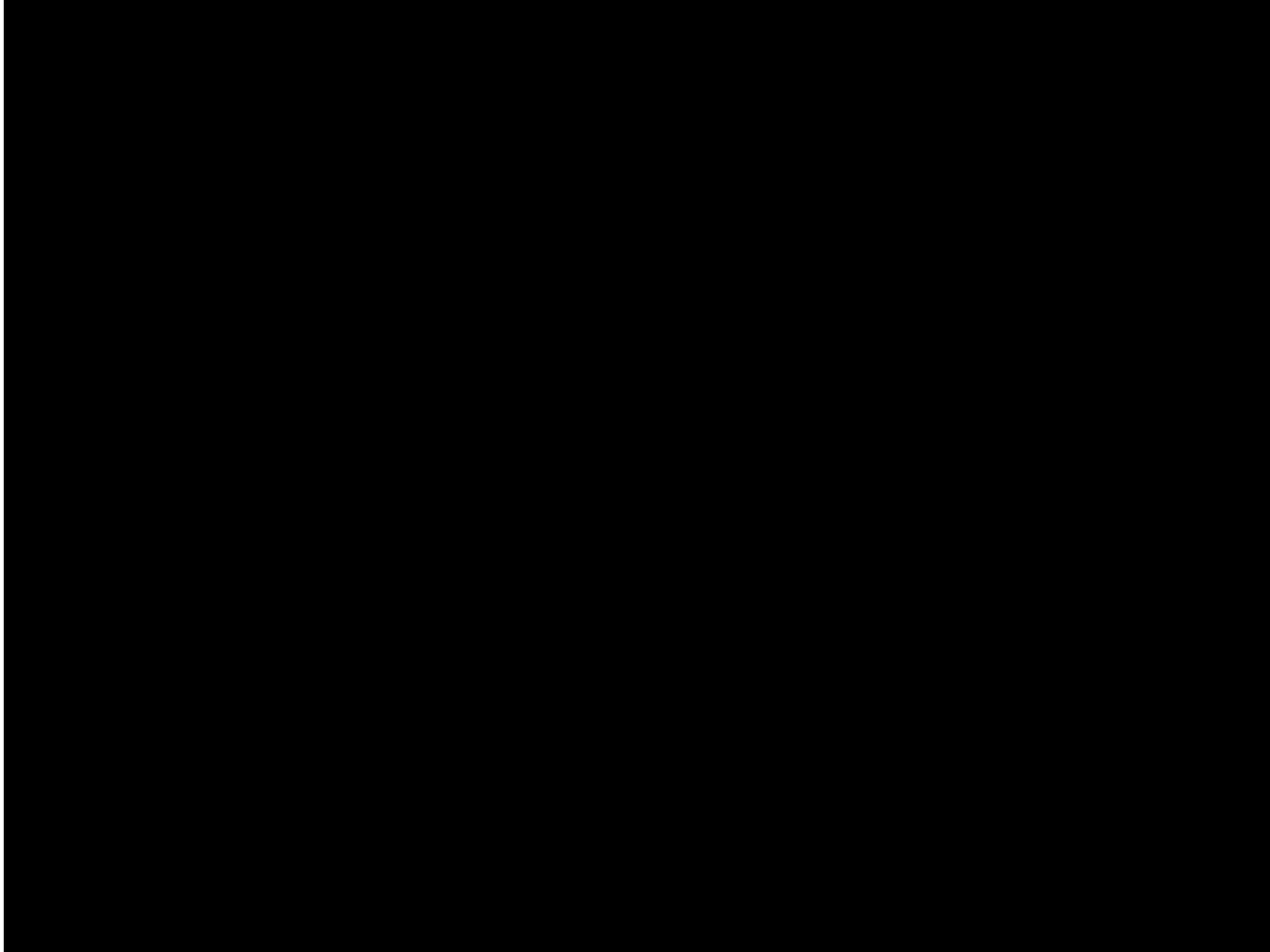
Framing Effect Bias
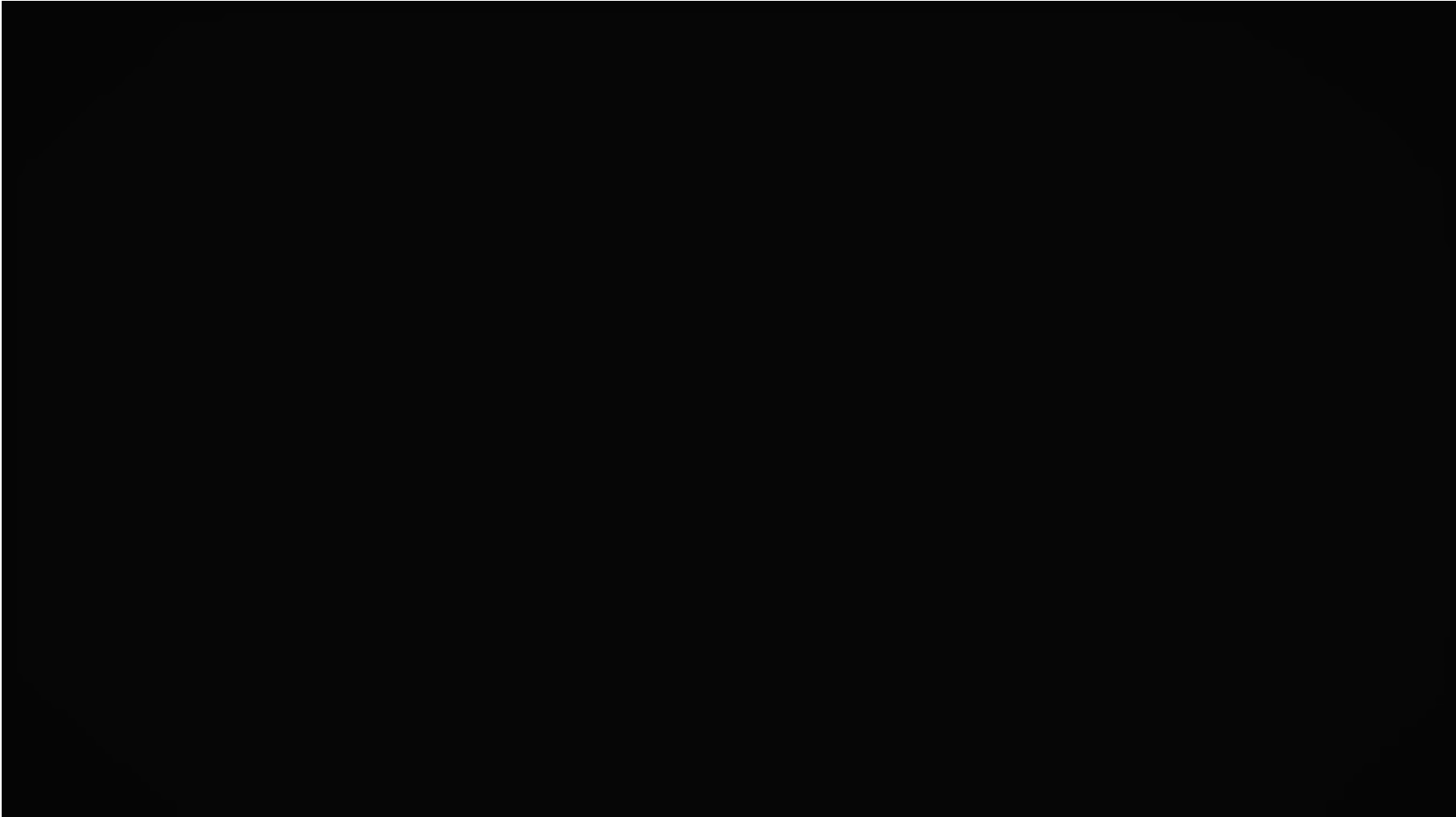
Perception & Attention: Context

- Context impacts perception

Perception & Attention: Prior Experience

Previous experiences affect perception

- Task Familiarity

- Practiced tasks become automatic

- Once tasks become "automatic"
    - Resources are "freed up" for other tasks
    - Mistakes are likely

Perception & Attention: Prior Experience

- Banner blindness

Perception & Attention: Culture

- Western interfaces are normally simpler
- Asian interfaces tend to be busier

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Visual Perception

We are wired to see patterns, we try to make sense of the world.

Gestalt principles of visual perception help us process more efficiently

- Proximity
- Similarity
- Closure
- Figure/Ground

Visual Perception: Proximity
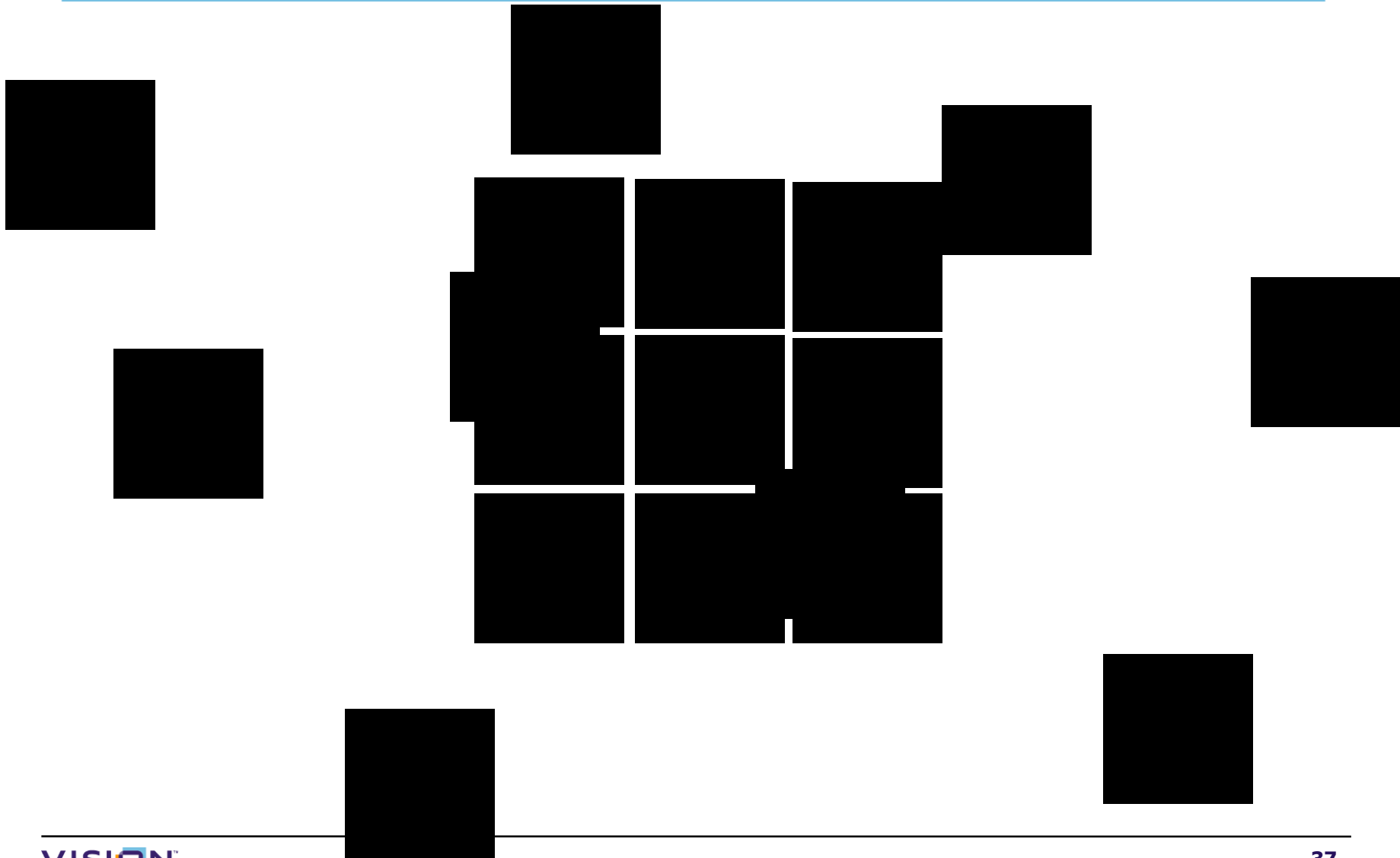
Visual Perception: Proximity

Visual Perception: Similarity

- Items that are similar are perceived to be more related than items that are dissimilar
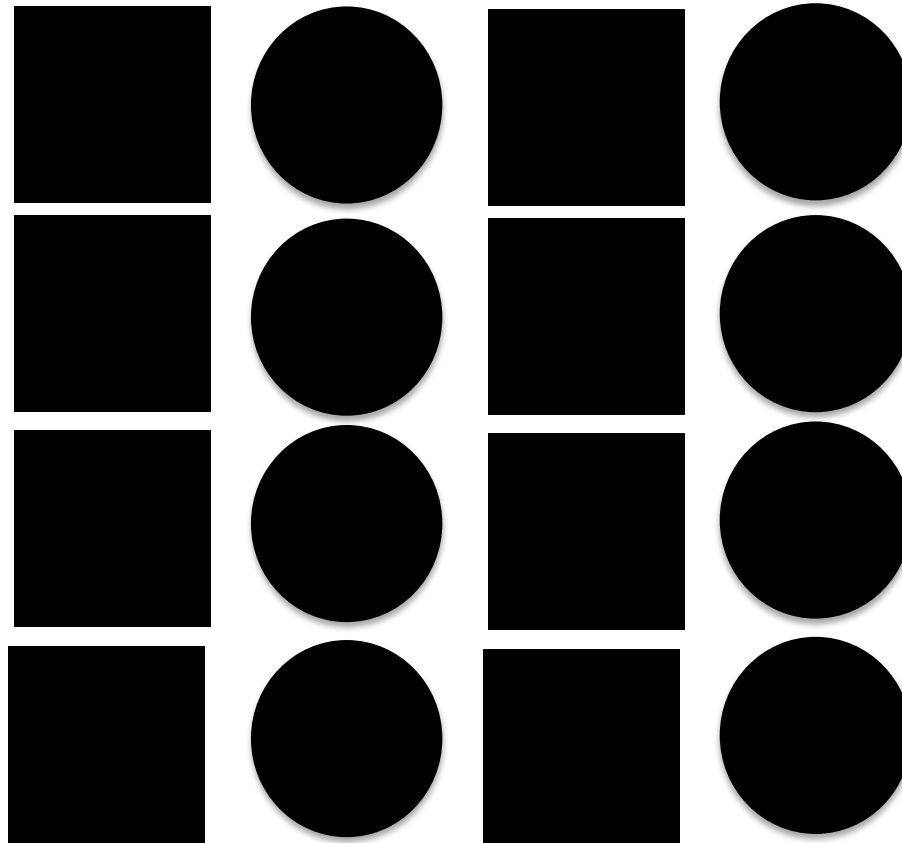
Visual Perception: Similarity

- How many groups do you see?
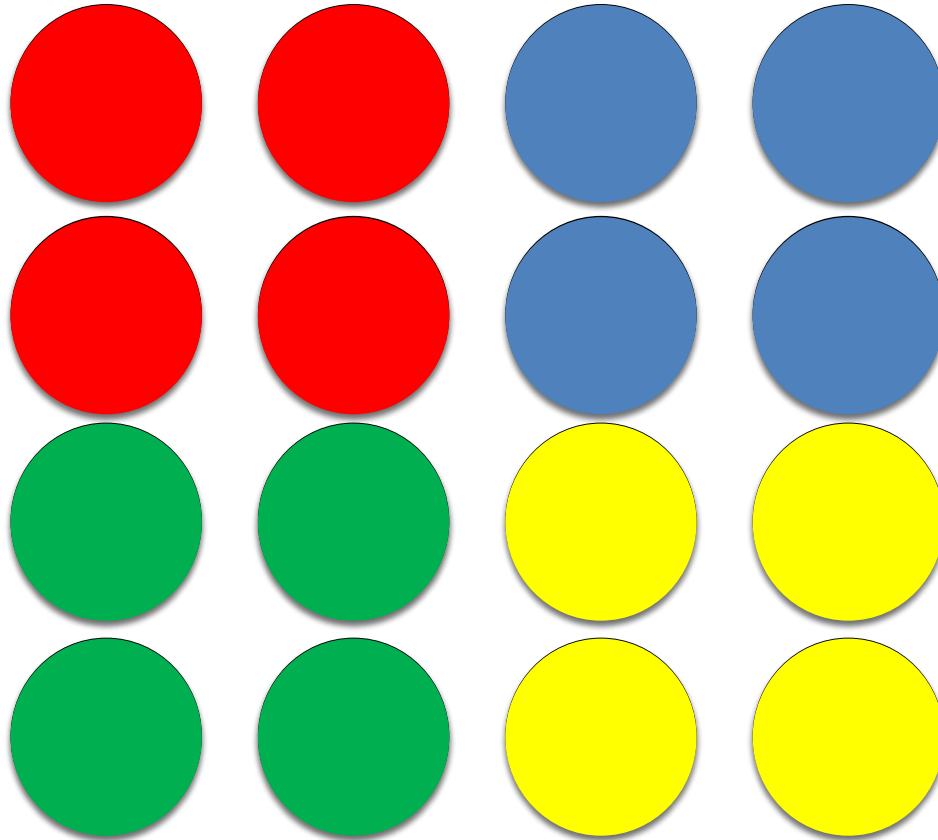
Visual Perception: Similarity

- Links must be distinguished from other elements around them but need to be similar to one another

Technical nerdery

Some who read the footer will notice I switched to WordPress. This wasn't so much prompted by the MovableType exploit of my previous server, as much as it was due to the difficulty and frustrations I had trying to upgrade MT after the compromise. Plus, I started using WordPress a little over a year ago for another personal site at dougandcam.com. In fact, if you visit that site, you'll see a lot of design and content similarities to this one. This design was a chance to elaborate on what I had done at D&C D&C was the proving ground for WordPress, and where I learned how its template system and syntax works. Ultimately, I switched to WordPress because I was familiar with it, and had lost all my familiarity with MovableType. With no offense to my friends at Six Apart, development on WordPress seems to be happening at a faster pace. And it just fits more inline with what I want to do for now.

Visual Perception: Closure

- We seek completeness

Visual Perception: Closure

- Common examples of closure

Visual Perception: Closure

- A powerful example or closure
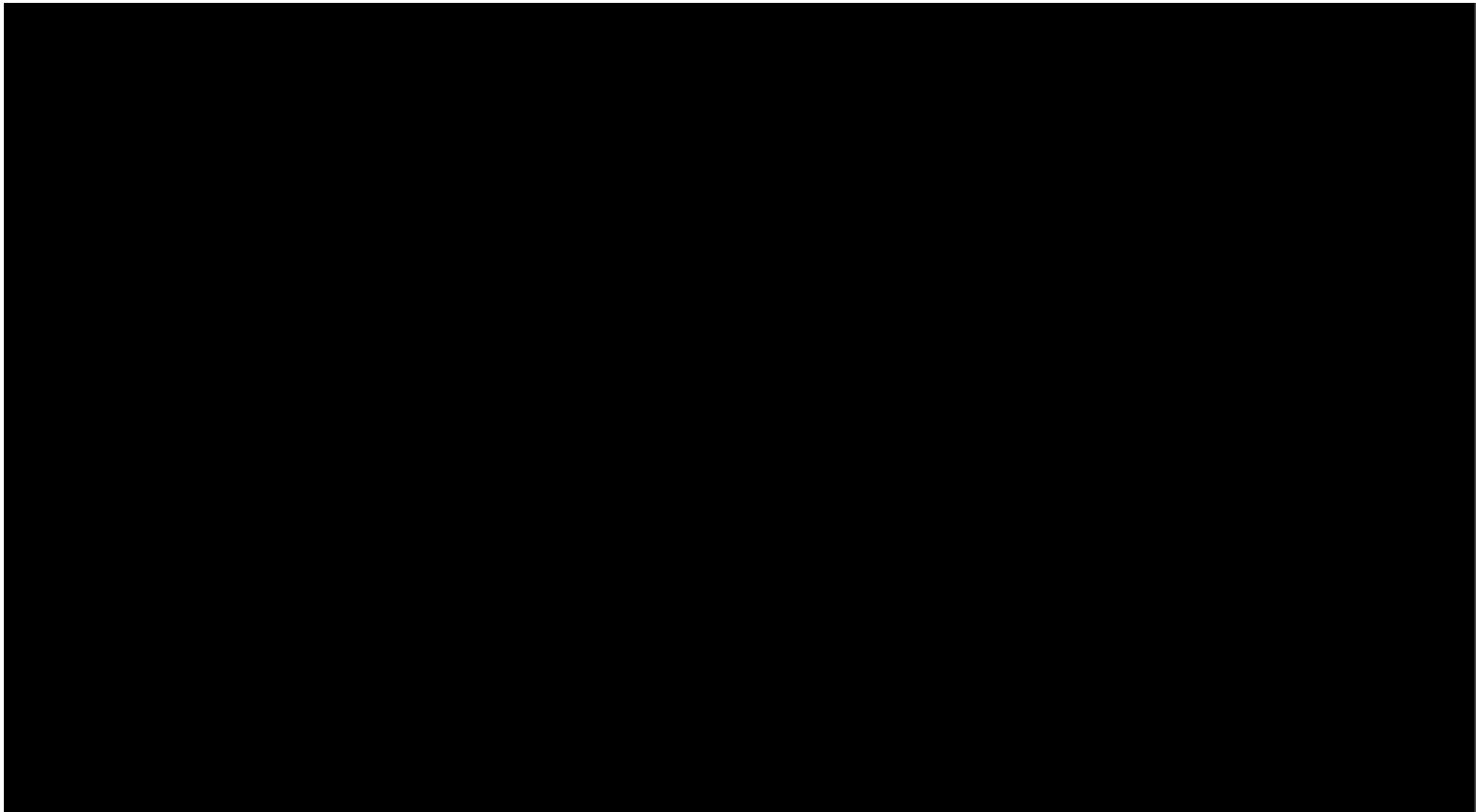
Visual Perception: Figure/Ground

- Distinguishes content from structure
- Perceives affordances
- Understand depth in a 2 dimensional medium
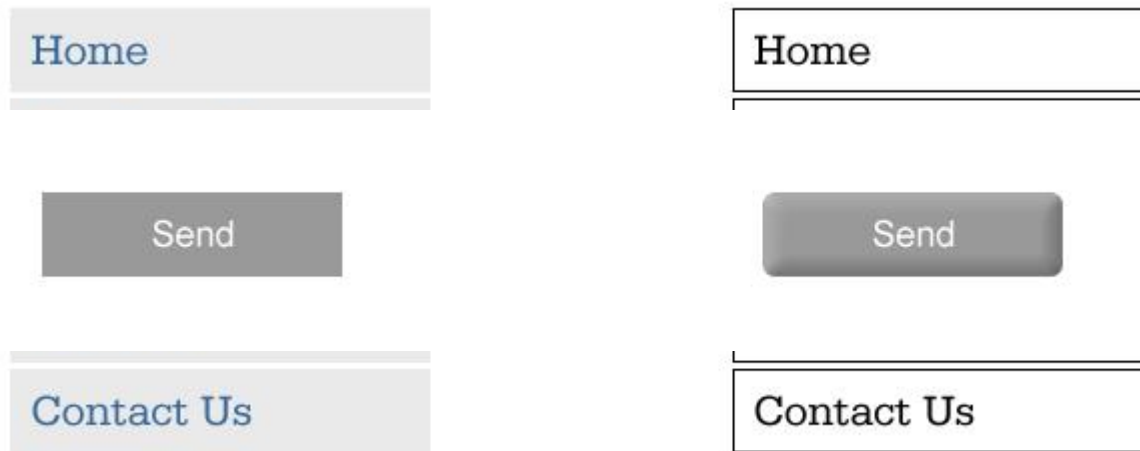
Memory

- Atkinson – Shiffrin memory model
  - Also known as the multi-store model
  - Proposed in 1968
  - Proposes 3 components for memory
    - Sensory: Registers information, enters memory
    - Short-term store: Receives and holds input from both, the sensory register and long-term store
    - Long-term store: Information has been rehearsed in the short-term store – it's kept indefinitely

Memory: Atkinson-Shiffrin model

Information

Sensory Store — Decay: 0.2 – 4s

Attention

Rehearsal

Short-term Store — Decay: 18 – 30s — Capacity: 7 +- 2 chunks

Transfer

Retrieval

Long-term Store — Some information may be lost over time
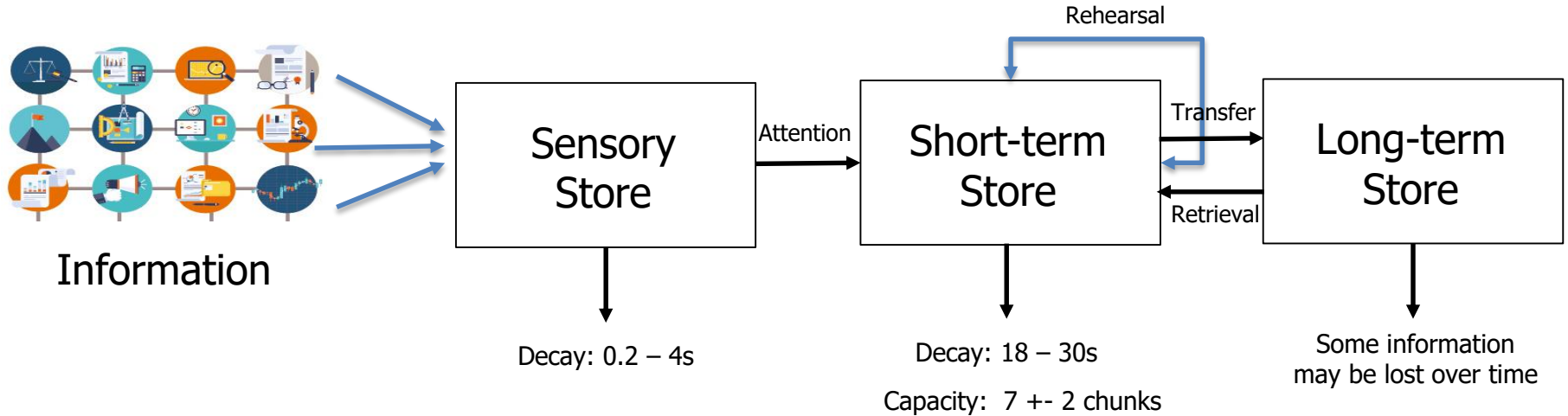
Test your sensory memory

How many characters do you remember?

Z   B   P   A

R   Q   L   T

C   L   N   W

Test your sensory memory

How many characters do you remember?

P   Y   F   G

V   J   S   A

D   H   B   U

Test your short term memory

euR CiA Ussr iRs FBi

Memory & UX

Memory is unreliable, increase UX by:

- Avoid rotating banners or carousels
- Show visited links
- Repeat search queries on search result pages
- Present all related information on the same screen
- Use tables for easy comparison
- Use relevant icons
- Use typical images or graphics
- Navigation structure is based on relationship of concepts

Analytics

Information resulting from computational analysis of data or statistics

- Register a GA account

- Get the GA code

- Place it in your website

- Make sure it works

Why use analytics and user research?

Triangulation: Using multiple sources of information to enhance UX

User Testing

Identify UX problems & solutions

Analytics Data

Surveys
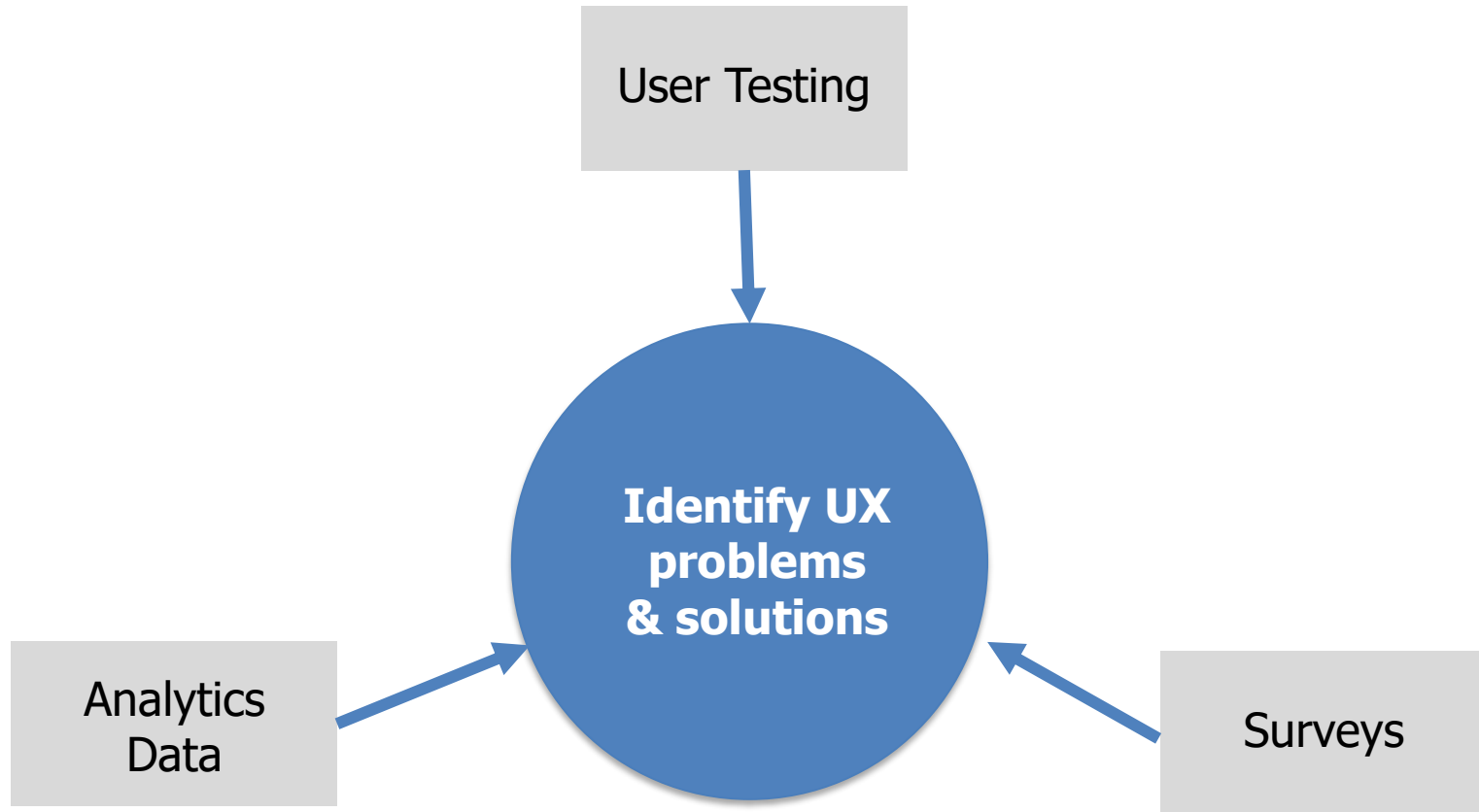
Web analytics basics

Goals are actions that you want your users to take

Examples:
- Click on the Hands on Guide Content Strategy link
- Click on the Free Consultation button
- Click on the Social Media Book Quotes page
- Submit the Content Strategy Book download form
- Submit the Free Consultation form

vision™

Web analytics basics

Goals can be macro and micro-conversions

- Macro-conversions
  Transaction completion
  - Submit the Content Strategy Book download form
  - Submit the Free Consultation form

- Micro-conversions
  1. Process Milestones
  2. Secondary Actions

Web analytics basics

What can be measured as a goal?

- Reaching a specific page
- On-page action (event)
- Time spent

Web analytics basics

Estimating goal values

$50.00 form submission

$10.00 click on hands on content strategy book link

$2.00 Newsletter subscription

Web analytics basics

- Server log file analysis (Piwik log analyzer)
  - All transactions recorded by the web server

- Page tagging (Google Analytics, Piwik Analytics, etc)
  - User JavaScript code and an API to notify a server when actions are taken

Web analytics basics

Log Files	Page Tagging
Data is logged by web server	Can track visitor behavior as long as there's internet connection even if the page is cached
Data is stored in standard format	Reports "events", no server requests
No external server requests	Assigns cookies to visitors
No client application is involved other than the request to the server itself	JavaScript can get access to other information not available on server requests like screen sizes
	Reporting does not require access to application server

Web analytics basis

- ## What is a cookie?
  It's a text file which is used to store information about a visitor (preferences, location, passwords, etc)

- ## 3rd party vs 1st party cookies

Web analytics basics

- Page tagging vendors use 1st party cookies

- **There are three types of cookies**
  1. Persistent/User cookie
     - Associated with the device
     - Standard Expiration: 2 years
  2. Session cookie
     - Associated with the visit
     - Default is typically 30 minutes after last action
  3. Campaign cookie
     - Associated with the campaign source
     - Default is typically 6 months

Metrics

- Most tools use slightly different terms to mean the same thing

- Familiarize yourself with the exact terminology of the metrics in the system you are using

- The following metrics are based on Google Analytics

Metrics

- Metrics hierarchy

Metrics

Metrics

- Visit/Session
- Pageviews
- Unique Pageviews
- Average time on page
- Entrances
- Exit Rate
- Bounce Rate

Metrics

UX Interpretation: Unique Pageviews

Value	Good Interpretation	Bad Interpretation
High	Page is converting well, no further action is required	If page has a high bounce or exit rate then consider reviewing wording of links linking to this page
Low		Absence of links and/or referrals

Metrics

UX Interpretation: Entrances

Value	Good Interpretation	Bad Interpretation
High	Good content, page is most likely correctly indexed and may have referrals from other websites	
Low		Check for poor content Create referrals from other sites

Metrics

UX Interpretation: Bounce Rate

Value	Good Interpretation	Bad Interpretation
High	Informational Page: High rates are okay	Routing Page: Check content, make sure that all links work and the page is simple to understand
Low	This page is performing well, it is sending people to other pages	

Metrics

What is a normal Bounce Rate?

- 40%-60% Content websites

Metrics

Issue Identification: Look for pages with high traffic and high bounce rates

	Page	Page Title	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
			3,551,631 % of Total: 95.08% (3,735,456)	1,822,654 % of Total: 92.37% (1,973,219)	00:00:38 Avg for View: 00:00:39 (-2.09%)	949,123 % of Total: 86.67% (1,095,100)	26.66% Avg for View: 36.24% (-26.43%)	26.69% Avg for View: 29.32% (-8.95%)	$0.00 % of Total: 0.00% ($0.00)
1.	/corrections/jils/jailregister.asp	Jail Inmate Lookup Service - City of Kent, Washington	47,781 (1.35%)	47,772 (2.62%)	<00:00:01	47,772 (5.03%)	99.13%	99.98%	$0.00 (0.00%)
2.	/default.aspx	Home - City of Kent, Washington	192,422 (5.42%)	101,646 (5.58%)	00:00:29	93,473 (9.85%)	36.72%	31.44%	$0.00 (0.00%)
3.	/employeeservices/jobs/	Employment opportunities - City of Kent, Washington	36,119 (1.02%)	20,175 (1.11%)	00:00:53	14,351 (1.51%)	49.91%	48.55%	$0.00 (0.00%)
4.	/jail/	Jail - City of Kent, Washington	17,129 (0.48%)	10,692 (0.59%)	00:01:58	10,052 (1.06%)	54.19%	57.09%	$0.00 (0.00%)
5.	/pay/poswebtimeout.aspx	Page has expired	10,862 (0.31%)	9,112 (0.50%)	00:00:54	5,722 (0.60%)	62.93%	49.92%	$0.00 (0.00%)
6.	/kent-municipal-court/	- City of Kent, Washington	11,170 (0.31%)	6,956 (0.38%)	00:01:43	6,330 (0.67%)	50.88%	51.62%	$0.00 (0.00%)
7.	/activities/activitiesadvsearch.asp	Registration : Programs	18,511 (0.52%)	12,445 (0.68%)	00:03:45	3,310 (0.35%)	67.58%	46.35%	$0.00 (0.00%)
8.	/	Home - City of Kent, Washington	42,489 (1.20%)	28,304 (1.55%)	00:00:48	26,801 (2.82%)	31.01%	31.63%	$0.00 (0.00%)
9.	/sportsleagues/adultspringsoftballleague/	Adult Spring/Summer Softball League - City of Kent, Washington	6,849 (0.19%)	5,037 (0.28%)	00:02:18	1,816 (0.19%)	71.20%	66.49%	$0.00 (0.00%)
10.	/sportsleagues/youthtrack/	Youth track - Sports leagues - City of Kent, Washington	2,362 (0.07%)	1,566 (0.09%)	00:03:18	1,355 (0.14%)	70.33%	61.18%	$0.00 (0.00%)
11.	/content.aspx?id=11732	Riverbend's Miniature Golf Course - City of Kent, Washington	1,208 (0.03%)	1,007 (0.06%)	00:05:12	944 (0.10%)	80.51%	78.48%	$0.00 (0.00%)
12.	/content.aspx?id=40802190827	Kent Police ask public for help with any information related to the drive by shooting that resulted in infant's death - City of Kent, Washington	729 (0.02%)	689 (0.04%)	00:01:42	653 (0.07%)	93.87%	90.26%	$0.00 (0.00%)
13.	/corrections/jils/jailregister.asp?formname=search&formaction=search&s_booking_name=	Jail Inmate Lookup Service - City of Kent, Washington	595 (0.02%)	595 (0.03%)	00:00:00	595 (0.06%)	99.33%	100.00%	$0.00 (0.00%)
14.	/kentcommons/	Kent Commons - City of Kent, Washington	7,090 (0.20%)	4,500 (0.25%)	00:01:06	3,950 (0.42%)	37.37%	37.48%	$0.00 (0.00%)
15.	/sportsleagues/girlsfastpitch/	Girls fastpitch softball - Sports leagues - City of Kent, Washington	1,713 (0.05%)	1,315 (0.07%)	00:03:13	850 (0.09%)	74.24%	68.94%	$0.00 (0.00%)
16.	/content.aspx?id=11180	Kent Memorial Park - City of Kent, Washington	6,075 (0.17%)	3,418 (0.19%)	00:00:47	2,402 (0.25%)	42.84%	39.03%	$0.00 (0.00%)
17.	/content.aspx?id=11730	Riverbend Driving Range - City of Kent, Washington	908 (0.03%)	783 (0.04%)	00:03:35	738 (0.08%)	78.86%	76.87%	$0.00 (0.00%)
18.	/corrections/jils/default.aspx	Jail Inmate Lookup Service - City of Kent, Washington	510 (0.01%)	510 (0.03%)	00:00:00	510 (0.05%)	100.00%	100.00%	$0.00 (0.00%)
19.	/default.aspx	(not set)	590 (0.02%)	519 (0.03%)	00:00:15	514 (0.05%)	94.94%	84.92%	$0.00 (0.00%)
20.	/activities/activitiescoursedetails.asp?aid=1923&cid=53962&lid=62?lid=62	Registration : Programs	845 (0.02%)	684 (0.04%)	00:05:40	599 (0.06%)	84.47%	76.80%	$0.00 (0.00%)

UX Offerings

Basic	Advanced
Planning Survey	Planning Survey
Design Survey	Design Survey
Data Heat-mapping	Data Heat-mapping
Basic Analytics report	Advanced Analytics report
3 wireframe options	User Testing Videos
	Usability Report Document
	3 wireframe options
	* Focus Groups

What's next?

- UX owns the process

- Study will still be generated by UX

- PM can deliver their own meetings and make changes to the proposed wireframes as needed

- PM manager has access to all UX resources

QUESTIONS?