iPhone Specialist Lab Lab 01: HCI Principles

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Gestalt Theory

- Köhler, Koffka, Wertheimer (Berliner Schule):
 "Gestaltpsychologie", 1912
- What do humans perceive as belonging together spatially or temporally?
- Basis of order in perception, movement, memory, thinking, learning, and acting
- Overall 100+ Gestalt laws





Why should I care?

- Simple rules for visual (and auditory) UI design
- Hints how users will react to

ilities Sections Action A	dd Column Attach Record Inspect	
Topic DIS is cool!		
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	General Keyboard Text RTF Export Clippings Sound Capture Update	
	Bullets	
	Rows with no children: Minimum width: 0.423 cm	n
	Rows with children, expanded: Width: 0.423 cm Rows with children, collapsed:	n
	Checkboxes	
	Checked: ✓ Minimum width: 0.386 cm	n
	Unchecked: Width: 0.388 cm	n
	Indeterminate: -	
	Spacing Indent width per level: 0.635 cm	
	Space between columns: 0.317 cm	
	Reset	(?

 Good UIs respect and use Gestalt laws for understandability and intuitiveness

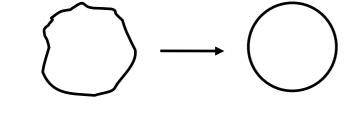




Law I: Good Shape

 In-class experiment: Drawing

- Perception has tendency towards remembering things as "good" / clear / simple shapes
- "Cognitive compression algorithm"!







Law 2: Proximity

- In-class experiment:

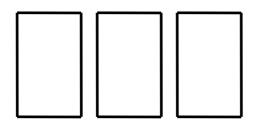
- Spatially (or temporally!) close objects (events) are perceived as belonging together.
- Advantage: allows for order by position only, without other aides
 - Helps to keep the interface simple





Law 3: Closure

 In-class experiment:



- Closed shapes appear as belonging together
- Temporally?
- Foundation of window metaphor
- But: Don't Overdo It.

Contact Info		Assets			
Name First: John		Salary O <=20K O >20-40K	Real Estate – Home Rental		
Last:	Abercrombe	● >40-60K ○ >60-80K	Farm		
Address		O >80K	Other		
Number:	123	Bank			
Street:	Pleasant St.	Name: Ba	ank of the West		
City:	Cleveland	Accounts			
State	OH V	Checking: \$2	500.24		
State: OH Zip Code: 12345		Savings: \$5	Savings: \$52,465.37		

Too many boxes. (From Johnson: GUI Bloopers)





Law 4: Similarity

 In-class experiment:

Unread ne	Ms in	nec, humon, Funny	1	article	+	5 old
		rec, humor, Funny, reruns	1	article		5 old
		clari, living, columns, miss_manners		article		1 old
		misc, taxes, moderated	98	articles		383 old
		comp, dcom, telecom	35	articles		74 old
		comp, dcon, modems		articles		969 old
		alt, security	18	articles		91 old
		comp.os.linux.announce		articles		24 old
		comp.os.linux.development.apps		articles		175 old
		comp.os.linux, development, system	115	articles		187 old
		comp.os.linux.misc	400	articles	+	924 old
		comp.os.linux.networking	301	articles	+	560 old
		comp.os.linux.setup	264	articles		1711 old
Unread ne	ws in	comp.periphs.printers	5	articles	+	839 old
Unread ne	us in	comp.protocols.kerberos	16	articles	+	29 old
Unread ne	ws in	comp, security, announce		articles		0 old
Unread ne	NS In	comp.security.gss-api	2	articles	+	2 old
Unread ne	ws in	comp, security, misc	36	articles	+	60 old
Unread ne	ws in	comp.security.unix	94	articles	+	105 old
Unread ne	ws in	comp.windows.x.announce	2	articles		2 old
Unread ne	ws in	comp.windows.x.apps	4	articles	+	22 old
Unread ne	ws in	gru, emacs, bug	15	articles	+	31 old
Unread ne	ws in	news, announce, newgroups	18	articles	+	5 old
Unread ne	ws in	news.software.b	2	articles	+	7 old
		news.software.nntp		articles		90 old
Unread ne	ws in	news.software.readers	42	articles	+	163 old
Unread ne	ws in	shore.sys		article	+	5 old
		shore, news	1	article	+	2 old
		alt.sources		article		5 old
Unread ne	ws in	alt.source-code	1	article	+	1 old
_	0p	erations apply to current selection	or cursor p	osition		
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Bad button design in xrn

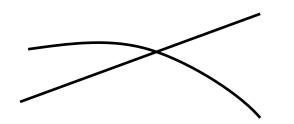
- $\begin{array}{c} \triangle \bigcirc \Box \\ \triangle \bigcirc \Box \\ \triangle \bigcirc \Box \end{array}$
- Similar shapes appear as belonging together
- Temporally?
- Different objects have higher information content (i.e., cognitive effort)
 - This can be A Good Thing or A Bad Thing
- "Similar" is not necessarily "constant"
 - Linearity, "elegant curve",...





Law 5: Continuity

 In-class experiment:



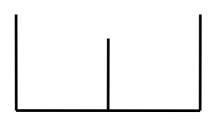
- A.k.a. "Law of the Good Curve"
- Continuous shapes appear as belonging together
- Temporally?
- Example: music





Law 6: Experience

 In-class experiment:



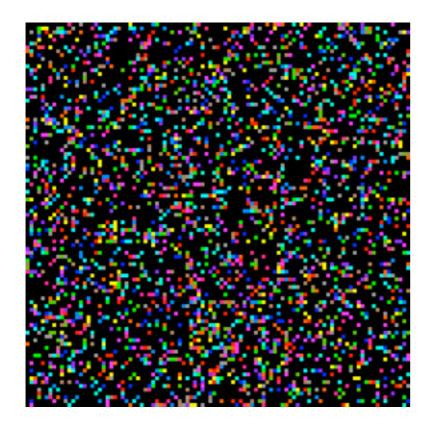
- We tend to "file" new things into categories we already know
- Uses existing knowledge, thereby saving learning effort and memory
- Foundation for the success of metaphors in UI design
 - Analog to real-world models
 - E.g., desktop metaphor





Law 7: Common Fate

• In-class experiment:



- A.k.a. "Law of Common Movement"
- Animated objects within a static environment appear as a group





