Laws of UX

Laws of UX is a collection of best practices that designers can consider when building user interfaces.

All

All Heuristic Principle Gestalt Cognitive Bias

- ## Aesthetic-Usability Effect

  Users often perceive aesthetically pleasing design as design that's more usable.

  Heuristic

- ## Doherty Threshold

  Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

  Principle

- ## Fitts's Law

  The time to acquire a target is a function of the distance to and size of the target.

  Heuristic

- ## Goal-Gradient Effect

  The tendency to approach a goal increases with proximity to the goal.

  Heuristic

- ## Hick's Law

  The time it takes to make a decision increases with the number and complexity of choices.

  Heuristic

- ## Jakob's Law

  Users spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know.

  Heuristic

- ## Law of Common Region

  Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

  Gestalt

- ## **Law of Proximity**

  Objects that are near, or proximate to each other, tend to be grouped together.

  Gestalt

- ## **Law of Prägnanz**

  People will perceive and interpret ambiguous or complex images as the simplest form possible, because it is the interpretation that requires the least cognitive effort of us.

  Gestalt

- ## **Law of Similarity**

  The human eye tends to perceive similar elements in a design as a complete picture, shape, or group, even if those elements are separated.

  Gestalt

- ## **Law of Uniform Connectedness**

  Elements that are visually connected are perceived as more related than elements with no connection.

  Gestalt

- ## **Miller's Law**

  The average person can only keep 7 (plus or minus 2) items in their working memory.

  Heuristic

- ## **Occam's Razor**

  Among competing hypotheses that predict equally well, the one with the fewest assumptions should be selected.

  Principle

- ## **Pareto Principle**

  The Pareto principle states that, for many events, roughly 80% of the effects come from 20% of the causes.

  Principle

- ## **Parkinson's Law**

  Any task will inflate until all of the available time is spent.

  Heuristic

- ## [Peak-End Rule](#)

  People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

  Cognitive Bias

- ## [Postel's Law](#)

  Be liberal in what you accept, and conservative in what you send.

  Principle

- ## [Serial Position Effect](#)

  Users have a propensity to best remember the first and last items in a series.

  Cognitive Bias

- ## [Tesler's Law](#)

  Tesler's Law, also known as The Law of Conservation of Complexity, states that for any system there is a certain amount of complexity which cannot be reduced.

  Principle

- ## [Von Restorff Effect](#)

  The Von Restorff effect, also known as The Isolation Effect, predicts that when multiple similar objects are present, the one that differs from the rest is most likely to be remembered.

  Cognitive Bias

- ## [Zeigarnik Effect](#)

  People remember uncompleted or interrupted tasks better than completed tasks.

  Cognitive Bias

[View All](#)

Aesthetic-Usability Effect

Overview

Users often perceive aesthetically pleasing design as design that's more usable.

Takeaways

1. An aesthetically pleasing design creates a positive response in people's brains and leads them to believe the design actually works better.

2. People are more tolerant of minor usability issues when the design of a product or service is aesthetically pleasing.
3. Visually pleasing design can mask usability problems and prevent issues from being discovered during usability testing.

Origins

The aesthetic-usability effect was first studied in the field of human–computer interaction in 1995. Researchers Masaaki Kurosu and Kaori Kashimura from the Hitachi Design Center tested 26 variations of an ATM UI, asking the 252 study participants to rate each design on ease of use, as well as aesthetic appeal. They found a stronger correlation between the participants' ratings of aesthetic appeal and perceived ease of use than the correlation between their ratings of aesthetic appeal and actual ease of use. Kurosu and Kashimura concluded that users are strongly influenced by the aesthetics of any given interface, even when they try to evaluate the underlying functionality of the system.

[Source](#)

Further Reading

[The Aesthetic-Usability Effect](#)

Kate Moran | Nielsen Norman Group

[The Aesthetic Usability Effect and Prioritizing Appearance vs. Functionality](#)

Kathryn Whitenton | Nielsen Norman Group

[Aesthetic-Usability Effect](#)

Mark Boulton

[Aesthetic Usability Effect](#)

Wikipedia

[Simple Beauty: The impact of visual complexity, prototypicality and color typicality on aesthetic perception in initial impression of websites.](#)

Anna Hanchar, B.Sc.

[The Aesthetic-Usability Effect: Why Beautiful-Looking Products are Preferred Over Usable-But-Not-Beautiful Ones](#)

Abhishek Chakraborty | Medium

[A Neuropsychological Theory of Positive Affect and Its Influence on Cognition](#)

F. Gregory Ashby

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Doherty Threshold](#)

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

Principle

[Fitts's Law](#)

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

[Hick's Law](#)

The time it takes to make a decision increases with the number and complexity of choices.

Heuristic

Next

[Doherty Threshold](#)

[View All](#)

Doherty Threshold

Overview

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

Takeaways

1. Provide system feedback within 400 ms in order to keep users' attention and increase productivity.
2. Use perceived performance to improve response time and reduce the perception of waiting.
3. Animation is one way to visually engage people while loading or processing is happening in the background.
4. Progress bars help make wait times tolerable, regardless of their accuracy.
5. Purposefully adding a delay to a process can actually increase its perceived value and instill a sense of trust, even when the process itself actually takes much less time.

Origins

In 1982 Walter J. Doherty and Ahrvind J. Thadani published, in the IBM Systems Journal, a research paper that set the requirement for computer response time to be 400 milliseconds, not 2,000 (2 seconds) which had been the previous standard. When a human being's command was executed and returned an answer in under 400 milliseconds, it was deemed to exceed the Doherty threshold, and use of such applications were deemed to be "addicting" to users.

Further Reading

[The Economic Value of Rapid Response Time](#)

Jim Elliott

[This 70s UX gem still applies today](#)

Michael Gugel | Medium

[The Economic Value of Rapid Response Time](#)

Dave Rupert

[The importance of percent-done progress indicators for computer-human interfaces](#)

Brad A. Myers

[Response time in man-computer conversational transactions](#)

Robert B. Miller

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Fitts's Law](#)

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

[Hick's Law](#)

The time it takes to make a decision increases with the number and complexity of choices.

Heuristic

[Aesthetic-Usability Effect](#)

Users often perceive aesthetically pleasing design as design that's more usable.

Heuristic

Next

[Fitts's Law](#)

[View All](#)

Fitts's Law

Overview

The time to acquire a target is a function of the distance to and size of the target.

Takeaways

1. Touch targets should be large enough for users to accurately select them.
2. Touch targets should have ample spacing between them.
3. Touch targets should be placed in areas of an interface that allow them to be easily acquired.

Origins

In 1954, psychologist Paul Fitts, examining the human motor system, showed that the time required to move to a target depends on the distance to it, yet relates inversely to its size. By his law, fast movements and small targets result in greater error rates, due to the speed-accuracy trade-off. Although multiple variants of Fitts' law exist, all encompass this idea. Fitts' law is widely applied in user experience (UX) and user interface (UI) design. For example, this law influenced the convention of making interactive buttons large (especially on finger-operated mobile devices)—smaller buttons are more difficult (and time-consuming) to click. Likewise, the distance between a user's task/attention area and the task-related button should be kept as short as possible.

[Source](#)

Further Reading

[Fitts' Law In The Touch Era](#)

Smashing Magazine

[Fitts's Law: The Importance of Size and Distance in UI Design](#)

Interaction Design Foundation

[Fitts's Law on Wikipedia](#)

Wikipedia

[Design for Fingers, Touch, and People, Part 1](#)

Steven Hoober | UX Matters

[The information capacity of the human motor system in controlling the amplitude of movement](#)

Semantic Scholar

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Doherty Threshold](#)

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

Goal-Gradient Effect

Overview

The tendency to approach a goal increases with proximity to the goal.

Takeaways

1. The closer users are to completing a task, the faster they work towards reaching it.
2. Providing artificial progress towards a goal will help to ensure users are more likely to have the motivation to complete that task.
3. Provide a clear indication of progress in order to motivate users to complete tasks.

Origins

The goal-gradient hypothesis, originally proposed by the behaviorist Clark Hull in 1932, states that the tendency to approach a goal increases with proximity to the goal. In a classic experiment that tests this hypothesis, Hull (1934) found that rats in a straight alley ran progressively faster as they proceeded from the starting box to the food. Although the goal-gradient hypothesis has been investigated exten-sively with animals (e.g., Anderson 1933; Brown 1948; for a review, see Heilizer 1977), its implications for human behavior and decision making are understudied. Further-more, this issue has important theoretical and practical implications for intertemporal consumer behavior in reward programs (hereinafter RPs) and other types of motivational systems (e.g., Deighton 2000; Hsee, Yu, and Zhang 2003; Kivetz 2003; Lal and Bell 2003).

[Source](#)

Further Reading

[How Uber uses psychology to perfect their customer experience](#)

Jennifer Clinehens | Choice Hacking

[Moving the Finish Line: The Goal Gradient Hypothesis](#)

Farnam Street

[Designing for motivation with the goal-gradient effect](#)

Ian Batterbee | UX Collective

[The Goal-Gradient Hypothesis Resurrected: Purchase Acceleration, Illusionary Goal Progress, and Customer Retention](#)

Ran Kivetz, Oleg Urminsky, Yuhuang Zheng | uchicago.edu

[The importance of percent-done progress indicators for computer-human interfaces](#)

Brad A. Myers | Carnegie Mellon University

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Fitts's Law](#)

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

[Law of Common Region](#)

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

Gestalt

[Law of Proximity](#)

Objects that are near, or proximate to each other, tend to be grouped together.

Gestalt

Next

[Hick's Law](#)

[View All](#)

Hick's Law

Overview

The time it takes to make a decision increases with the number and complexity of choices.

Takeaways

1. Minimize choices when response times are critical to increase decision time.
2. Break complex tasks into smaller steps in order to decrease cognitive load.
3. Avoid overwhelming users by highlighting recommended options.
4. Use progressive onboarding to minimize cognitive load for new users.
5. Be careful not to simplify to the point of abstraction.

Origins

Hick's Law (or the Hick-Hyman Law) is named after a British and an American psychologist team of William Edmund Hick and Ray Hyman. In 1952, this pair set out to examine the relationship between the number of stimuli present and an individual's reaction time to any given stimulus. As you would expect, the more stimuli to choose from, the longer it takes the user to make a decision on which one to interact with. Users bombarded with choices have to take time to interpret and decide, giving them work they don't want.

[Source](#)

Further Reading

[The Choice Overload Effect: Why simplicity is the key to perfecting your experience](#)

Jennifer Clinehens | Medium

[Hick's Law: Making the choice easier for users](#)

Mads Soegaard | Interaction Design Foundation

[Hick's Law—Quick Decision Making](#)

Anton Nikolov | Medium.com

[The Psychology Principles Every UI/UX Designer Needs to Know](#)

Thanasis Rigopoulos | Marvel

[Hick's Law on Wikipedia](#)

Wikipedia

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Doherty Threshold](#)

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

Principle

[Fitts's Law](#)

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

Miller's Law

The average person can only keep 7 (plus or minus 2) items in their working memory.

Heuristic

Next

Jakob's Law

View All

Jakob's Law

Overview

Users spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know.

Takeaways

1. Users will transfer expectations they have built around one familiar product to another that appears similar.
2. By leveraging existing mental models, we can create superior user experiences in which the users can focus on their tasks rather than on learning new models.
3. When making changes, minimize discord by empowering users to continue using a familiar version for a limited time.

Origins

Jakob's Law was coined by Jakob Nielsen, a User Advocate and principal of the Nielsen Norman Group which he co-founded with Dr. Donald A. Norman (former VP of research at Apple Computer). Dr. Nielsen established the 'discount usability engineering' movement for fast and cheap improvements of user interfaces and has invented several usability methods, including heuristic evaluation.

Source

Further Reading

Jakob's Law of Internet User Experience

Nielsen Norman Group

Top 10 Mistakes in Web Design

Nielsen Norman Group

End of Web Design

Nielsen Norman Group

Related

[Aesthetic-Usability Effect](#)

Users often perceive aesthetically pleasing design as design that's more usable.

Heuristic

[Doherty Threshold](#)

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

Principle

[Fitts's Law](#)

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

Next

Law of Common Region

Overview

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

Takeaways

1. Common region creates a clear structure and helps users quickly and effectively understand the relationship between elements and sections.
2. Adding a border around an element or group of elements is an easy way to create common region.
3. Common region can also be created by defining a background behind an element or group of elements.

Origins

The principles of grouping (or Gestalt laws of grouping) are a set of principles in psychology, first proposed by Gestalt psychologists to account for the observation that humans naturally perceive objects as organized patterns and objects, a principle known as Prägnanz. Gestalt psychologists argued that these principles exist because the mind has an innate disposition to perceive patterns in the stimulus based on certain rules.

These principles are organized into five categories: Proximity, Similarity, Continuity, Closure, and Connectedness.

Source

Further Reading

The Principle of Common Region: Containers Create Groupings

Aurora Harley | Nielsen Norman Group

Design Principles: Visual Perception And The Principles Of Gestalt

Steven Bradley | Smashing Magazine

Gestalt principles

Scholarpedia

Buy Large Format Poster

Download free poster

Related

Law of Proximity

Objects that are near, or proximate to each other, tend to be grouped together.

Gestalt

Law of Uniform Connectedness

Elements that are visually connected are perceived as more related than elements with no connection.

Gestalt

Fitts's Law

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

Next

Law of Proximity

View All

Law of Proximity

Overview

Objects that are near, or proximate to each other, tend to be grouped together.

Takeaways

1. Proximity helps to establish a relationship with nearby objects.
2. Elements in close proximity are perceived to share similar functionality or traits.
3. Proximity helps users understand and organize information faster and more efficiently.

Origins

The principles of grouping (or Gestalt laws of grouping) are a set of principles in psychology, first proposed by Gestalt psychologists to account for the observation that humans naturally perceive objects as organized patterns and objects, a principle known as Prägnanz. Gestalt psychologists argued that these principles exist because the mind has an innate disposition to perceive patterns in the stimulus based on certain rules. These principles are organized into five categories: Proximity, Similarity, Continuity, Closure, and Connectedness.

Source

Further Reading

Proximity Principle in Visual Design

Aurora Harley | Nielsen Norman Group

Laws of Proximity, Uniform Connectedness, and Continuation

Mads Soegaard | Interation Design Foundation

The Psychology Principles Every UI/UX Designer Needs to Know

Thanasis Rigopoulos | Marvel

Design Principles: Visual Perception And The Principles Of Gestalt

Steven Bradley | Smashing Magazine

Buy Large Format Poster

Download free poster

Related

Law of Common Region

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

Gestalt

Law of Uniform Connectedness

Elements that are visually connected are perceived as more related than elements with no connection.

Gestalt

Law of Prägnanz

Overview

People will perceive and interpret ambiguous or complex images as the simplest form possible, because it is the interpretation that requires the least cognitive effort of us.

Takeaways

1. The human eye likes to find simplicity and order in complex shapes because it prevents us from becoming overwhelmed with information.
2. Research confirms that people are better able to visually process and remember simple figures than complex figures.
3. The human eye simplifies complex shapes by transforming them into a single, unified shape.

Origins

In 1910, psychologist Max Wertheimer had an insight when he observed a series of lights flashing on and off at a railroad crossing. It was similar to how the lights encircling a movie theater marquee flash on and off. To the observer, it appears as if a single light moves around the marquee, traveling from bulb to bulb, when in reality it's a series of bulbs turning on and off and the lights don't move it all. This observation led to a set of descriptive principles about how we visually perceive objects. These principles sit at the heart of nearly everything we do graphically as designers.

[Source](#)

Further Reading

[Design Principles: Visual Perception And The Principles Of Gestalt](#)

Steven Bradley | Smashing Magazine

[The Laws of Figure/Ground, Prägnanz, Closure, and Common Fate](#)

Mads Soegaard | Interation Design Foundation

[Buy Large Format Poster](#)

[Download free poster](#)

Related

Hick's Law

The time it takes to make a decision increases with the number and complexity of choices.

Heuristic

Law of Common Region

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

Gestalt

Law of Proximity

Objects that are near, or proximate to each other, tend to be grouped together.

Gestalt

Next

Law of Similarity

View All

Law of Similarity

Overview

The human eye tends to perceive similar elements in a design as a complete picture, shape, or group, even if those elements are separated.

Takeaways

1. Elements that are visually similar will be perceived as related.
2. Color, shape, and size, orientation and movement can signal that elements belong to the same group and likely share a common meaning or functionality.
3. Ensure that links and navigation systems are visually differentiated from normal text elements.

Origins

The principles of grouping (or Gestalt laws of grouping) are a set of principles in psychology, first proposed by Gestalt psychologists to account for the observation that humans naturally perceive objects as organized patterns and objects, a principle known as Prägnanz. Gestalt psychologists argued that these principles exist because the mind has an innate disposition to perceive patterns in the stimulus based on certain rules. These principles are organized into five categories: Proximity, Similarity, Continuity, Closure, and Connectedness.

Source

Further Reading

[Similarity Principle in Visual Design](#)

Aurora Harley | Nielson Norman Group

[The Law of Similarity - Gestalt Principles](#)

Interaction Deisgn Foundation | Mads Soegaard

[Design Principles: Visual Perception And The Principles Of Gestalt](#)

Steven Bradley | Smashing Magazine

[Use Gestalt Laws to Improve Your UX](#)

Sabina Idler | Usabilla Blog

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Law of Common Region](#)

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

Gestalt

[Law of Proximity](#)

Objects that are near, or proximate to each other, tend to be grouped together.

Gestalt

[Law of Prägnanz](#)

People will perceive and interpret ambiguous or complex images as the simplest form possible, because it is the interpretation that requires the least cognitive effort of us.

Gestalt

Next

[Law of Uniform Connectedness](#)

[View All](#)

Law of Uniform Connectedness

Overview

Elements that are visually connected are perceived as more related than elements with no connection.

Takeaways

1. Group functions of a similar nature so they are visually connected via colors, lines, frames, or other shapes.
2. Alternately, you can use a tangible connecting reference (line, arrow, etc) from one element to the next to also create a visual connection.
3. Use uniform connectedness to show context or to emphasize the relationship between similar items.

Origins

The principles of grouping (or Gestalt laws of grouping) are a set of principles in psychology, first proposed by Gestalt psychologists to account for the observation that humans naturally perceive objects as organized patterns and objects, a principle known as Prägnanz. Gestalt psychologists argued that these principles exist because the mind has an innate disposition to perceive patterns in the stimulus based on certain rules. These principles are organized into five categories: Proximity, Similarity, Continuity, Closure, and Connectedness.

Source

Further Reading

Gestalt Principles of Perception

Andy Rutledge

Laws of Proximity, Uniform Connectedness, and Continuation

Interaction Design Foundation | Mads Soegaard

Design Principles: Visual Perception And The Principles Of Gestalt

Steven Bradley | Smashing Magazine

Buy Large Format Poster

Download free poster

Related

Law of Common Region

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

Gestalt

Law of Proximity

Objects that are near, or proximate to each other, tend to be grouped together.

Gestalt

Fitts's Law

The time to acquire a target is a function of the distance to and size of the target.

Heuristic

Next

Miller's Law

Overview

The average person can only keep 7 (plus or minus 2) items in their working memory.

Takeaways

1. Don't use the "magical number seven" to justify unnecessary design limitations.
2. Organize content into smaller chunks to help users process, understand, and memorize easily.
3. Remember that short-term memory capacity will vary per individual, based on their prior knowledge and situational context.

Origins

In 1956, George Miller asserted that the span of immediate memory and absolute judgment were both limited to around 7 pieces of information. The main unit of information is the bit, the amount of data necessary to make a choice between two equally likely alternatives. Likewise, 4 bits of information is a decision between 16 binary alternatives (4 successive binary decisions). The point where confusion creates an incorrect judgment is the channel capacity. In other words, the quantity of bits which can be transmitted reliably through a channel, within a certain amount of time.

[Source](#)

Further Reading

[Miller's Law, Chunking, and the Capacity of Working Memory](#)

Khan Academy

[Design Principles for Reducing Cognitive Load](#)

Jon Yablonski | Medium.com

[The Magical Mystery Four: How is Working Memory Capacity Limited, and Why?](#)

Nelson Cowan | NCBI

[Miller's Law on Wikipedia](#)

Wikipedia

[The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information](#)

George A. Miller

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Hick's Law](#)

The time it takes to make a decision increases with the number and complexity of choices.

Heuristic

[Aesthetic-Usability Effect](#)

Users often perceive aesthetically pleasing design as design that's more usable.

Heuristic

[Doherty Threshold](#)

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

Principle

Next

Occam's Razor

Overview

Among competing hypotheses that predict equally well, the one with the fewest assumptions should be selected.

Takeaways

1. The best method for reducing complexity is to avoid it in the first place.
2. Analyze each element and remove as many as possible, without compromising the overall function.
3. Consider completion only when no additional items can be removed.

Origins

Occam's razor (also Ockham's razor; Latin: lex parsimoniae "law of parsimony") is a problem-solving principle that, when presented with competing hypothetical answers to a problem, one should select the

one that makes the fewest assumptions. The idea is attributed to William of Ockham (c. 1287–1347), who was an English Franciscan friar, scholastic philosopher, and theologian.

[Source](#)

Further Reading

[Designing with Occam's Razor](#)

Jon Yablonski | Medium

[Occam's Razor: The Simplest Solution is Always the Best](#)

Mads Soegaard | Interaction Design Foundation

[Occam's Razor: A Great Principle for Designers](#)

Web Designer Depot

Buy Large Format Poster

[Download free poster](#)

Related

[Aesthetic-Usability Effect](#)

Users often perceive aesthetically pleasing design as design that's more usable.

Heuristic

[Pareto Principle](#)

The Pareto principle states that, for many events, roughly 80% of the effects come from 20% of the causes.

Principle

[Parkinson's Law](#)

Any task will inflate until all of the available time is spent.

Heuristic

Next

[Pareto Principle](#)

[View All](#)

Pareto Principle

Overview

The Pareto principle states that, for many events, roughly 80% of the effects come from 20% of the causes.

Takeaways

1. Inputs and outputs are often not evenly distributed.
2. A large group may contain only a few meaningful contributors to the desired outcome.
3. Focus the majority of effort on the areas that will bring the largest benefits to the most users.

Origins

Its origins stem back to Vilfredo Pareto, an economist who noticed 80% of Italy's land was owned by 20% of the population. Though it might seem vague, the 80/20 way of thinking can provide insightful and endlessly applicable analysis of lopsided systems, including user experience strategy.

[Source](#)

Further Reading

[Prioritize Quantitative Data with the Pareto Principle](#)

Evan Sunwall | Nielsen Norman Group

[The 80/20 Rule in User Experience](#)

Arin Bhowmick | Medium

[Applying the Pareto Principle to the User Experience](#)

Jeff Sauro | Measuring U

[The Pareto Principle and Your User Experience Work](#)

Interaction Design Foundation

[Pareto Principle on Wikipedia](#)

Wikipedia

Buy Large Format Poster

[Download free poster](#)

Related

[Aesthetic-Usability Effect](#)

Users often perceive aesthetically pleasing design as design that's more usable.

Heuristic

[Occam's Razor](#)

Among competing hypotheses that predict equally well, the one with the fewest assumptions should be selected.

Principle

[Parkinson's Law](#)

Any task will inflate until all of the available time is spent.

Heuristic

Next

[Parkinson's Law](#)

[View All](#)

Parkinson's Law

Overview

Any task will inflate until all of the available time is spent.

Takeaways

1. Limit the time it takes to complete a task to what users expect it'll take.
2. Reducing the actual duration to complete a task from the expected duration will improve the overall user experience.

Origins

Articulated by Cyril Northcote Parkinson as part of the first sentence of a humorous essay published in The Economist in 1955 and since republished online, it was reprinted with other essays in the book Parkinson's Law: The Pursuit of Progress (London, John Murray, 1958). He derived the dictum from his extensive experience in the British Civil Service.

[Source](#)

Further Reading

[Parkinson's Law on Wikipedia](#)

Wikipedia

[Parkinson's Law: Why Constraints Are The Best Thing You Can Work With](#)

Louis Chew | Medium.com

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Aesthetic-Usability Effect](#)

Users often perceive aesthetically pleasing design as design that's more usable.

Peak-End Rule

Overview

People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

Takeaways

1. Pay close attention to the most intense points and the final moments (the "end") of the user journey.
2. Identify the moments when your product is most helpful, valuable, or entertaining and design to delight the end user.
3. Remember that people recall negative experiences more vividly than positive ones.

Origins

A 1993 study titled "When More Pain Is Preferred to Less: Adding a Better End" by Kahneman, Fredrickson, Charles Schreiber, and Donald Redelmeier provided groundbreaking evidence for the peak–end rule. Participants were subjected to two different versions of a single unpleasant experience. The first trial had subjects submerge a hand in 14°C water for 60 seconds. The second trial had subjects submerge the other hand in 14°C water for 60 seconds, but then keep their hand submerged for an additional 30 seconds, during which the temperature was raised to 15 °C. Subjects were then offered the option of which trial to repeat. Against the law of temporal monotonicity, subjects were more willing to repeat the second trial, despite a prolonged exposure to uncomfortable temperatures. Kahneman et al. concluded that "subjects chose the long trial simply because they liked the memory of it better than the alternative (or disliked it less)".

[Source](#)

Further Reading

[Peak–End Rule](#)

Jon Yablonski | UX Collective

[How Uber uses psychology to perfect their customer experience](#)

Jennifer Clinehens | Medium

[The Peak–End Rule: How Impressions Become Memories](#)

Lexie Kane | Nielsen Norman Group

[What is Peak-End Theory? A Psychologist Explains How Our Memory Fools Us](#)

Positive Psychology

[How do our memories differ from our experiences?](#)

The Decision Lab

[Peak–End Rule](#)

Wikipedia

[When More Pain Is Preferred to Less: Adding a Better End](#)

Daniel Kahneman, Barbara L. Fredrickson, Charles A. Schreiber and Donald A. Redelmeier

[Evaluations of pleasurable experiences: The peak-end rule](#)

Amy M. Do, Alexander V. Rupert & George Wolford

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Serial Position Effect](#)

Users have a propensity to best remember the first and last items in a series.

Cognitive Bias

[Miller's Law](#)

The average person can only keep 7 (plus or minus 2) items in their working memory.

Heuristic

[Von Restorff Effect](#)

The Von Restorff effect, also known as The Isolation Effect, predicts that when multiple similar objects are present, the one that differs from the rest is most likely to be remembered.

Cognitive Bias

Next

Postel's Law

Overview

Be liberal in what you accept, and conservative in what you send.

Takeaways

1. Be empathetic to, flexible about, and tolerant of any of the various actions the user could take or any input they might provide.
2. Anticipate virtually anything in terms of input, access, and capability while providing a reliable and accessible interface.
3. The more we can anticipate and plan for in design, the more resilient the design will be.
4. Accept variable input from users, translating that input to meet your requirements, defining boundaries for input, and providing clear feedback to the user.

Origins

Postel's Law (also known as the Robustness Principle) was formulated by Jon Postel, an early pioneer of the Internet. The Law is a design guideline for software, specifically in regards to TCP and networks, and states "TCP implementations should follow a general principle of robustness: be conservative in what you do, be liberal in what you accept from others". In other words, programs that send messages to other machines (or to other programs on the same machine) should conform completely to the specifications, but programs that receive messages should accept non-conformant input as long as the meaning is clear.

Source

Further Reading

Design Systems and Postel's Law

Mark Boulton

Robustness and Least Power

Adactio

Your Website has Two Faces

A List Apart

Design with Difficult Data

Steven Garrity

Related

Hick's Law

The time it takes to make a decision increases with the number and complexity of choices.

Heuristic

Law of Prägnanz

People will perceive and interpret ambiguous or complex images as the simplest form possible, because it is the interpretation that requires the least cognitive effort of us.

Gestalt

Tesler's Law

Tesler's Law, also known as The Law of Conservation of Complexity, states that for any system there is a certain amount of complexity which cannot be reduced.

Principle

Next

Serial Position Effect

View All

Serial Position Effect

Overview

Users have a propensity to best remember the first and last items in a series.

Takeaways

1. Placing the least important items in the middle of lists can be helpful because these items tend to be stored less frequently in long-term and working memory.
2. Positioning key actions on the far left and right within elements such as navigation can increase memorization.

Origins

The serial position effect, a term coined by Herman Ebbinghaus, describes how the position of an item in a sequence affects recall accuracy. The two concepts involved, the primacy effect and the recency effect, explains how items presented at the beginning of a sequence and the end of a sequence are recalled with greater accuracy than items in the middle of a list. Manipulation of the serial position effect to create better user experiences is reflected in many popular designs by successful companies like Apple, Electronic Arts, and Nike.

[Source](#)

Further Reading

[Serial Position Effect: How to Create Better User Interfaces](#)

Euphemia Wong | Interaction Design Foundation

[The Serial Position Effect: Why ABC and XYZ Stand Out the Most Among All the Alphabets](#)

Abhishek Chakraborty | Medium.com

[Psychology in Design (Part 1)](#)

Andri Budzinskiy | Medium.com

[Serial Position Effect on Wikipedia](#)

Wikipedia

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Peak-End Rule](#)

People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

Cognitive Bias

[Miller's Law](#)

The average person can only keep 7 (plus or minus 2) items in their working memory.

Heuristic

[Von Restorff Effect](#)

The Von Restorff effect, also known as The Isolation Effect, predicts that when multiple similar objects are present, the one that differs from the rest is most likely to be remembered.

Cognitive Bias

Next

Tesler's Law

Overview

Tesler's Law, also known as The Law of Conservation of Complexity, states that for any system there is a certain amount of complexity which cannot be reduced.

Takeaways

1. All processes have a core of complexity that cannot be designed away and therefore must be assumed by either the system or the user.
2. Ensure as much as possible of the burden is lifted from users by dealing with inherent complexity during design and development.
3. Take care not to simplify interfaces to the point of abstraction.

Origins

While working for Xerox PARC in the mid-1980s, Larry Tesler realized that the way users interact with applications was just as important as the application itself. The book Designing for Interaction by Dan Saffer, includes an interview with Larry Tesler that describes the law of conservation of complexity. The interview is popular among user experience and interaction designers. Larry Tesler argues that, in most cases, an engineer should spend an extra week reducing the complexity of an application versus making millions of users spend an extra minute using the program because of the extra complexity. However, Bruce Tognazzini proposes that people resist reductions to the amount of complexity in their lives. Thus, when an application is simplified, users begin attempting more complex tasks.

[Source](#)

Further Reading

[Why Life Can't Be Simpler](#)

Farnam Street

[8 Design Guidelines for Complex Applications](#)

Kate Kaplan | Nielsen Norman Group

[Explaining the Law of Conservation of Complexity](#)

Michael Calleia | Humanist.co

[Controls are Choices](#)

Dan Saffer | Medium.com

[Simplicity is Overrated](#)

Gabriel Colombo | Marvel

[**Nobody Wants To Use Your Product**](#)

Goran Peuc | Smashing Magazine

[**Law of Conservation of Complexity on Wikipedia**](#)

Wikipedia

[Buy Large Format Poster](#)

[Download free poster](#)

Related

Hick's Law

The time it takes to make a decision increases with the number and complexity of choices.

Heuristic

Law of Prägnanz

People will perceive and interpret ambiguous or complex images as the simplest form possible, because it is the interpretation that requires the least cognitive effort of us.

Gestalt

Postel's Law

Be liberal in what you accept, and conservative in what you send.

Principle

Next

Von Restorff Effect

[View All](#)

Von Restorff Effect

Overview

The Von Restorff effect, also known as The Isolation Effect, predicts that when multiple similar objects are present, the one that differs from the rest is most likely to be remembered.

Takeaways

1. Make important information or key actions visually distinctive.
2. Use restraint when placing emphasis on visual elements to avoid them competing with one another and to ensure salient items don't get mistakenly identified as ads.
3. Don't exclude those with a color vision deficiency or low vision by relying exclusively on color to communicate contrast.

4. Carefully consider users with motion sensitivity when using motion to communicate contrast.

Origins

The theory was coined by German psychiatrist and pediatrician Hedwig von Restorff (1906–1962), who, in her 1933 study, found that when participants were presented with a list of categorically similar items with one distinctive, isolated item on the list, memory for the item was improved.

[Source](#)

Further Reading

[Psychology in Design (Part 1)](#)

Andri Budzinskiy | Medium.com

[The Psychology Principles Every UI/UX Designer Needs to Know](#)

Thanasis Rigopoulos | Marvel

[Von Restorff Effect on Wikipedia](#)

Wikipedia

[Superior pattern processing is the essence of the evolved human brain](#)

Mark P. Mattson

[Working Memory and Attention – A Conceptual Analysis and Review](#)

Klaus Oberauer

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Peak-End Rule](#)

People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

Cognitive Bias

[Serial Position Effect](#)

Users have a propensity to best remember the first and last items in a series.

Cognitive Bias

Next

[Zeigarnik Effect](#)

[View All](#)

Zeigarnik Effect

Overview

People remember uncompleted or interrupted tasks better than completed tasks.

Takeaways

1. Invite content discovery by providing clear signifiers of additional content.
2. Providing artificial progress towards a goal will help to ensure users are more likely to have the motivation to complete that task.
3. Provide a clear indication of progress in order to motivate users to complete tasks.

Origins

Bluma Wulfovna Zeigarnik (1900 – 1988) was a Soviet psychologist and psychiatrist, a member of the Berlin School of experimental psychology and Vygotsky Circle. She discovered the Zeigarnik effect and contributed to the establishment of experimental psychopathology as a separate discipline in the Soviet Union in the post-World War II period. In the 1920s she conducted a study on memory, in which she compared memory in relation to incomplete and complete tasks. She had found that incomplete tasks are easier to remember than successful ones. This is now known as the Zeigarnik effect. She later began working at the Institute of Higher Nervous Activity which is where she would meet her next big influence Vygowski, and become a part of his circle of scientists. It was also there that Zeigarnik founded the Department of Psychology. During that time, Zeigarnik received the Lewin Memorial Award in 1983 for her psychological research.

[Source](#)

Further Reading

[Endowed progress effect: Give your users a head start](#)

Canvs Editorial | UX Collective

[Moving the Finish Line: The Goal Gradient Hypothesis](#)

Farnam Street

[The Zeigarnik Effect: Why it is so hard to leave things incomplete](#)

Abhishek Chakraborty | Medium.com

[Zeigarnik Effect](#)

Coglode

[Zeigarnik Effect on Wikipedia](#)

Wikipedia

[Buy Large Format Poster](#)

[Download free poster](#)

Related

[Goal-Gradient Effect](#)

The tendency to approach a goal increases with proximity to the goal.

Heuristic

[Miller's Law](#)

The average person can only keep 7 (plus or minus 2) items in their working memory.

Heuristic

[Peak-End Rule](#)

People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

Cognitive Bias

Next

[Aesthetic-Usability Effect](#)