# Effective UX Through Cognitive Psychology: The Gestalt Laws of Perception Travis Moore

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**Abstract**

This paper has three primary goals: (1) to plead the case that an effective User Experience, or UX, is necessarily in the design and development of products that are meant for human interaction, (2) to explain a process for the design and development around user-centered design that utilizes knowledge from cognitive psychology, and (3) to explain what the Gestalt Laws of Perception of Figure-Ground, Similarity, and Closure are and how to use them in designing and developing an effective UX.

**The Need for UX**

User Experience, or UX for shot, is a topic that is receiving more attention lately as companies become increasingly aware of how important great UX is to their product. While UX has existed before the age of computers, our increasingly global-centric world has a demand for UX that is clear and easy to understand. However, despite this need there is still a lot of confusion over exactly what UX even is. UX creates the experience with interacting with a product, it encompasses many factors: usability, accessibility, performance, design, utility, ergonomics, and general human interaction (Cousins, 2013). Great UX is almost unnoticeable, enabling the user to understand how to interact with the product, allowing for a positive experience.

As technology progresses and the market becomes saturated with competitors, an effective UX can make the difference in what product is and is not successful. UX can create the momentum that propels businesses forward and can often be the first impression users have for a product (Cousins, 2013). UX isn’t just a consideration for larger businesses, even smaller companies will need to pay attention to UX to help engage and maintain users with a project that they are not readily familiar with. When UX works well it doesn’t just benefit users, it can help improve customer satisfaction, which in turn can increase sales. The benefits to a positive UX experience are not worth ignoring.

**The UX Design Process**

As there are many different ways to solve creative problems, there is not one correct solution to creating an effective UX. There is, however, a general process that one can apply to plan, design, and develop UX that can help before launching a product. There is an international standard that is the basis for many user-centered design UX methodologies: Specify the context of use, specify requirements, create design solutions, and evaluate designs (User Experience Professionals Association, 2013). Each phase of this process is iterative and can fall back to a previous stage, meaning that it can take an indefinite time to complete. In particular, the design phase is where designers and developers start to brainstorm, wireframe, prototype, and perform initial usability testing. It is this phase where an understanding of cognitive psychology can greatly aid laying the foundation for creating an effective UX

## **The Whole is Greater than the Sum of its Parts**

The Gestalt Laws of Perception are in use everywhere, whether or not you are specifically aware of what they are. Gestalt means “shape”, “form”, “essence”, or “whole”, and the Gestalt Laws of Perception explain how humans perceive and make sense of visual information (Matz, 2011). Essentially, Gestalt theory explains how humans make sense of the world through recognizing the whole structure and order from the parts that make it up. It is because of Gestalt that when a car drives by someone that they simply recognize it in whole as a car, and not as thousands of complex pieces of shaped metal, glass, plastic, and rubber parts instead. Without this ability to make coherent sense of whole forms rather than individual parts, the world would be infinitely complex to comprehend.

While there are many principles to the Gestalt Laws of Perception, they all work off of the Law of Prägnanz. The Law of Prägnanz is a bit like Occam’s Razor, which states that the simplest explanations tend to be more likely correct than complicated ones, in that when the mind tries to interpret a visual scene, it will do so in the simplest, most concisely recognizable way (Matz, 2011). The phrase “the whole is greater than the sum of its parts” comes from this idea and is something like a tagline that makes Gestalt memorable. With this phrase in mind, the following Gestalt Laws of Perception help clarify how this is made possible in the context of the general design of a quality UX.

**The Gestalt Laws of Perception**

The Law of Figure-Ground is essential in understanding how to design a layout that will contribute to an effective UX. What the Figure-Ground principle explains is how one has the tendency to perceive one aspect as the foreground figure and the other as the ground, or background (Boeree, 2000). Take for example this paper, without the ability to establish the black printed text as the foreground figure and the white paper it is printed on as the background, it would be impossible to read this paper. This is closely related to the concept of creating good contrast to ensure readability of text on a website. It would be a poor idea to implement UX that employs poor Figure-Ground relationships for its design because it would be difficult to tell things apart.

The Law of Similarity helps to establish ease of use in its contribution towards a quick-to-learn interface for UX. The Law of Similarity states that one will tend to group similar items together, such that the parts form a whole, within a larger form (Boeree, 2000). As easy way to employ the Law of Similarity in designing UX is too remember to be consistent throughout the implementation of the design. As this law states that objects perceived as similar will be grouped as similar, it is important to retain consistent aesthetics and purpose so as not to confuse the user. Once again, with this paper as an example, the formatting of this paper maintains consistency to aid in ease of reading. A header title is always located in the upper-left corner of the page with the same font, font size, color, and content, just like a subtitle is always centered with the same font, font size, color, and bold attribute. Once these patterns are established it allows the user to identify these parts easily and without confusion.

The Law of Closure is an interesting aspect of the Gestalt Laws of Perception due to it requiring the user to do extra work to fill in the blanks. The Law of Closure states that if something is missing or otherwise incomplete, one will tend to add to it in order to complete the object as a whole (Boeree, 2000). Upon initial grasping of the Law of Closure, it might seem like a bad idea as it makes the user work a bit harder to understand the UX. Granted, the Law of Closure states that the user will make the mental hurdle, but why risk forcing the user to do this in the first place? The difference between successful use of the Law of Closure and bad UX design is just how much closure one requires of the user. Great use of closure partially obscures a small portion of the design with the majority of the design accessible. Closure encourages a minimalist and elegant design strategy that can help break of the monotony of a design. Such as in game theory, by allowing the user to fill in the blank they feel smart, thereby engaging the user in the UX design.

**An Appreciation for Cognitive Psychology**

The work done in understanding how humans think and perceive information is critical in designing UX. Just like in formal experiments and testing, the more a designer or developer can devote their studies towards understanding their user, the more effective they can be when designing for them. UX is not just a buzzword in the industry nor is it a new idea. UX has always existed, but the idea of designing with UX in mind is a new and exciting field that only gets more interesting the more is learned about how humans think and perceive the world. Utilizing cognitive psychology, and the Laws of Gestalt in particular in particular, an effective UX can be designed prior to testing, resulting in a positive experience for all those involved.

## **References**

Cousins, C. (2013, December 30). *Why does user experience matter?* Retrieved December 12, 2016, from Design Shack, https://designshack.net/articles/why-does-user-experience-matter/

User Experience Professionals Association. (2013, December 13). *About UX*. Retrieved December 12, 2016, from User Experience Professionals Association, https://uxpa.org/resources/about-ux/

Matz, K. (2011, May 26). *The Gestalt laws of perception and how to use them in UI design*. Retrieved December 12, 2016, from Architecting Usability, http://architectingusability.com/2011/05/26/using-the-gestalt-laws-of-perception-in-ui-design/

Boeree, D. G. C. (2000). *Gestalt Psychology*. Retrieved December 12, 2016, from Gestalt Psychology, http://webspace.ship.edu/cgboer/gestalt.html