

# THE USE AND EXPERIENCE OF DESIGN

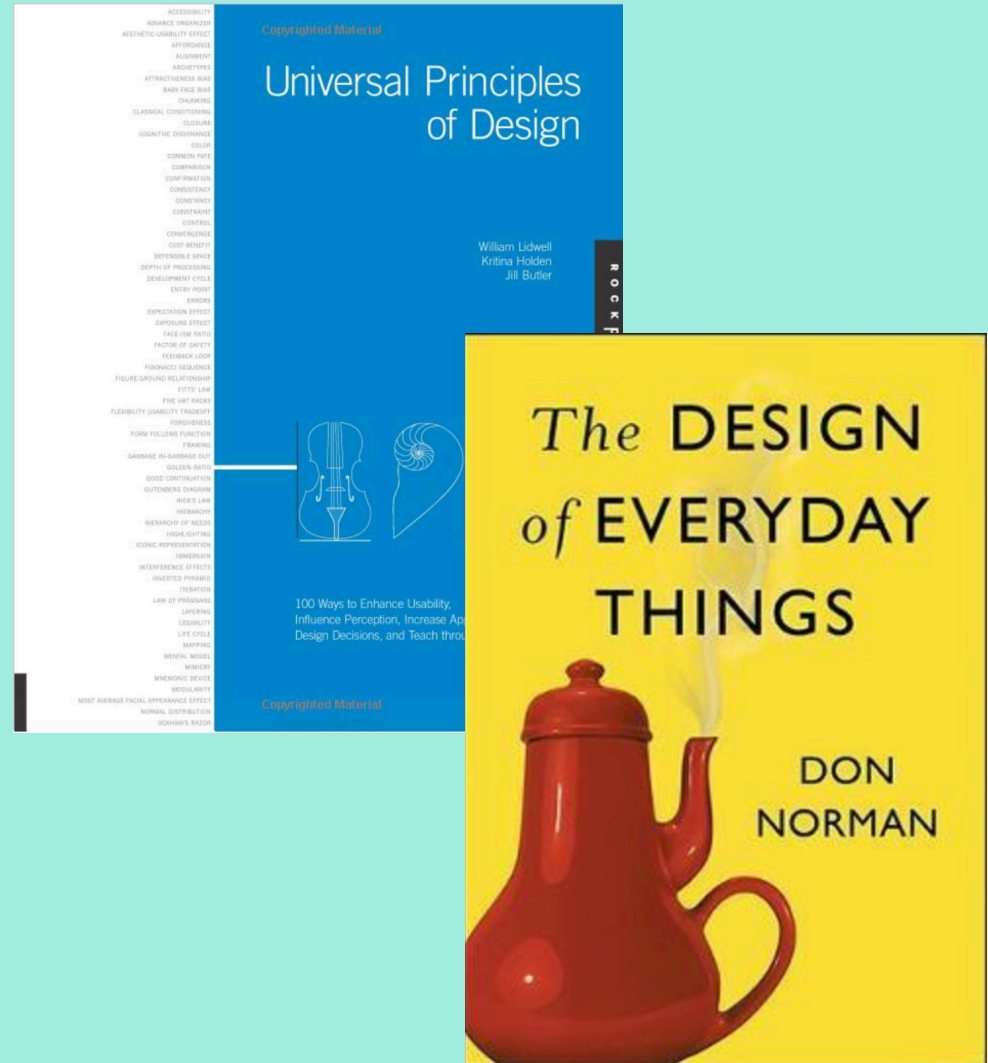
A Study of Metaphors, Affordances,  
and Constraints

# TABLE OF CONTENTS

Introduction .....	1
Background .....	2
Case Study	
Metaphors .....	3
Affordances .....	4
Constraints .....	5
Conclusion .....	6
References .....	7

# INTRODUCTION

After studying the design framework of Donald A. Norman about metaphors, affordances, and constraints, each student was instructed to observe the world around them in order to find real examples of these frameworks. The students must find and photograph both good and bad examples of metaphors, affordances and constraints, based on their given definitions. In this report, the student will give background of the frameworks, show and analyze the examples they found, and conclude all of their findings.



# BACKGROUND

## Metaphors

A metaphor is about using something from another space to refer to something you are actually designing. They are used in order to help us explain something new and unfamiliar in terms of something we already understand (Babich).

## Affordances

A property in which the physical characteristics of an object or environment influence its function. When the affordance of an object or environment corresponds with its intended function, the design will perform more efficiently and will be easier to use (Lidwell 22).

## Constraints

A method of limiting the actions that can be performed on a system. Use constraints in design to simplify usability, minimize errors, reduce the sensitivity of controls, minimize unintentional inputs, prevent or slow dangerous actions, and improve the clarity and intuitiveness of a design (Lidwell 60).

# CASE STUDY: METAPHORS

## Good



The photo of a refrigerator water and ice dispenser is a very good example of metaphor. You can see by the pictures which lever will give you water and which will give you ice by the little ice cube and water drop symbols above them.

## Bad



The photo of the Eco Mode button on a microwave is an example of a bad metaphor. Not only am I not able to tell what this button does from the symbol and label, but I also am unsure what the symbol is representing.

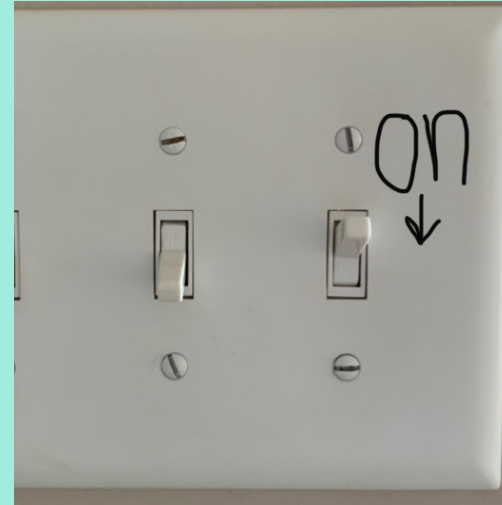
# CASE STUDY: AFFORDANCES

## Good



The photo of the mouthwash lid is an example of a good affordance. The lid is childproof, so it is more difficult to take off than ordinary lids. There are small lines on the sides of the bottle to show you where to squeeze the lid and an illustration on the top of the bottle to help instruct as well.

## Bad



The photo of the light switches is an example of a bad affordance. Typically, when you flick the switch up, that means turning it on and when the switch is down, that means off. In this case, the light is on when the switch is flipped down, which can be confusing for users.



# CASE STUDY: CONSTRAINTS

## Good



The photo of a monthly planner is an example of a good constraint. All of the tabs on the side of the book are designed to make it so the user doesn't have to search through the whole planner to find their current spot. They can quickly and easily find today's date without looking through the whole book.

## Bad



The photo of the “Tubshroom” is an example of a bad constraint. This device is meant to prevent hair from going down the drain and clogging the bathtub. However, the tubshroom ends up preventing the water from going down the drain fast enough so the bathtub clogs up regardless.

# CONCLUSION

## What I did

For this project I searched throughout my apartment to find real world examples of design Metaphors, Affordances, and Constraints and then determined whether they were good or bad examples based off of their definitions.

## What I found

It is very important to pay attention to your design and make sure there is good use of these three elements in order to enhance the use and experience of design. I noticed the bad examples I found are items that I tend to not use or get frustrated while using in my apartment.

## Reflection

Between the different good and bad examples, the good ones make for the better and most useful products and the bad examples confuse their users or make their users reluctant to use the product. All in all, it is very important to make sure one makes good use of metaphors, affordances, and constraints in their design.



# REFERENCES

- Babich, N. (2017, April 29). Metaphors and Analogies in Product Design. Retrieved from <https://uxplanet.org/metaphors-and-analogies-in-product-design-b9af77c18dba>
- Crescent Shaped Ice Cube. Retrieved from <https://www.subzero-wolf.com/assistance/answers/crescent-shaped-ice-cube>
- Lidwell, W., Butler, J., & Holden, K. (2003). Universal principles of design. Gloucester: Rockport.
- Lidwell, W., Butler, J., & Holden, K. (2003). Universal principles of design. Retrieved from <https://www.amazon.com/Universal-Principles-Design-William-Lidwell/dp/1592530079>
- Norman, D. A. (2013, November 14). The Design of Everyday Things. Retrieved from <https://www.bookdepository.com/Design-Everyday-Things-Donald-Norman/9780465050659>
- Salisbury, D. (1970, May 16). World's smallest droplets. Retrieved from <https://news.vanderbilt.edu/2013/05/16/worlds-smallest-droplets/>
- 6051.2093 - Mains Power Cord, CEE 7/7 Plug to IEC 60320 C13, 3 m, 10 A, 250 VAC, Black. Retrieved from <https://www.newark.com/schurter/6051-2093/pwr-cord-iec-c13-cee-7-7-plug/dp/29Y3318>