Explanation of Gestalt Theories and how it use in Moovie

This research aims to reflect and analyse the Gestalt principles through my experience and design project. Gestalt principles, a principle that stands as one of the vitally psychological theories in the world. Even the Gestalt theory was brought from the early twentieth century; it has been largely influenced in many areas these days, including linguistics, musicology, instructional design, human-computer interaction, architectural healthcare design, sustainable design, and art and visual communication (Lisa, 2008). One of the founders of the Gestalt theory Kurt Koffka (n.d.) made the famous statement for the principle "The whole is other than the sum of the parts". From human perception perspective, the purpose of the Gestalt principles, in general, is to emphasise the completeness of the group rather than an individual object. Karl and Felix (2006) noted that Gestalt principles demonstrates how people perceive visual organisation, giving the individuals principles for organizing individual elements as a whole. People have an ability to perceive or relate complicated objects to many differently simple, understandable forms, and then reconfigure or reassemble these forms to a new figure in their mind (Ian, 2008). "When our visual system gathers information through the eyes, the brain processes the information and interprets it" (Jose et al, 2013, p. 2). The Gestalt principles also show that human beings are capable of analysing the correlation between the object and other figures in a specific pattern or group (Dempsey & Keith, 2006).

There are three principles from the Gestalt theory I focused during the time I was designing the prototype for the design report, and they are the following:

1. Proximity

The law of proximity (Figure 1) introduces that human beings are able to see the connections between visual elements. "The law of proximity is also used by force-directed algorithms, which require that adjacent nodes are close (attractive forces), and that non-adjacent nodes are far apart (repulsive forces)" (Stephen et al., 2015, p. 559). With the principle supported, designers are likely to use whitespace to help individuals differentiate the differences between sections when it comes to designing mobile interfaces.

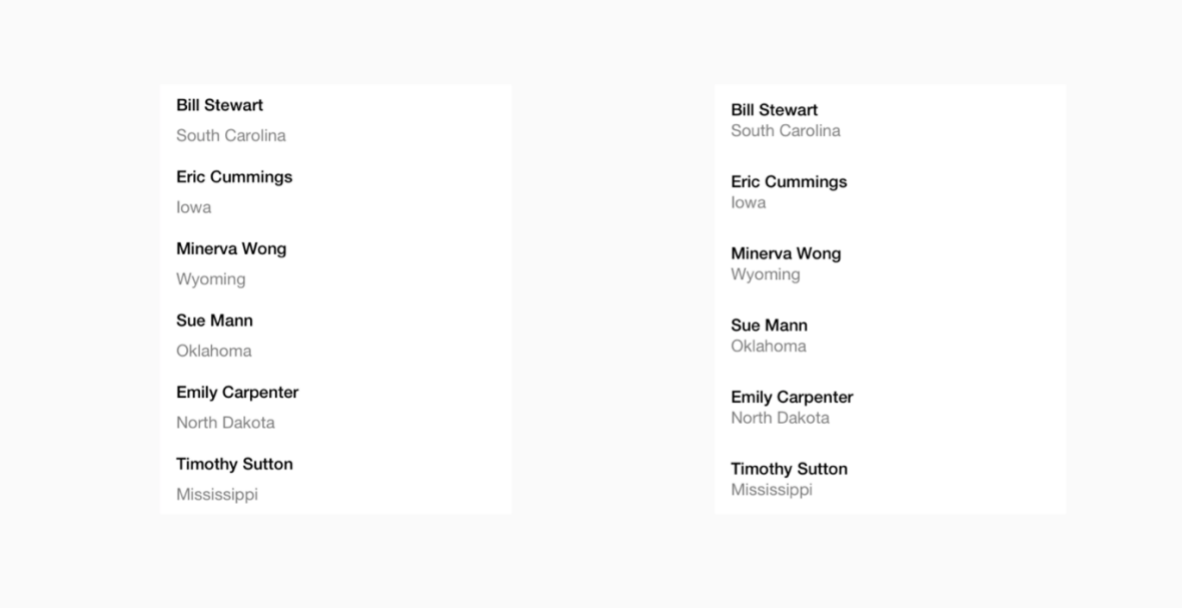


Figure 1: The example of Proximity. (2018). Gestalt Principles Applied to UX Design. Retrieved from https://blog.prototypr.io/gestalt-principles-applied-to-ux-design-af47bcf4bd28.

2. Closure

The law of closure (Figure 2) introduces that if people's visual perception sense that the object is incomplete, their brain will be filling out the missing part of the object and still perceived it as an entire object (Karen & Mercedes, 1999). Sarah (2013) noted that "Previous experience with the figure or form facilitates our natural tendency to perceive an incomplete or partially hidden object as the same object that's stored in our memory." She took the circle drawn with broken lines as an example; even the line does not connect, our brain will automatically overlook the gap between the broken lines and see the "curly broken lines" as one circle.

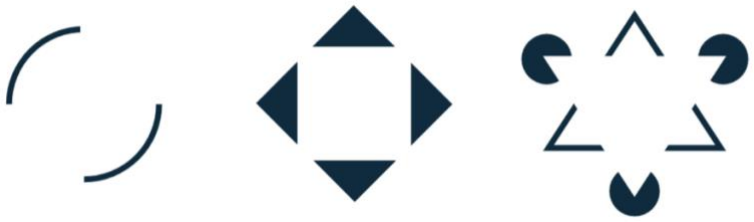


Figure 2: The example of Closure. (2018). Gestalt Principles in UI Design. Retrieved from https://medium.muz.li/gestalt-principles-in-ui-design-6b75a41e9965.

3. Similarity

Unlike the principle of proximity where the distance between objects is a decisive factor, the law of similarity (Figure 3) introduces that some individual objects will be perceived as a part of a group if they are similar in terms of their colour, shape, and order. The primary purpose of the similarity is to classify and organise objects with a group and giving these objects a function or meaning. Designers sometimes can leverage 'anomaly' to highlight the importance of the section. With regards to the user interface design, Dempsey et al. (2007) noted that "With haptic perception, it is also possible to group similar shapes, forces, surface textures, weights and vibration."

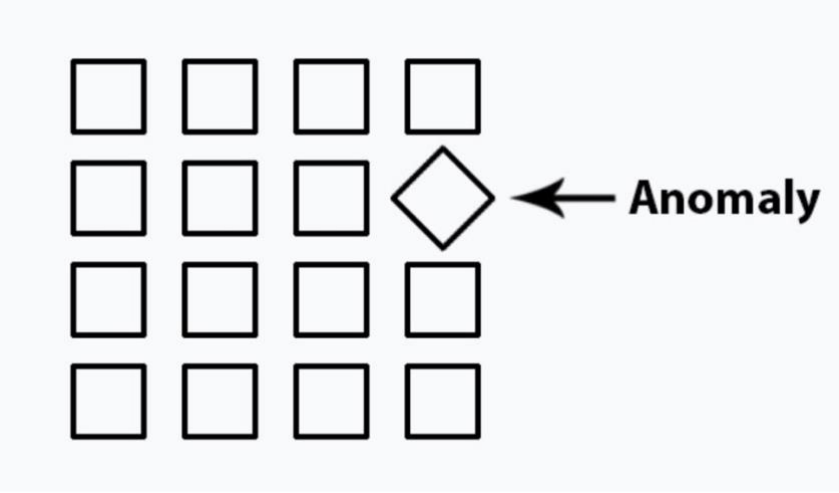
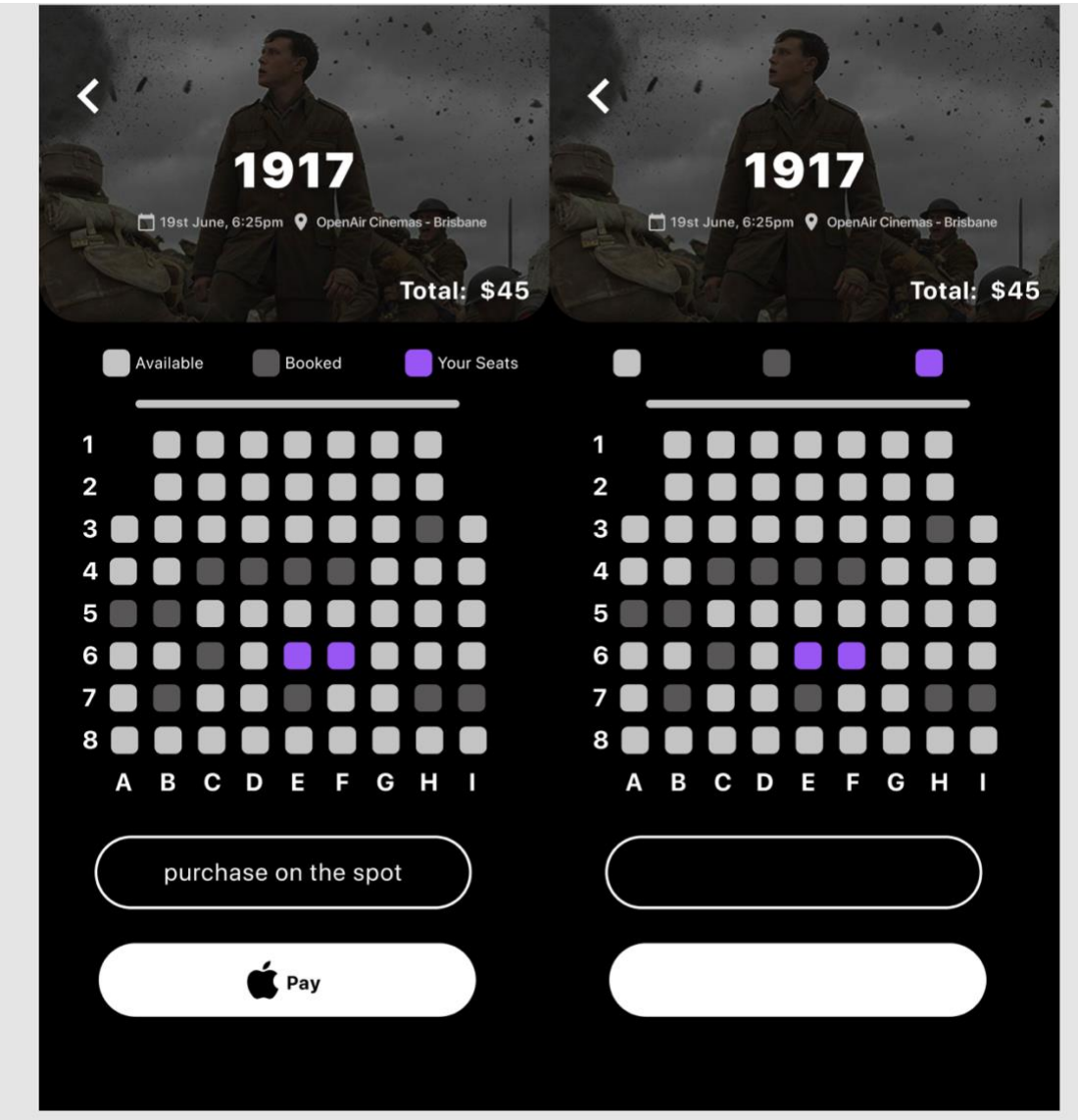


Figure 3: The example of Similarity and Anomaly. (n.d.). Gestalt Principles in Graphic and Web Design. Retrieved from https://naldzgraphics.net/gestalt-principles-graphic-web-design/.

Case Study

The prototype I am designing is a movie-booking application, and there are some principles I implemented into my designed prototype. To show the importance of the Gestalt theory and not be hinted by the words, I also provide a non-text version of the prototype to make the comparison. And they are the following:

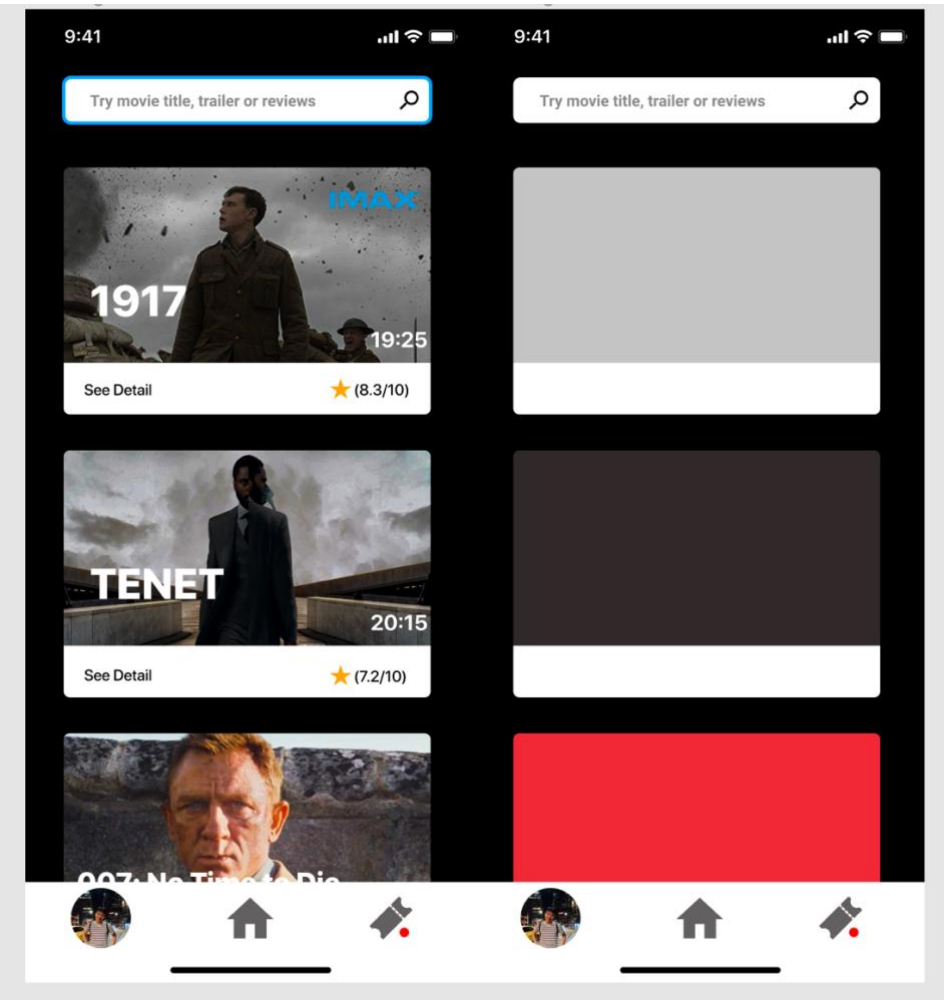


In the seat selection provided above, the movie information shows the concept of proximity. Since the time and the location is placed closely, the user can know they are categorised with one group. What is more, as the whitespace between the movie title and the timetable is different from the location with the timetable, users can know they are a different group.

The law of similarity is used since the actual seats in movie theatres usually close together. Designers can leverage the real-world layout of the seat to design the seat layout on an interface digitally. Also, the power of ‘anomaly’ is used to distinguish the different meaning of the seat in this prototype; the purple square shows that the seats are selected by the user, and the

dark grey square represents that the seats are taken by others. Even though their purposes are different; however, users still recognise the full seats as a group since their shape are the same.

Similarly, the pay buttons have also used the concept of similarity though they have a different meaning of the function. Even if the texts and the background colour are removed, users are likely to perceive them as a group due to the identical shape.



The image above is the main page of my designed prototype. The movie card section shows the combination of closure and similarity. Although the last card is not shown completely, individuals may know that it is likely to be as the same with the above cards. The card also shows the advantage of using the law of closure as a design technique since people may naturally notice that there will be a lot of “movie cards” at the bottom. Thus, this user experience design gives the convenience to the users that they can simply swipe down to get more movie details. As mentioned above, this card design shows the principle of similarity as well. Even though the cards have different movie title, rating, and timetable, and they are all navigated to the different

section; however, people still regard these cards as a group since they are all designed rectangularly.

Critical Analysis

Even though the Gestalt principles have provided an excellent visual perception; nevertheless, there are some limitations I found during the time I was designing the prototype. As the image below, the first limitation that needs to be considered is that there is no specific rule of spacing when implementing the law of proximity. If the designers do not place the objects close enough to make the users perceive them as a group, then users may be misunderstood the meaning of the groups and combining the objects to a wrong group.

Throughout addressing the potential issue of spacing, I have looked through some mobile application to see how designers solve this problem. One possible solution is to add a line to differentiate the section. As figure 4 shown, the designers of the app used a grey line to

distinguish the different explanation of words. It not only remains the principle of proximity as each of the section has a line, but also provides an approachable layout for the users.

Figure 4: Dictionary & Translator. (2020). *Bravolol Limited* (22.7) [Mobile app]. App Store. Retrieved from https://apps.apple.com/us/app/dictionary-translator/id475211454.

The second potential issue is that how people can recognise the figures as a group if they do not have previous background or memory. Figure 5 is a perfect example of the law of emergence from the Gestalt theory. Though figure 5 is composed of many irregular figures; people can associate that there is an outline of a dog and a tree in the image due to their past experience.

Figure 5: The example of the emergence. (2014). What is Gestalt? Retrieved from https://www.stemlynsblog.org/gestalt-st-emlyns/.

Perception is subjective, it varies a number of factors (Rune, 2017). Even though most people may have experience or memories with a specific object, e.g., the dog in figure 5; however, designers should be carefully aware of using the emergence since not every person can relate to a particular figure when they do not have the background. This may cause confusion for some individuals when they are browsing the content.

References

1. Ann, C. (n.d.). *Gestalt Principles in Graphic and Web Design*. Naldz Graphics. https://naldzgraphics.net/gestalt-principles-graphic-web-design/

2. Carley, S. (2014, November 9). *What is Gestalt? St.Emlyn's • St Emlyn's*. St.Emlyn's. https://www.stemlynsblog.org/gestalt-st-emlyns/

3. Chang, D., & Nesbitt, K. V. (2006, April). Developing Gestalt-based design guidelines for multi-sensory displays. In *Proceedings of the 2005 NICTA-HCSNet Multimodal User Interaction Workshop-Volume 57* (pp. 9-16). Australian Computer Society, Inc.

4. Chang, D., Nesbitt, K. V., & Wilkins, K. (2007, March). The Gestalt principle of continuation applies to both the haptic and visual grouping of elements. In *Second Joint EuroHaptics Conference and Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems (WHC'07)* (pp. 15-20). IEEE.

5. *Dictionary & Translator*. (2020). App Store; Bravolol Limited. https://apps.apple.com/us/app/dictionary-translator/id475211454

6. Eleana Gkogka. (2018, January 16). *Gestalt principles in UI design.* Medium; Muzli - Design Inspiration. https://medium.muz.li/gestalt-principles-in-ui-design-6b75a41e9965

7. Flieder, K., & Mödritscher, F. (2006, April). Foundations of a pattern language based on Gestalt principles. In *CHI'06 extended abstracts on Human factors in computing systems* (pp. 773-778).

8. Graham, L. (2008). Gestalt theory in interactive media design. *Journal of Humanities & Social Sciences*, *2*(1).

9. Jackson, I. (2008). Gestalt-A Learning Theory for Graphic Design Education. *International Journal of Art & Design Education*, *27*(1), 63-69.

10. Kobourov, S. G., Mchedlidze, T., & Vonessen, L. (2015, September). Gestalt principles in graph drawing. In *International Symposium on Graph Drawing* (pp. 558-560). Springer, Cham.

11. Lugo, J. E., Batill, S. M., & Carlson, L. (2012, August). Modeling product form preference using Gestalt principles, semantic space, and Kansei. In *ASME 2012 International Design*

Engineering Technical Conferences and Computers and Information in Engineering Conference (pp. 529-539). American Society of Mechanical Engineers Digital Collection.

12. Pettersson, R. (2017). Gestalt Principles. *Information Design: Research and Practice*, 425.

13. Sincero, S. (2019). *Gestalt Laws: Similarity, Proximity and Closure*. Explorable. https://explorable.com/gestalt-laws-similarity-proximity-and-closure

14. Smith-Gratto, K., & Fisher, M. M. (1999). Gestalt theory: a foundation for instructional screen design. *Journal of Educational Technology Systems*, *27*(4), 361-371.

15. Wheeler, H. (2018, May 18). *Gestalt Principles Applied to UX Design - Prototypr*. Medium; Prototypr. https://blog.prototypr.io/gestalt-principles-applied-to-ux-design-af47bcf4bd28