

Student Name: Hannah Evans

Student Number: 2003618

Programme of Study: Product and furniture design

Module: ADAD5004 Research in Practice

Word Count: 2259

Tutor Name: Julia Lockheart

Three Keywords: Function, Emotion and Longevity

Within this research paper, I will be exploring three key words that reflect my pursuit within my field of study. The three key words I will be researching into are **function**, **emotion**, and **longevity** within product and furniture design. I will be looking at how designers use these key words to create and challenge design parameters. Through this, I will attempt to link all three words, which will lead to an end question to guide me through my independent research paper.

Function

The word function was derived from the French noun *fonction*; “one’s proper work or purpose; power of acting in a specific proper way” (www.etymonline.com, n.d.). Therefore, to assign a function to an object is to have a specific practical use of the object. For an object to be functional it must be in relation to the user. This is apparent in furniture design as the designer usually places a high priority on function when ideating and developing a product.



Fig 1

We saw functionality emerge through the modernist movement by the ideology of “form follows function” coined by Louis H Sullivan (1896, as cited in Stream 02, 2012). This proposes that modern furniture is built to serve a specific purpose, which in essence foreshadows style. Michael Thonet played an essential role in the development of the modernist movement through his invention of bentwood furniture. As seen in *figure 1*, the model 1 rocking chair shows the iconic bentwood design. The design is sinuous and fluid but retains the functions of a standard rocking chair.

A rocking chair gives the user control of back-and-forth movement and relies on weight and motion of the user, the chair's shape, and the centre of gravity of the user and the chair to function properly. The function is seen as a symbiotic relationship between user and rocker (James Christopher Postell, 2012, p.164). This function allows the user to feel more engaged with the product and creates an almost partnership between designer and consumer.



Fig 2

Functionality is an important factor for Universal Design (UD). Accessible, usable, and inclusive are the characteristics of any UD product or environment (Burgstahler, 2015). This principle requires designers to ideate products that function effectively for every user without any adaptations. For people with disabilities and struggles, the design industry does not possess the satisfactory knowledge

to meet their needs. As a designer, addressing user needs is crucial to producing products with fulfilling functions. This is a challenge as many products are already being sold and do not meet these requirements to function properly for the user. It may be the case of designing an additional feature for a product instead of creating a new product altogether. This can be specialised for different types of disabilities. Electricity, for instance, eliminates activities requiring fine hand control, thereby including people with reduced hand function (Sangelkar, Cowen and McAdams, 2012).

Amanda Gillies displays the furniture from *Global* in figure 2 as following Universal design principles (2020). We can see a table that can adapt heights, which is suitable for various wheelchairs. This is a great example of improving functions for a specialised disability through design. But it poses the question; will furniture in the future be functional for everyone without any added adaptations? For function may entail a sense of emotion as a relationship is developed through the user.

Emotion

Don Hockenbury and Sandra E. Hockenbury argue in *Discovering Psychology* that an emotion is composed of three distinct components: a subjective experience, a physiological reaction, and an expressive or behavioural response (2007, as cited in Cherry, 2021).

Subjective experience is based on having mixed emotions. We may feel simultaneously excited and nervous about a situation or object, hence being subjective. Physiological reactions are a psychical response to the emotional feelings; nervous belly. Behavioural responses are the ability to put body language in line with emotions; smiling as a sign of happiness. Ultimately, these emotional interactions connect with the pragmatic and semantic properties of product design.

Products can induce a range of different emotions. This could be positive or negative. A user may find a product difficult to use, which would navigate to negative feelings. Positive emotions may occur when the user feels comfortable using the product. As far as behavioural impact is concerned, these positive and negative emotions have fundamentally distinct effects: positive emotions drive individuals to accept or approach the object of their emotion, whilst negative emotions stimulate individuals to reject or retreat from the object of their emotion (Frijda, Kuipers, & Schure, 1989). This is relevant to furniture design as the designer wants to generate a positive fulfilment from the user, thus stimulating emotions through interacting with the product. Through this interaction, the emotions play a role in improving the desirability towards the product. Maintaining a positive reaction to the product will have a positive effect on the design process.

Scherer considered emotion to be aesthetic; "Aesthetic emotions are produced by the appreciation of the intrinsic qualities of the beauty of nature, or the qualities of a work of art or an artistic performance (2005). This would mean that users would expect more than functionality to a product, but to seek quality through form. People's feelings about products are inclined to be influenced by the external features. This could include size, shape, colour, and texture.

Many designers (Papanek, 1995) consider roundness or curvilinearity as a feeling of warmth to users due to its free organic form. We see the free-flowing curves as sympathetic to the human body, mind and spirit (Pearson, 2001). This natural form could be seen as comforting and give an overall positive reaction from the user. Dazkir and Read promote this theory by signifying that designing settings with curvilinear shapes promotes feelings of happiness, calmness, and relaxation (2011). In coherence with this, a study conducted by Bar and Neta indicated that people would pay more attention to an object with a sharp appearance because they would instinctively feel anxious or endangered (2007). This implies that an angle or form of a product can alter emotions just by the initial look. It also shows that we can change our feelings about a product by correlating it to another without an incline of

association. We see sharp as dangerous but not all sharp objects are used with a threatening intent.

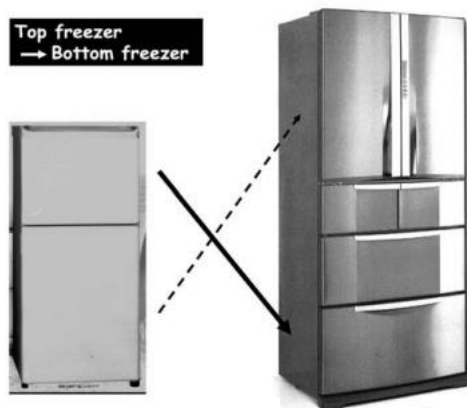


Fig 3

A method that is widely used by many designers is *kansei engineering*.

Kansei engineering (founded by Mitsuo Nagamachi, 1974) works to create products by channelling the feelings and needs of customers into the area of the project. The process starts with an observation of a consumer's behaviour, then uses psychological scaling to capture their emotion and attachment, and then analyses the

emotions using multiple statistical studies to lead to product design requirements (Nawaratne, 2020). A successful use of this process was made by Nagamachi himself when his help was requested by the company *Sharp* (1978) to design a new type of refrigerator. With this, he insisted that the design team use the *Kansei engineering* method. Nagamachi made the decision to watch and record how a housewife utilises a two-door refrigerator on a daily basis. He put together a team of six female designers and used a video to watch the residences. Nagamachi examined the film and discovered that the bottom door opening and shutting accounted for 80% of all doors opening and closing. Most of the time, it was for vegetables and other ingredients that were going to be cooked right away. In summary, the housewife was always leaning down to access the bottom door to take out food, according to the findings of this investigation. Working mothers were usually in a difficult posture but did not complain about it, therefore the engineer and designer tasked to examine the emotional element required to pay attention to the bending and stretching posture, even if the consumers did not complain about it. We can see in figure 3 the improved refrigerator with effective and considered doors. To make customers even happier, a study of what they keep in the refrigerator was conducted, and a method was developed to allow customers to adjust the temperature associated with each food's storage section (C R C P R E S S, 2015). This investigation not only guaranteed a practical fridge that was functional for the user, but they ensured that the emotional effects of the user were taken into consideration while designing.

Longevity

The word longevity is used to describe a products lifetime, but it is debatable whether this is appropriate for products these days. With fast fashion and the online shopping demand increasing, products are being replaced much faster than ever. Obsolescence and the throwaway society actively contribute to this shift, as companies profit from a culture in which product lifetimes are shortened (Jensen, P.B., Laursen, L.N. and Haase, L.M. 2021).

There are many different forms of obsolescence. Relative obsolescence happens when items are replaced for reasons other than their functionality. This could be when a user no longer finds a product appealing or when new items with better

characteristics become available. Absolute obsolescence occurs when a product can no longer execute its tasks physically (Anders, 2019). Louis Cheskin suggests that psychological obsolescence is a symptom of our times related to the prevalence of "boredom, lack of self-expression, absence of free and truly friendly communication between neighbours and friends, and a general lack of rational values." (Longmans, 1961). These different examples of obsolescence all result in a short lifetime of products. Nevertheless, we cannot take blame for a decrease in lifespan of products as not everything is built to last. We cannot expect products to live forever or to supersede us because they are fundamentally not made to do so. This is because many suppliers and designers ideate products for now and leave innovation for the back burner.

Mugge and Bakker indicate that extending the lifespan of products relies on the consumer not the designer. The consumer needs to want the circular choice and the motivation to repair instead of buying new (2018). Unfortunately, much of today's society now has the expectation of everything being given to them with no repercussions. With environmental impacts becoming a bigger discussion globally, perhaps people will be more aware of reusing products. If longevity of products increases, we would see less in waste lands, thus improving the future for the better. On the other hand, this could have a negative effect on scale of the number of products designed and manufactured which would significantly impact that whole sector of the economy. However, this downside in manufacturing and designing less products could be combatted in a more competitive market where the products chosen are of a higher standard and therefore more money would be spent on competing and creating more valuable products instead of cheaper. In this case it could be for suppliers and designers to think - how can we develop products that consumers want to use for longer?

There are a few types of products that are single use, which puts an end to longevity foremost. This includes products such as tampons and pads. We would not see nor seek motivation to keep these products for longer, but it may be an indication to improve them for a longer lifespan. There are other options that are reusable, but they do not seem to be a popular choice among women. This could be because a lot of people are unaware of such products and the promotion is not evident enough.

Conclusion

The three words I chose, *function*, *emotion* and *longevity* all have relevant ties to product and furniture design. All three words have ties to each other, and we can see links throughout the research.

We see that function effects emotions when a product has a specific purpose for the user, e.g support for a disability. Likewise, products like phones and computers have an emotional relationship with users as they are a way of keeping us connected to others.

These types of relationships cause the products to provide signals to the user that are significant to them. This could be emotions that recall personal memories. This would evoke emotional attachments to such products and users would be hesitant of throwing them away, thus linking emotions and longevity.

Longevity and function are tied by usage. Would you throw away a product that is useful to you? If a product is used regularly and helps with day to day life, the user

would be uncertain about throwing it away. On the other hand, Jonathan Chapman describes the “honeymoon period” between a user and a product as “the passionate early stages of a subject-object relationship” (2005). This indicates the initial reaction of emotion that a user feels towards a product and that these emotions are short lived. He almost describes this relationship as a one-night stand and something to remember and not to keep. The relationship fades and the product will be replaced and thrown away.

By deconstructing the three words, I have shown different ideas and explored aspects that have challenged and created designs. I have investigated designers and how they have used methods to ideate products that link my chosen words. In conclusion, this research paper has given me an opportunity to progress to my independent study inquiry. Throughout I have questioned each part, but this has led me to a final question: **What effect does people's emotional attachment to a product have on its longevity and life?**

With further investigating and research, I will be able to respond and explore it through an independent inquest.

Reference list

Anders Haug (2019) Psychologically Durable Design – Definitions and Approaches, *The Design Journal*, 22:2, 143-167, DOI: 10.1080/14606925.2019.1569316

Bar, M. and Neta, M. (2007) ‘Visual elements of subjective preference modulate amygdala activation’, *Neuropsychologia*, 45(10), pp. 2191–2200.
doi:10.1016/j.neuropsychologia.2007.03.008.

Burgstahler, S. (2015). *Universal Design: Process, Principles, and Applications | DO-IT*. [online] Washington.edu. Available at: <https://www.washington.edu/doit/universal-design-process-principles-and-applications>.

Chapman, Jonathan. 2005 *Emotionally Durable Design* 1st ed. London: Earthscan

Cherry, K. (2021). *Emotions and Types of Emotional Responses*. [online] Verywell Mind. Available at: <https://www.verywellmind.com/what-are-emotions-2795178#citation-1>.

C R C P R E S S (2015). *Kansei Innovation: Practical Design Applications for Product and Service Development A sampler*. [online] Available at:

https://www.routledge.com/rsc/downloads/9781498706827_FULL_low.pdf [Accessed 28 Apr. 2022].

Dazkir, S.S. and Read, M.A. (2011). Furniture Forms and Their Influence on Our Emotional Responses Toward Interior Environments. *Environment and Behavior*, [online] 44(5), pp.722–732. doi:10.1177/0013916511402063.

Frijda, N.H., Kuipers, P. and ter Schure, E. (1989) 'Relations Among Emotion, Appraisal, and Emotional Action Readiness', *Journal of personality and social psychology*, 57(2), pp. 212–228. doi:10.1037/0022-3514.57.2.212.

James Christopher Postell (2012). *Furniture design*. [online] Hoboken, New Jersey: John Wiley & Sons, Inc, p.164. Available at:
https://books.google.co.uk/books?hl=en&lr=&id=kBG-hNk4s34C&oi=fnd&pg=PR13&dq=furniture+and+function&ots=eSA6RND8NJ&sig=vQYPAz1Z-jcnWCqGdnJua7rpbY8&redir_esc=y#v=onepage&q=function&f=false [Accessed 19 Apr. 2022].

Jensen, P.B., Laursen, L.N. and Haase, L.M. (2021) 'Barriers to product longevity: A review of business, product development and user perspectives', *Journal of cleaner production*, 313, p. 127951–. doi:10.1016/j.jclepro.2021.127951.

Longmans, V. (1961). *The Waste Makers*. [online] Lowe & Brydone. Available at:
<https://www.soilandhealth.org/wp-content/uploads/0303critic/030320wastemakers/wastemakers.pdf>.

Mugge, R. and Bakker, C. (2018). Product Lifetimes and the Environment (PLATE) – A Human-Centred Approach to Designing for Product Lifetimes. *The Design Journal*, 21(4), pp.447–450. doi:10.1080/14606925.2018.1468521.

Nagamachi, Mitsuo. "History of kansei engineering and application of artificial intelligence." *International Conference on Applied Human Factors and Ergonomics*. Springer, Cham, 2017.

Nawaratne, R. (2020). *Human-centric Product Design with Kansei Engineering and Artificial Intelligence*. [online] Medium. Available at:

<https://towardsdatascience.com/human-centric-product-design-with-kansei-engineering-and-artificial-intelligence-f38cb3c0f26d>.

Pearson, D. (2001). *New organic architecture: The breaking wave*. Berkeley: University of California P.8.

Posledni, E. 1997, "Function drives furniture design", *Fdm*, vol. 69, no. 1, pp. 36-45.

Sangelkar, S., Cowen, N. and McAdams, D. (2012). User activity – product function association based design rules for universal products. *Design Studies*, 33(1), pp.85–110. doi:10.1016/j.destud.2011.06.002.

Scherer, K.R. (2005). What are emotions? And how can they be measured? *Social Science Information*, 44(4), pp.695–729. doi:10.1177/0539018405058216.

Stream 02 (2012). *The tall office building artistically considered • Articles*. [online] www.pca-stream.com. Available at: <https://www.pca-stream.com/en/articles/the-tall-office-building-artistically-considered-48>.

www.etymonline.com. (n.d.). *function | Etymology, origin and meaning of function by etymonline*. [online] Available at: <https://www.etymonline.com/word/function> [Accessed 20 Apr. 2022].

Figures

Figure 1: Thonet, G. (1904) Rocking chair, c.1904 (bentwood & cane).

Figure 2: Gillies, A. (2020). *4 Furniture Pieces that Follow the Universal Design Principles*. [online] www.linkedin.com. Available at: https://www.linkedin.com/pulse/4-furniture-products-follow-universal-design-amanda-gillies?trk=public_profile_article_view [Accessed 25 Apr. 2022].

Figure 3: Nagamachi, M. (2008) 'Perspectives and the new trend of Kansei affective engineering', *TQM journal*, 20(4), pp. 290–298. doi:10.1108/17542730810881285.