

ADDA6006 Independent Inquiry/Extended Essay

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Word Count: 5496

Human-Artefact Bonds

When I drive on a motorway through the landscape, I look around and I think about how could we possibly, as a species, have achieved all this man-made materials and artefacts that I will see once again when I drive into a village, town or a city. The road, my car, the stuff I have with me for the journey, clothes I have on me and the radio I listen to, seem so alien to the surrounding made up of trees, rocks and soil. How could have we created our man-made world from this natural environment? I owe at the human capacity to convert natural materials into complex ones, and later artefacts that serve us in our daily life. Is it now possible to live without man-made items? We are in such intimate bond with the products of industry and human craft, without even being aware, and we begin to notice our reliance on them once deprived of them. We, humans, at least most of mankind, have become so connected to the products we make. We need them or want them for our comfort and even survival. Are these human – artefact bonds based just on mere usability or are they something more? Are we emotionally attached to artefacts? How strong are these bonds, and what do they nurture on? In this paper, I would like to explore human - artefact connections. The intimate bonds that pull us towards things (objects) we manufacture.

Before we start exploring our subject matter, I shall clarify terms that are related to our topic, and used in this paper throughout. An artefact, according to Oxford Learners Dictionary is "an object that is made by a person, especially something of historical or cultural interest" and this is a widely accepted term among other dictionaries (Collins, Macmillian). Synonyms of artefact include: item, thing, article, object. The term artefact is often routed to its cultural and historical value, however, in this paper the aforementioned synonyms, devoid of such connection to culture will serve as my definition of artefact and will include physical objects that are of man-made origin – handmade or mass-produced.

A 'bond' is a "connection between people or groups (or object), such as a feeling of friendship or shared ideas and experiences". Synonyms of bond include: connection, attachment, link, and these terms will be used interchangeably. The bonds I will explore will often be called emotional i. e. "connected with or appealing to people's feelings or emotions" (Oxford Learner Dictionary)

Endowment effect

One of the examples, when a person gets attached to an object is the endowment effect. This term proved to be robust for over 40 years, and functions in behavioural economics and marketing alike. It tells us that a consumer values their possessions more, once they take ownership of an object (Shu and Peck, 2001). This phenomenon has been studied and numerous experiments have been conducted.

In one Endowment effect experiment by Jack Knetsch in 1989, participants in one group were offered two items, roughly half chose large chocolate bars, and the other half - coffee mugs. The other study group was arbitrarily given the two items randomly, again, around half of the participants received a mug, and the other half – chocolate. When the participants from the second group (that arbitrarily received an item) were given an option to swap an item for the other one, only about 10% of participants proceeded. The result was similar despite which of the two items the participants were initially given (Brown et al., 2015). This demonstrates consumer's attachment to whatever item they had been given and unwillingness to trade it. In his earlier studies, on the endowment effect, Knetsch demonstrated that a person is very likely to offer a lower price for an item that they wish to purchase, than the price they are likely to accept for the same object, when they already own it and asked to sell it. In simple terms, we value the same items that we already own more than when we do not own them. It is believed that endowment effect major cause is loss aversion which in turn is caused by emotional attachment and cognitive perspective. In order to experience loss aversion our brains need to label the trade as a loss, so it is deeply connected with ownership and this ownership does not have to be legal but psychological (perceived) ownership is enough to feel the experience of loss (Shu and Peck, 2001). Psychological ownership can be asserted with the words 'this is mine' as identified by Pierce, Kostova, and Dirks, researchers on psychological ownership. To take things further, members can feel psychological ownership of the organization they belong to (Pierce, Kostova and Dirks, 2003).

Endowment effect – case study

Student participants were in two groups, and transactions they were to undertake would be with real money. An inexpensive pen was to be traded. The group labelled as sellers, could either keep the pen they were given or sell it, while the other group – choosers, could offer a price to buy such a pen. Like in the case above a 'willingness to pay' and 'willingness to accept (the price)' are markers that are used in endowment effect studies. This study has found a greater willingness to accept prices in the sellers' group, by a large margin, than the willingness to pay by the group of choosers. These findings are in agreement with the explanation for loss aversion and emotional attachment and show that an endowed object value is perceived to be higher with psychological ownership (Shu and Peck, 2001).

The length of ownership and endowment effect.

In a study by Strahilevitz and Loewenstein, researchers were to determine the influence of the history of owning the items and how it affects a person's attachment with an object. As postulated, the longer we own an item, the more we feel attached to it – our valuation of an object is increased with a longer history of psychological ownership. This study has demonstrated that a group of sellers sold a given object, on average, at a lower price, as compared to the same object when the length of ownership was longer (average minimum selling price of \$1.71 and \$2.34, respectively) (Strahilevitz and Loewenstein, 1998).

Trading memorabilia.

In the study of 2003 by John List, we find that when adopting a role of memorabilia trader. A seller, depending on the role which could be of a novice or an experienced trader has a different attitude towards an object of the trade. Their psychological ownership is felt less strongly with assuming a role of a proficient trader and willingness to trade is higher than when a participant is playing the role of inexperienced seller (List, 2003).

The influence of emotions

In the study of 2004 by Learner the researchers have used short video clips to induce three emotions before testing the willingness to trade and the price. Participants were to feel sad, disgust or non-affected by an unrelated event. As a result, the feeling of sadness led to a price increase that the group of choosers were willing to pay whereas it reduced the asking price among the participants of the seller group. The above results demonstrate a reversal of the endowment effect, that is, the choosers (buyers) valued the object higher than the sellers. The disgust also showed similar findings that lie against the theory of endowment effect, here however the difference in asking price and acceptance price differed less. Emotions experienced by the participants played a role in the valuation of an object, effectively changing the attitude from neutral stance (Learner, Small and Loewenstein, 2004).

Why do we value the items we own, more? Is the endowment effect real phenomenon?

Plott and Zeiler postulate a different reason behind the price difference [known as Willingness to pay (WTP) and willingness to accept (WTA) gap]. This WTP and WTA gap is a difference between the price that a particular person would ask to trade an object and price, themselves, would spend on the same object. Some researchers ascribe this difference to so-called loss aversion, and the perception that the loss is greater when selling an item (hence a higher asking price) than the potential gain from when buying it. The researchers have pointed out that not all (although majority) studies have demonstrated the existence of WTP-WTA gap and the results may be derived from faulty experiment methods and misconceptions. Plott and Zeiler have employed a set of additional measures to ensure a truthful outcome. The sellers evaluated the items first, were given instructions on how to properly evaluate them, taking into account nuances. Participants were also given time to practice as well as, to familiarise themselves with the outcomes of their actions, they practiced with real cash. The experiment was anonymous. The findings of the experiment, were that no WTP-WTA gap was found.

The endowment effect is closely related to mere ownership effect. To clarify the two terms: mere ownership effect is when we value an object more because we own it, whereas the endowment effect is characterized by WTP-WTA gap that is when sellers ask higher prices than buyer would like to pay for the same object (Plott and Zeiler, 2005)

In both cases, there seems to be an emotional connection with an object of the trade, whether it is being traded or imagined value is ascribed to the object. Some studies have shown that pairing an object with oneself is enough to elicit higher evaluation, when positive self-associations are drawn from an object this value increases in contrast with an object that is not owned (Collard et al., 2020).

Psychological ownership

With psychological ownership, we tend to value our possessions higher just because they are ours. Observing real life I see other examples when these cognitive biases show. Whatever object we own, being it something inexpensive such as a pen or something of great value, we look after those things better than when they belong to others or the public. Would we vandalize our houses with graffiti as some do to someone else's property? Would we care about a disposable pen as much if we were just using it briefly to fill out a form in a bank? These affections towards objects can be subtle or profound and can be related to function as well as the experience we have with an object. It is lesser a loss if we lose an object that is causing our frustration when we use it. We also tend to keep some products longer and rid of

others, more readily. We dispose of durable items that no longer serve us. This could be due to obsolescence, or simply we need or want something better that the ever-changing market offers (Schifferstein and Zwartkruis-Pelgrim, 2008). By keeping products for longer we reduce our negative impact on the environment. The more we are attached to the things we own the longer the product life cycle will be (Brezet, Diehl and Silvester, 2001). We look after items we feel attached to, we service and hang onto them for longer, delaying the purchase of new ones. Every one of us has such products in our homes. What is it you hang on to? It is a car you like the look of, a lamp that gave you numerous hours of light when on a long evening you read books? I also have such items. I have an mp3 player that I kept for 13-14 years. It's battered up, but it functions. The evolution of technology did not render it useless. We still use mp3 format extensively. Many of us will prefer to use our phones that they keep handy at all times. For me, I like its compact size and physical buttons that I can use without taking the device out of my pocket.

The consumer-product attachment scale study

"The consumer-product attachment" as defined by Schifferstein Zwartkruis-Pelgrim is an emotional bond with a durable item. In some circumstances, people keep products even when they stop functioning properly (Schifferstein and Zwartkruis-Pelgrim, 2008). That, of course, may differ depending on the object, its size, or the consumer's ability to procure a similar object as a replacement. One is more likely to keep a vintage watch or coo-coo clock than an inexpensive wall clock, as the functional product in the latter case is more desirable to own. Irreplaceability plays a role in emotional attachment and the feeling of product uniqueness, for products that are purchased on a special occasion such as a trip or purchase during an event. This could be the strongest reason for attachment to a specimen, because a person becomes the owner of it under special circumstances, forming a relationship that does not exist with other similar objects. However, when a product is believed to be indispensable, it is its functionality that matters the most, not the emotional attachment. We can get emotionally attached to objects whether they perform a function well or not.

There is a debate whether owning an item is to maintain one's self-extension equals attachment or is related to it, but not the same (Schifferstein and Zwartkruis-Pelgrim, 2008). Objects may be viewed as self-extension if they play a significant role in someone's self-expression or a job. A sportsperson may be attached to their favourite pair of shoes, carpenter to his chisels, and an artist to their brusher and paints. Without those objects, such professionals may feel incomplete and the appreciation for the tools is both utilitarian and emotional.

Researchers have noticed that we own certain objects to create our identity, our unique self (Dwayne Ball and Tasaki, 1992; Wallendorf and Arnould, 1988).

These objects define who we are and what identity we wish to project onto the world around us. Greenwald differentiates four aspects of the self. The diffuse self is a hedonistic beast, hence the attachment is formed towards products that the self enjoys viscerally and takes pleasures from. With the private self, a product should reflect our goals, uniqueness, independence. In the group of products that are related to our public self, we can find all those that support our connections with the groups we belong to, our family, friends, and community circles. This facet of our persona thrives on approval from those groups. Objects may include gifts and rewards from figures significant to us (Greenwald, 1988)

The last one - *the collective self* seeks group approval. Items here may be the symbols of an idea, life philosophy, and other abstract objects that connect self with the group, being it minority, subculture, nation, and other (Greenwald, 1988).

Emotion in design

Donald Norman in his book 'emotional design' distinguishes three different design intents: visceral, behavioural, and reflective, so design and its products may be seen as simple gratification to the senses or serving a higher need to be involved with cultural contexts. Norman points out e.g. the role of emotion in the graphic design of numerous bottled water brands, to attract potential buyers (Norman, 2005). Water bottle brands cater to all the possible users, they understand the market. Some water bottle companies own dozen if not hundreds of different water brands, within a country and internationally. Whatever emotional message may appeal to the consumer, is used to sell the product. You can find various sizes of water bottles, label graphic designs. Water for children, for sportsmen, glass bottles, plastic bottles, ergonomic bottles. The same applies to wine bottles, that may even be kept as ornament long after the wine has been emptied. This design strategy is intended to dig into your visceral, most basic form of seeking pleasure and delight. It prompts: 'I must buy it', 'I want to own it' reactions. The reflective side of emotion may also be targeted. Memories can evoke strong emotions. If you purchase expensive alcohol and keep the bottle as a reminder of the experience you had with the object. We are naturally drawn to pretty objects this design intent seduces us into play with the product, with which later we become emotionally attached, through use, memories, derived pleasure, or aesthetic delight.

Visceral design.

The most basic response, the visceral, is what nature equipped us with. We are connected with the world around us with the powerful, yet, working behind our conscious mind, signal decoding system. It is automatic, we do not have to think. We buy products 'on a whim' later to find out, at home, that it may not be our style. We may want to change something instinctively but our conscious mind will step in later. For things like water bottles, we will not experience buyer's remorse, it is a disposable product. What kind of water bottles are you drawn to? We men are attracted to the opposite sex (for the most part) and even look for positive qualities in same-sex fellow, and vice versa. The qualities that may serve our survival as species such as the ability to bear children, physical prowess, or apt intellect. When we are drawn to pretty things, this is our visceral response. In the world of design we may use fancy words such as aesthetics, styling, form and on a visceral level, we know that when things are pretty, they are likely to sell. We will use bright colours to make things fun if we want to appeal to young consumers. Children respond to visceral stimuli more readily than adults, who make decisions more logical. Decisions that lie in tandem with 'the selves' described in the earlier chapter. Adults have learned to look at things on a more reflective level, and fight our hard-wired preferences to subject themselves to the visceral response. With the design, that aims to flatter the reflective side of 'the self', today's 'wow' product may appear old-fashioned tomorrow. Visceral stimuli, however, appeal to the senses, not logic. Clean aesthetics, sexy and elegant form makes the design attractive and pays off in the market. Next time you pick a water bottle or dream of your next car, think about what it attracts you to it. Are you reasoning on a reflective level or a visceral one? Market research strategy, in the

traditional sense, involves presenting the product to the audience and observing their reactions. The most immediate reactions such as “I want it”, “I don’t like it” are visceral responses. It is sometimes, that the cheap beautifying like changing colour may do the trick and increase sales. Design appealing to visceral level has to be attractive in shape and form (Norman, 2005). Studies have been conducted that prove that we humans see roundness as beautiful in architecture and sculpture alike. This applies to both, men and women. Neuroscientists put forward the thesis that this preference for roundness is connected with our evolved instinct to prefer organic forms that can be found among living organisms: and these can be seen as food, danger (predators), or mating partners.

“Shallow convex surface curvature is characteristic of living organisms, because it is naturally produced by the fluid pressure of healthy tissue (e.g. muscle) against outer membranes (e.g. skin).” (Gambino, 2013)

In visceral response, quality of materials, their look, tactile feeling – all play a part. The object has to appeal to the senses - attractive to the eye, pleasurable to the touch. So the better it exudes sensuality and sexual appeal. Even if the functionality of the product is welcome, if it does not appeal to visceral criteria it will largely fail in the market. Customers will find other products with similar functionality, that titillate their visceral sense of organic beauty.

Design functionality.

While some product we buy because of their appearance, majority of our purchases is about the function and use of the product. Good functionality is paramount to a successful product. On the web, we can find numerous websites and videos showing tests of all sorts of products focusing on functionality. Don Norman’s second design intent is a behavioural design that is about the function, not aesthetics. This aspect of design we focus on the most when buying. Purchase decisions are not immediate. How does it work? Does it perform the listed functions as intended? The world is full of designed goods, and we evaluate the functionality of potential purchases with a (limited) understanding of the need and how well the product can fulfil the need. A well-functioning product, however, may miss the mark, because the user does not understand their need well, or is not aware of the recent advancements in satisfying or solving his need or problem. Good designers attempt to understand how their product will be used. Some problems arise from improper use of products, that can only be solved through innovation such as new technology, not through an improvement. Accidental erasing of music from a tape cassette is not a fault of a product and with the advent of CDs, this issue is no longer relevant, however, problems like scratches on the disk may be a new inconvenience. Behavioural design is a complex issue. It is much harder to appeal to this level of design and trigger positive emotions. The user may experience negative emotions such as anger, or frustration if he or she feels that the product is not performing as expected. Limited understanding of a complex product may result in the product ‘living its own life’ out of control (Norman, 2005). This is true for sophisticated products. Other products, however, are easy to operate but take a lot of time to master or even use properly. Take, for example, musical instruments, they require that we devote volumes of time to learn to play them. Everyday products, however, should be simple to use. We do not read manuals, we think we are smart enough to figure things out. A well-designed item gives you clues on how to use it. This could be through affordances, previous experience with similar products, or other widely accepted conventions employed, such as colour codes. Excellent behavioural designers watch how

people use their products, understand they we are all different, short and tall, young or old, with various motoric skill abilities. Products that put the user at the forefront, their needs, ergonomics are the successful ones. Hand and power tools, sports accessories, e.g. are some of the items that would fail miserably and even put human health in danger if they were designed without a deep understanding of their usability, from the concept generation.

Reflective design.

Now let us discuss the last of the trio – reflective design. It is about our self-image, prestige, and symbolism of owning a product. A self-image that we keep in our mind, whether it is someone we are, pretend to be, we guard it and strive to project a coherent image of ourselves to the outside. We buy or do things because it agrees with this self-image, we make statements with our purchase behaviour. The reflective design selling point is not functionality. Deep emotions, almost transcendental, are often associated with products in this category. In this category, we will find luxury items: watches, high fashion, designer sunglasses, fancy cars; products that elevate our status. We attach to them emotionally, as they support our sense of who we are as seen by ourselves and how we wish to be seen by others. Fashion industry, luxury goods companies, proud themselves to be the manufactures of emotions, fulfillers of our dreams, not just mere products.

At one time or another we all lust after such emotion-provoking items. We want new phones, cars, watches, that pair of sports shoes that everyone is talking about. We believe that our life will positively change once we own these products. The value of a product is seen through a reflective process, its lack in one department may be compensated with the strength in other. Is it an item that you proudly sport, brag before your friends, or would like to be seen with among strangers? Reflective design ties the customer with the company that makes it. Companies may take responsibility for servicing, providing positive reinforcement, to already present emotional attachment. The company, through its image-making and marketing tactics, is responsible for maintaining a positive consumer -product association.

Veblen goods

Luxury goods may gain popularity, and generate prestige enhancing features by the effect called the Veblen effect. According to economist and sociologist Thorstein Veblen, wealthy consumers are willing to pay higher prices for conspicuous goods due to the prestige and status-enhancing properties of those items. The Veblen effect stands in contradiction to the well-known law of demand (Chenavaz and Eynan, 2021).

Brand attachment.

Similarly, through positive associations and emotional attachment to the product, we can get attached to the brand itself. This positive attitude towards brands happens when the image of the company and customer self-image are congruent. Consumers buy specific goods such as cars, watches, fashion clothes to express themselves through the possession and use of these products. Brands that aspire to innovate or to 'sell' a favourable high lifestyle are seen as more suitable than others, that may be viewed as average, although they still may have a 'character' that is sought after (Kressmann et al., 2006).

Brands are motivated by the research findings that consumer satisfaction and loyalty have a direct impact on brands' income (Park et al., 2010).

Essentially all products are made to serve us in one way or another. Some of them however are made to make us healthier, more beautiful, elegant, prestigious. Companies know that

products that impact our self-image are especially adept at creating customer attachment. Brands that do not fit perfectly with consumer self-image but rather ideal self-image are still favourably looked at, as a representation of consumer aspirations.

It has been put forward that customers may find it comforting to be loyal to a brand that shares a similar self-image (Aaker, 1999). There are two sides of this self-image – real and ideal which is an imaginary set of concepts and pursuits of what one would aspire to be.

Consumers can forge an emotional relationship with the brands that share either of these self-image aspects. The emotional brand connection and the two aspects of self-image are mediated by three factors. Product involvement is not immanent in the product but rather experienced by the user and the level of this interaction is also specific to the individual user. Self-esteem mediator is when we use products that are coherent with the self-image aspects. Public self-awareness is how others will see us, what image of us are they likely to conjure up, depending on the brand we associate ourselves with.

To publicly self-conscious people, we assume that this variable will moderate the relationship between the type of self-congruence and emotional brand attachment (Malär et al., 2011).

Researchers have found that brand attachment depends on whether products are of utilitarian or hedonic value. Hedonic brands with high product involvement score high on the consumer – brand attachment while utilitarian brands – with low product involvement (Sheeraz et al., 2018).

Hoarding disorder

On the extreme side of object attachment lies hoarding disorder. It is characterized by a persistent inability to discard objects one owns. Objects get piled up and people affected by this condition live in cluttered spaces. Things that are most likely to be desired as keepers are clothes and paper items such as magazines or books (Mataix-Cols, 2014). Compulsive hoarders explain their attachment to objects that have a treasured value to them and these are often, emotional and sentimental connection, appreciation to object's aesthetic values or simply they do not like the idea of creating unnecessary waste, through disposal. Ridding of one's belongings is a stressful situation for people affected by the condition. In extreme cases, such accumulation of objects poses other hazards to an individual - social exclusion, sanitary problems, and risk of being trapped under piles of objects that can collapse. Surveys have indicated that the problem of hoarding affects from 2 to 6 % of the adult population, and usually starts early in life, and develops as the person gets older, with occasional fluctuations of severity. What makes people become compulsive accumulators? The scientists are not sure of the answer. Hoarding disorder may develop after a traumatic experience and is not linked to material deprivation (Mataix-Cols, 2014). According to Keefer (Keefer et al., 2012) Object attachment in its extreme examples may be the individual's way to offset the lack of interpersonal connection. Emotional attachment to objects is, however, present throughout our entire life. We all have our favourite items, like a pair of shoes, trousers or a pen. We appreciate them for different reasons – it may be our lucky one or we have memories associated with the use or ownership of these items. Perhaps, it is this lucky t-shirt you had on you when you met your lifelong partner or your favourite sports team won a long-awaited medal. As we get older, the sentimental value of our belongings may increase. The longer we have a positive association, the stronger the emotional bond is forged (Dozier and Ayers, 2021). Objects may bear the signs of use, develop imperfections or faults, but we still look at them through the lens of our experience with them.

Life circumstances, like inheriting possessions make us face a difficult choice – to keep, sell, or discard items that belonged to someone we love. Sentimental attachment and feeling of the presence of loved ones that passed away, may not be a definite reason to keep things. We may still dispose of or donate items because we lack space to keep things or we would rather distance ourselves from a painful memory of someone's death. Widowed partners often retain things like the wedding ring or photos as keepsakes. They are a form of connection with a lost partner, emotional attachment with an object that symbolizes someone who has been a source of countless emotions. This is powerful attachment through objects, and losing these memorable objects would be like losing memories, like the betrayal of a partner, and causes grief (Dozier and Ayers, 2021).

Summary

We humans have an intimate relationship with artefacts. We need them from our birth, we depend on them, we take pleasure from owning or using them, our survival depends on them. Our emotional attachment can be forged through a number of mechanisms and have various implications. With the endowment effect and mere ownership phenomenon we get emotionally attached with products and due to loss aversion are unwilling to trade them for a fair price. This bond makes us value the products higher than the supply-demand model would predict. Experiencing unrelated emotions may also change our valuation of trade items. Interestingly, we get emotionally attached to objects we do not own yet. Examples of it may be observed when e.g. we bid on an online auction site or purchasing items that we have had the intent to procure for a period of time. Psychological ownership can have a positive impact on how we take care of items. This caring attitude, however, does not always spill onto public property. Emotional attachment can be with products that we view as irreplaceable (uniqueness) or indispensable (value through functionality). We bond with specific items that are our self-expression. The four 'selves' identified earlier as diffuse, private, public, and collective cling emotionally to products that lie in congruence with the sense of our identity, that we project onto the surrounding. We emotionally connect with brands and their products that support our self-image. The ideal or real self-image of one selves and brand's identity needs to match. We form our unique selves by surrounding ourselves with products and brands. A bond with such a brand or product is like reconnecting with oneself.

Three types of design intent as proposed by Norman: visceral, behavioural, and reflective create a human-product bond through targeting different areas of our needs. The most primitive – pleasure, need for functional objects or for of expressing oneself by showing the connection to culture and sophistication of taste.

Companies are looking to boost their sales by employing tricks, such as minimalistic design, colour choice, releasing limited edition products. Researchers, using surveys and experiments try to figure out how to design in order to reduce the impact on the environment. Stronger product- consumer bond equals less waste.

Sentimental value is another reason why we hang on to objects for longer. We store forever things like wedding rings or photos of loved ones, and the older we become, the more we are sentimental about possessions we have or one had. Hoarding disorder is an extreme example of attachment with objects. Can we imagine our life without all the products around and the multitude of functions they fulfill?

Our lives are inseparably connected with the material world. The functional needs as well as self-expression make us fall emotionally with our possessions. The bond is strong and with the increased dependence on technology and social crises, we are likely keep indulging

ourself in the emotional connections with the products of our hands; products that elevate our civilisation and egos.

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