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## Can Refurbished Products Feel Like Antiques? The Role of the Neo-retro Design Style on Consumers' Evaluation of Refurbished Products

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**Keywords:** Refurbishment; Neo-retro Design Style; Antiques; Consumer Response; Circular Economy.

**Abstract:** This research explores a new pathway to improve consumer acceptance of refurbished products that is inspired by the positive evocations of other used products, such as antique products. Currently, the prior use and age of refurbished products make them a less desirable option because they are perceived to be of lower quality, to have a reduced performance and to be out of fashion more quickly than new products. In contrast, antiques are associated with durability, uniqueness and timelessness despite their prior use and considerable age. In 21 in-depth interviews with consumers, we compared refurbished products with antiques and explored whether refurbished products with a design style evoking the past – the neo-retro style – can lead to more positive associations than refurbished products with a prototypical design style. Our findings provided preliminary support for the value of a neo-retro design style for improving consumers' evaluations of refurbished products. Refurbished products and antiques differ in age, technology and the purpose of having them. Antiques have an emotional value and are kept because of the story and historic values, the appearance and/or durability; refurbished products are kept for purely functional reasons. Similar to antiques, refurbished products following a neo-retro design style do not only evoke more positive associations with old products, such as feelings of nostalgia but can also decrease risks associated with refurbished products as they are perceived to be of higher quality and more durable than refurbished products following a prototypical design style.

### Introduction

Refurbished products are second-hand products that were recollected after their first use, subsequently tested and restored into an acceptable state before they are resold (Pigosso et al., 2010). Even though refurbished products are already on the market, they have not yet become a popular consumer choice. Prior research indicates that refurbished products are often perceived as being old, used, and having reduced performance (van Weelden, Mugge, & Bakker, 2016). Although environmental and financial benefits, as well as warranties, offer *rational* reasons to buy refurbished products (Sharma et al., 2016; van Weelden et al., 2016), these incentives are not sufficient for many consumers.

While prior research has identified reasons why consumers do not buy refurbished products, research on how to improve the negative perceptions of refurbished products

is sparse (Mugge, 2017). We aim to contribute to the current literature by exploring a new pathway to improve consumer acceptance of refurbished products that is inspired by the positive associations of other used products – antique products. In particular, we explore whether refurbished products with a design style evoking the past – the neo-retro style – can lead to similar positive associations as antiques. Designing the first version of a product in a neo-retro style could potentially create an opportunity for designers to enhance consumer acceptance of future refurbished products by giving consumers additional benefits, such as associating products with a story, high durability and having a timeless design.

Currently, the prior use and age of refurbished products make them undesirable because they are perceived to be a riskier choice than new products (Hamzaoui Essoussi & Linton, 2010; 2014; Harms & Linton, 2015; Michaud &

Llerena, 2011; Debo, Toktay, & Van Wassenhove, 2005). Participants perceive them to break down more quickly, to have reduced performance and to be out of fashion more quickly than new products (van Weelden et al., 2016). Wear and tear signs, signalling prior use, negatively influence consumers' evaluation as well (Mugge et al., 2018). Furthermore, prior use can evoke associations of contamination, the "aversion that one has towards engaging with used objects" (Baxter et al., 2016, p. 2181).

Antiques are, in contrast, products from an earlier period that are considered valuable because they are beautiful, rare, old, and of high quality (Cambridge University Press, 2008; Zolfagharian, & Cortes, 2011). Even though antique products have been used by multiple consumers and look old, most people have little negative associations with them and show positive affective responses (Grayson & Martinec, 2004; Baker, 2012). Antiques evoke feelings of nostalgia, are valuable, and are associated with high durability, a rich history and symbolic meaning.

To evoke positive historic associations with new products, designers can use a neo-retro design style. According to Brown (2001), neo-retro products are technologically up-to-date but show significant design characteristics from the past that evoke feelings of nostalgia (Figure 1). For example, the neo-retro radio Figure 1 has an old wooden frame which antique radios often have, but the display indicates that the radio is modern. We

## Method

### *Participants and Procedure*

The principal investigator visited participants ( $N=21$ ) at home to conduct audio-recorded semi-structured interviews. All participants were selected from a university-based research panel. The interviews took place at participants' homes, which enabled participants to show and discuss their refurbished and antique products.

The participants were first interviewed on their initial perceptions towards refurbished products. Second, they were shown 18 stimuli pictures of products belonging to three product categories (coffeemakers, headphones, and radios) that varied in their design style (neo-retro, minimalistic and prototypical). We explained that these products were refurbished, after which participants were asked questions about their perceptions of these products. We compared refurbished products following a neo-retro style to prototypical and minimalistic ones to assess differences between the neo-retro style and other design styles. All stimuli were selected based on a pretest to evaluate their design style. Fifty-four designers and design students (2-34 years of design experience,  $M=7.34$  years, 52% female) rated 45 images of the product categories coffee makers, headphones and radios (see appendix for selected stimuli). The participants rated the degree to which the stimuli show design characteristics that are neo-retro, minimalistic, or prototypical of the product category on a 7-



Figure 1. Example stimuli in neo-retro (left) and prototypical (right) design styles.

investigate if embodying refurbished products in a neo-retro design style can transfer some of the positive associations of antiques to refurbished products and thereby improve consumer evaluations.

point scale (1 = completely disagree; 7 = completely agree).

Last, we explored the difference between refurbished products and antiques with themes, such as "Some people think that in antiques, there are some positive qualities, do you see similar positive qualities in refurbished products as well? ".

Participants received a small compensation (10 euros voucher) for their participation.

### *Data processing*

All interviews were audio-recorded and transcribed by the principal investigator. Subsequently, the transcriptions were analyzed. Codes emerged during two coding rounds, which were inductive. The first five interviews were analyzed in a collaborative session of all authors, which resulted in 144 codes. The remaining 16 interviews were analyzed by the principal investigator and resulted in a total number of 259 codes in the second coding round. The first-order codes were discussed in the research team, adapted and summarized into 88 second-order codes that were sorted into 29 themes (see Table 1 for an example theme). These first- and second-order codes and themes were discussed and agreed upon by the full research team.

Theme	Second-order code	First-order code
Differences in wear- and tear between refurbished products and antiques	Wear- and tear can be acceptable or even desirable in antiques	Antiques need to have wear- and tear signs
		Small functional defects are nice for antiques (squeaking wheel)
		Signs of repair make antiques more desirable

**Table 1. Coding structure.**

## **Results**

### *Differences between antiques and refurbished products*

Refurbished products differ in age, technology and purpose.

Furthermore, refurbished products are generally not associated with a story and a historic value because they are younger and more modern than antiques. Additionally, the story of refurbished products is often unknown, while for antiques, it is not. Antiques were also described as being timeless because they are

beautiful even though they are old. This is not the case for refurbished products.

Wear and tear in refurbished products were seen as more negative compared to antiques. While in antiques wear and tear signs were expected or even desired, wear and tear signs in refurbished products were tolerated but not desirable. The prior use of refurbished products is associated with a reduced quality and performance rather than making the product more unique and alive as described in antiques.

### *Role of the neo-retro design style in the evaluation of refurbished products*

The design style can determine whether people choose, keep and care about their refurbished products as stated by one of our participants. With respect to the effects of different design styles, our findings provided preliminary support for the value of a neo-retro design style for improving consumers' evaluations of refurbished products.

Neo-retro products evoke associations with old products in terms of looks and usability. Several participants mentioned that neo-retro products reminded them of antiques, Artdeco, vintage or old products.

Participant 12: *"I think it is an unconscious choice, but I would choose (coffee machine) 1 or 2 because they have an antique appearance and with that comes some sort of eternal value."*

Others said that neo-retro products could appear inauthentic.

Participant 11: *"Radio 13 and 14 are products that look old, but they are actually not. That's a bit fake."*

Participants also expected neo-retro products to have old functional features, such as mechanistic buttons or wheels and preferred the old-fashioned wheels to newer ones. For example, in the neo-retro radios 9 and 10, participants expected the wheels to make squeaking sounds or to be rickety.

Participant 6: *"Yes, 9 and 10. We had such a radio in the past. My association with is that the wheel is squeaking. It appears to be old. It could be really modern from the*

*inside, but you cannot see this from the outside.'*

Neo-retro products reminded people of the 'good old times' and evoked feelings of nostalgia. Multiple participants said that the neo-retro coffee machines 1 and 2 evoked nostalgic feelings about the American sixties (coffee machine 1) or an Italian espresso bar (coffee machine 2).

Participant 10: *'I would choose this one (coffee machine 2) because I've always liked this one. It's not a real argument, more a form of nostalgia. It reminds me of my vacation in Italy before they used these espresso machines here in the Netherlands.'*

While some participants said that the feelings of nostalgia also determined participants' product choice for the neo-retro products, others said that nostalgia was good but that the quality of the object was still more important. Neo-retro products looked more durable, solid, robust and reminded them of the good quality of the past. The quality of the past was said to be decreased if wear and tear signs would be present on the object but wear-and-tear was more acceptable in neo-retro products than on products following a prototypical design style. The quality of the neo-retro product also made participants trust and care for it.

Participant 8: *'I think that the quality is more or less the same for all products but that (coffee maker) 1 and 2 are better than number 5 because they (1 and 2) are classic models like they were built in the past. In the past, everything was built so that it would last for as long as possible. At the moment for just 3 years because otherwise, they don't earn enough money anymore. So, I think that 1 and 2 could be more durable.'*

Some participants said that products following a neo-retro style evoke associations with the products having a story.

Participant 14: *'I think that some refurbished products have a story. Not all, of course. [...]. It depends on your own interpretation. (coffee machine) 1, really has a story, and the other ones don't have that at all. I think it is an unconscious choice. A so-called unconscious choice that is probably related to my memories. The weird thing is that I have no memories of it because I had not been born in that time yet.'*

Other participants, however, said that the design of the product did not make them believe that the product had a story.

Participants said that neo-retro products, because of their old appearance, looked unique, prominent, extravagant, beautiful and more attractive than other products. Neo-retro products were also described as more charming. One participant also said that making the product look old gives the refurbished product an extra value because its appearance is more attractive. Participants like the use of wood in radio 9 and thought that the metallic parts of headphone 6 and coffee maker 1 and 2 made the products more robust.

Participant 2: *'It looks like an old-fashioned radio (radio 9). And that wooden cover, not plastic. I think that is just more beautiful. That is the reason why I would choose that one.'*

Plastic was described to be less desirable than wood and aluminium and to become dirty quickly. Metal and brushed aluminium were deemed desirable because of two reasons: First of all, because metal products were perceived to be more repairable than plastic products and it was easier to determine whether products are in a good state. Wood was associated with warm feelings and the product having a story.



	<b>Antiques</b>	<b>Prototypical refurbished</b>	<b>Neo-retro refurbished</b>
Story	Have a story which is related to prior life of the product.	The story of refurbished products is unknown and not considered interesting.	Neo-retro products are more likely to have a story.
Historic value	Antiques have an historic value because they are from another time and design style.	Refurbished products do not have a special historic value yet.	Neo-retro products remind people of the past (e.g. 50s and 60s).
Emotional value	Antiques have an emotional value even if not used anymore. They also have a high financial value.	Value is determined by functionality of product and not by an emotional value.	Neo-retro products have more emotional value because they evoke memories and feelings of nostalgia.
Quality	Associations with high quality of the past.	Associations with lower performance and quality. The high quality of refurbished products is essential.	Neo-retro products are perceived to be more durable and evoke associations of the quality of the past similar to antiques.
Wear and tear	Wear and tear signs are acceptable or even desired in antique products.	Refurbished products should not have wear and tear.	Wear and tear signs are more acceptable on neo-retro because of the use of wood and metal.
Unique design	Antiques have a special design because of their design period and because they are rare.	Most refurbished products do not have a special design because they are still in mass production.	Neo-retro products were described as unique, prominent, extravagant, and beautiful.
Timelessness	Antiques are from a prior period but still considered beautiful.	Refurbished products are often perceived to be out of fashion in the near future.	Neo-retro products are described as being timeless.

**Table 2. Differences between Antiques, prototypical refurbished products, and neo-retro products.**

Participants also mentioned that neo-retro products could have a timeless design because the neo-retro design style is less vulnerable to trends.

Participant 4: *'I think I would choose number 6 (to be beautiful for the longest time) because it just seems more timeless.'*

## Discussion

This research explores how refurbished products and antiques differ and whether the positive associations that people have of antiques can be translated into the design of refurbished products, in particular, by employing a neo-retro design style.

While refurbished products and antiques generally differ in use, age and durability, a neo-retro design can potentially have a

positive influence on people's perception of refurbished products. While the prior use in antique products is usually seen as something positive because of the historic value, uniqueness and high quality of antiques (Grayson & Martinec, 2004; Baker, 2012), the prior use of refurbished products is seen as negative (Mugge et al., 2018); refurbished products are often perceived to have a lower quality and durability than new products (Michaud & Llerena, 2011; Debo et al., 2005). Prior research has demonstrated that new products following the retro design style remind people of old products and can evoke feelings of nostalgia (Brown, 2001). Our findings indicated that refurbished products in the neo-retro design style do not only evoke positive associations with old products, such as feelings of nostalgia but can also decrease risks associated with refurbished products. Refurbished products following a neo-retro

design style are perceived to be of high quality and more durable than those following a prototypical design style. Creating refurbished products with a neo-retro design style could potentially increase the consumer acceptance of refurbished products.

Even though refurbished products in the neo-retro design style evoke positive associations with antiques, the neo-retro design style is not everyone's cup of tea and may not be a good strategy to enhance the consumer acceptance for all consumer groups. Mugge et al. (2017) demonstrated that different consumer groups have different consumer preferences for design styles. Hence, it is necessary to provide refurbished products that are desirable for different consumer groups.

Whether designing a product in a neo-retro style is a good design strategy to enhance the consumer acceptance of refurbished products is also a question of the product category of the refurbished product. Product categories that are not highly technological, such as coffee machines and water kettles could benefit from the positive effects of the neo-retro design style. For products that are continuously advancing in terms of technology, making a product look old might not be beneficial.

However, for products that are circulating among multiple users, such as in sharing systems, the neo-retro design style might not be a good strategy if the product is only accessed briefly for functional reasons (Tunn et al., 2019). Other design styles could offer similar benefits as it is not sensitive to fashion cycles (Mugge et al., 2005) and need to be subject to future research.

Future research needs to be conducted to translate and further validate our findings into design guidelines for designers. Additionally, it needs to be explored what makes some neo-retro products attractive whereas others are considered inauthentic and which design characteristics of neo-retro products evoke the desired associations with antiques; is it the choice of materials, the form or design characteristics of the past?

Potential other ways to stimulate affective reactions towards refurbished products next to design styles should also be addressed in future research.

A limitation of our research is that we did not investigate choice settings in which participants compared refurbished neo-retro products with new ones. In real life, this is the

choice that consumers make in a purchase setting.

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## Appendices



1		
Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
6.47	2.67	4.33



2		
Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
6.13	2.67	4.20



3		
Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
4.40	3.93	4.60



4		
Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
2.67	3.35	4.40



5

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
6.0	3.14	3.86



6

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
5.93	1.64	2.93



7

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
3.29	4.79	5.57



8

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
2.79	3.64	4.14



9

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
6.15	4.0	5.38



10

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
5.62	4.00	5.38



11

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
3.23	2.62	5.23



12

Neo-retro MEAN	Minimalistic MEAN	Prototypical MEAN
3.86	3.36	4.86