SELECTING SUCCESFUL DESIGN: A WAY TO EXPLORE THE BEST FIT BETWEEN BRANDS AND TARGET GROUPS

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ABSTRACT
During the bachelor and master program of Industrial Design at the University of Twente students are taught to make well-informed decisions and draw well-founded conclusions. However, decision-making on appearance is often difficult to substantiate. Consequently, defining the final appearance of a product poses a challenge for students in the overall development process. Students tend to choose a design that they either expect to be most appreciated or just prefer themselves. Such strategies may not generate the intended results, as aesthetic preferences of the target group are essential in the selection of successful design [1]. Consumer choices on aesthetic preference are often influenced by emotional or social factors, as well as recognition of brands [2]. This paper provides an example on how Industrial Design students may overcome such design problems. Illustrated by a master assignment, the design of an ice skate boot, we propose a MAYA-based survey that provides insight in the target group and encourage well-informed decisions-making in design projects.

Keywords: Aesthetic preference, novelty, typicality, brand, MAYA.

1 INTRODUCTION

The physical form or visual appearance of a product plays an important role in consumer response and the decision of their purchase [1, 2]. However, defining the product appearance poses a challenge for product designers. Aesthetic preferences are highly variable and greatly influenced by social and emotional factors. Besides, the perception of other essential aspects, like functionality, usability and ergonomics, are largely determined by the physical form as well [1, 2]. Designers and product developers across all disciplines face the problem of creating and selecting designs that suit the target group. Not surprisingly, design students encounter similar pitfalls while defining the shapes and looks of a product.

During the bachelor and master programs Industrial Design Engineering at the University of Twente students learn to develop skills to overcome such problems. The study is based on project-oriented education; besides attending regular lectures, project participation plays a key role in the curricula. According to Ponsen & Ruijter [3], participation in practical projects, individually or in groups, encourages students to apply theoretical knowledge into practice, gain self-confidence and develop expertise in areas of personal preference. The University's slogan 'High tech, Human touch' is strongly applicable to the Industrial Design curriculum [4]; on the one hand, students are provided with the essential theoretical framework and taught how to find inspiration, sketch and draw, visualise ideas, and make prototypes ('high tech'). On the other hand, students are stimulated to explore the psychological aspect of industrial design in courses like philosophy, cognitive ergonomics and design and emotion ('Human touch').

Even though Industrial Design at the University of Twente offers a comprehensive study program and an excellent balance between humanities and technique, the integration of both worlds into the physical form of a product is challenging. The supply of methods to deal with the selection of successful designs and more important the justification of certain choices is limited. Students are of course stimulated to make well-informed decisions and to draw well-founded conclusions. However, decision-making on the aesthetic appearance of products is often difficult to substantiate. Since aesthetic preference is strongly associated with emotion, and various social factors that are hard to capture in figures, design choices can hardly be substantiated by scientific evidence, requirement

programs or functional prototypes. Consequently, students tend to choose a design that they either expect to be most appreciated or prefer themselves. This paper provides an example on how design students may overcome these challenges by means of a MAYA-based survey and may therefore provide useful insights for other Industrial Design students.

2 VIKING-CASE

The example put forth in this paper, the graduation assignment of master student Marleen Offringa, attending the Design and Styling master-track at the University of Twente, illustrates the importance of proper decision-making in design projects. Offringa designed an ice-skate boot for the brand Viking, a Dutch ice-skate brand, known internationally for its unique speed skates, including the first clap skate and its flagship product: the Gold 2005 skate boot (figure 1).

Figure 1. The Gold 2005

The master assignment involved the design of a successor for the Gold 2005. The assignment could be roughly divided into two main parts: (1) defining the functionality of the boot and (2) designing its visual appearance. Product, brand and target group analysis resulted in a list of functional requirements. This led to a functional design that was optimised by means of prototyping. Defining the appearance of the boot, however, acquired a different approach.

2.1 Design selection

Out of various idea sketches we aimed to find a selection of concept designs. These concept designs should best address the target group. In case of the Viking Gold 2005, the target group covers a heterogeneous group of customers, varying in age, gender and skating-experience. Since the Viking Gold 2005 entered the market already several years ago, Viking intended to introduce a successor with a fresh design. As we assumed the target group to be rather conservative and brand-loyal, it still seemed important to take into account the current styling of the Gold 2005.

The Industrial Design program has previously given insufficient attention to the incorporation of former designs in designing a successive product. This poses a challenge for design students, which are generally trained in progressive thinking and used to select a final design based on "gut feeling". In case of a conservative target group, this may strategy may not produce the intended results.

2.2 Maya

During the assignment, we discovered the usefulness of the MAYA-principle in selecting the right skate boot design for a conservative target group. The MAYA-principle, introduced by Raymond Loewy [5], holds that consumer-choices on styling are influenced by two opposing factors: (1) attraction to the new and (2) resistance to the unfamiliar. According to Loewy [5], successful designs are characterized by the right balance between novelty and familiarity (this balance is referred to as the MAYA-stage). A proper design should never exceed the so-called shock-zone [5], as resistance to the unfamiliar may cause most customers to reject the design. Loewy has not been the only one to correlate novelty to aesthetic preference. Berlyne [6] predicted an inverted U-shaped relation between aesthetic preference and arousal potential. Similarly, based on empirical evidence, researchers have found that a successful design requires an optimal balance between novelty and typicality [7-9]. We aimed to explore this optimal balance while designing our ice skate, thereby also taking into account the influence of the brand. Earlier research has shown that the effect of typicality and branding (i.e. brand typicality) are rather similar [10]. In other words, a brand may take care of the recognisability while the new design will evoke the novel experience.

2.3 Survey

In previous parts of the assignment emotions and subjective opinions of users were researched extensively. In the finishing part, the aim was to reach a larger group of users to be able to collect quantitative data for the selection of a final design. Therefore we decided to use the MAYA-principle while designing a survey for our target group. Hence, we aimed to find the optimal balance between novelty, (brand) typicality and aesthetic preferences. In order to achieve this objective, a group of 44 skaters executed an online survey. We expected the more conservative oriented target group to respond differently to our survey compared to other consumers, thereby illustrating the importance of including the target group in designing the product appearance. Therefore we decided to perform the survey with a control group as well. A number of 33 Industrial Design master students participated in the survey, simultaneously functioning as students and design experts.

We hypothesized that the target group would be attracted to relatively familiar designs, according Loewy's suggested link between novelty and aesthetic preference. On the contrary, design students were expected to be attracted to more novel designs. Moreover, we tested Loewy's hypothesis holding that people are generally attracted to 'most advanced yet acceptable' design [5]. In accordance with Loewy both the target and the control group were expected to prefer designs situated in the MAYA-stage. Moreover, we expected the target group to be more attracted to designs that are linked with the brand Viking. In order to test our hypothesis, participants were asked to rate eight potential designs in order of (1) novelty, (2) product familiarity, (3) brand familiarity, and (4) aesthetic preference in an online survey.

2.4 Selection of the designs

From a large number of sketches, eight concept designs were selected, see figure 2. By clustering, selecting and combining sketches, we aimed to create a combination of eight designs increasing in novelty (a number of eight designs appeared to be the most appropriate to divide the designs into the three MAYA-categories). The final selection consisted of two familiar designs, based on the Gold 2005 boot, two novel designs, inspired by modern sports shoes and fashion, and four intermediary designs. These four designs were assigned to the Maya-stage category, as this would allow us to visualize the difference between conservative (C and D) and progressive members (E and F) of both groups.
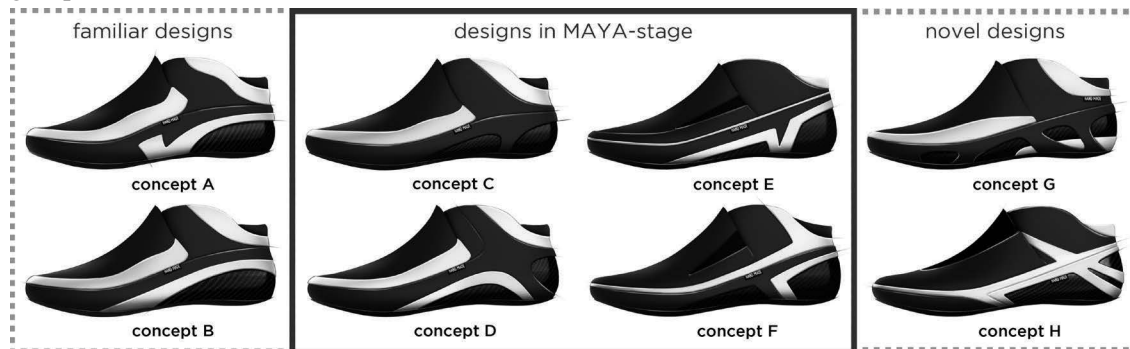

Figure 2. The eight selected design concepts (in order of increasing novelty).

Figure 2 shows the selected concepts in hypothetical order of novelty. In the online survey, designs were presented in random sequence. Similar in shape, functionality and settled materials, the designs intentionally differed only in lines, style and the use of certain ornaments. The decision to portray the designs in black and white was made consciously, as earlier research found that the influence of colour on aesthetic preference is substantial [11, 12], thereby potentially interfering with our results.

2.5 Results

2.5.1 Novelty

First, the proposed sequence (figure 2) of concepts by level of *novelty* was tested, see Figure 3. The height of the bars in the chart show the level of novelty, as rated by the participants. The numbers above the bars indicate the position of the design in the sequence (e.g. concept H was rated most novel by the skaters, concept B most familiar). In line with our expectations, there is a general agreement in

the high degree of novelty of design G and H. Similarly, both groups agree on a low level of novelty of designs B and C.
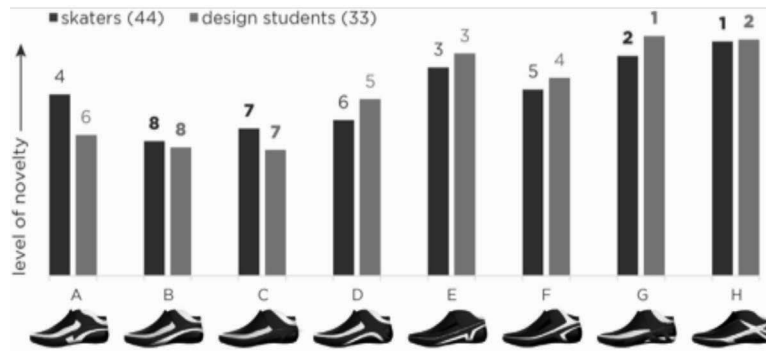

Figure 3. Level of novelty

Figure 4 and 5 display the concepts in order of novelty, according to the skaters and design students, respectively. The figures clearly show resemblance with the hypothetical order (figure 2), however, dissimilarities are visible as well. The design of concept A directly emerged from the design of the Gold 2005, only supplemented with a little detail to create a Viking-V in the striping. Therefore we expected the design to be most familiar, however, both the skaters and the students placed it in the middle-range of novelty.

Figure 4. The designs in order of increasing novelty, by the skaters

Figure 5. The designs in order of increasing novelty, by the design students

2.5.2 Aesthetic preference

The results of the survey on *aesthetic preference* are broadly in line with our expectations. Figure 6 shows that the target group prefers design C and D (the more conservative Maya designs), whereas design students prefer design E and F (the more progressive Maya designs).
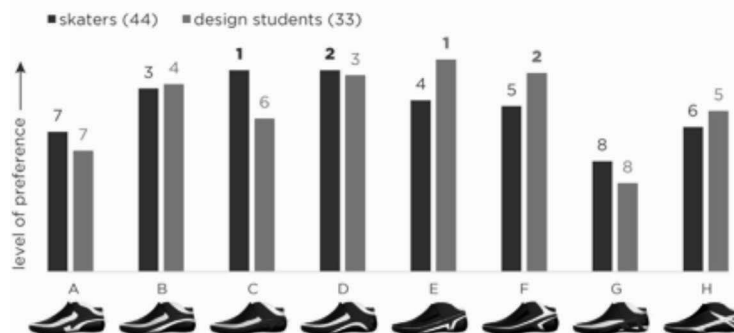

Figure 6. Level of aesthetic preference

2.5.3 Product typicality

In order to determine the extent to which the concepts meet the general perception of a skate boot, the participants were asked to rate the boots on *product typicality*. Both skaters and design students

recognized concept C, D and B as typical skate boot. E and F score relatively high as well, especially among the design students. Designs G and H were unanimously experienced as atypical skate boots.
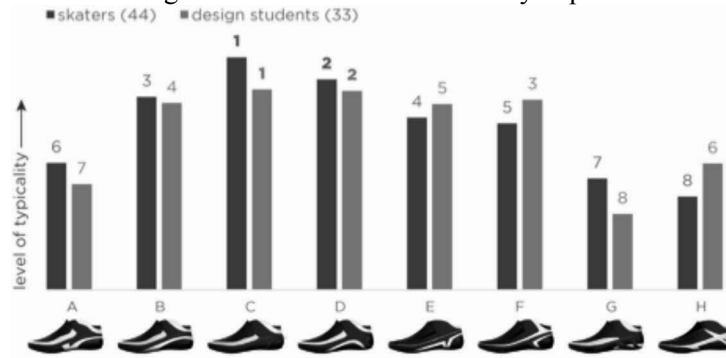

Figure 7. Level of product typicality

2.5.4 Brand typicality

In our case, *brand typicality* indicates the degree to which the concepts suit the brand Viking. The opinions of skaters and design student do not show much difference with regard to this aspect. It is interesting to see, however, that ranking the designs on product and brand typicality delivers almost the same results, as can be seen by comparing figures 7 and 8. However, concept A clearly scores higher on brand than product typicality, possibly caused by the Viking-V embedded in the design.
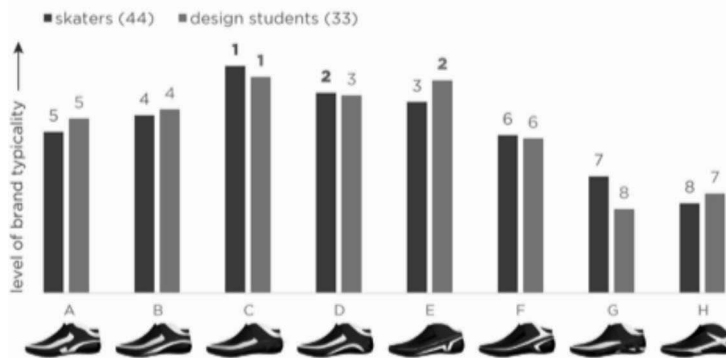

Figure 8. Level of brand typicality

In addition, the results show that the aesthetic preferences (figure 6) of the target group are in line with the designs they find recognisable as skate boot and that suit the brand. Figure 9 shows the concepts in order of brand typicality, according to the target group. The numbers below show the ranking in aesthetic preference of the target group. Concept C and D, the designs that score high on product and brand typicality, were rated number one and two on aesthetic preference by the skaters. The results are consistent with the hypothesis that the target group is attracted to designs linked to Viking, unlike the design students, which prefer the more novel designs E and F.
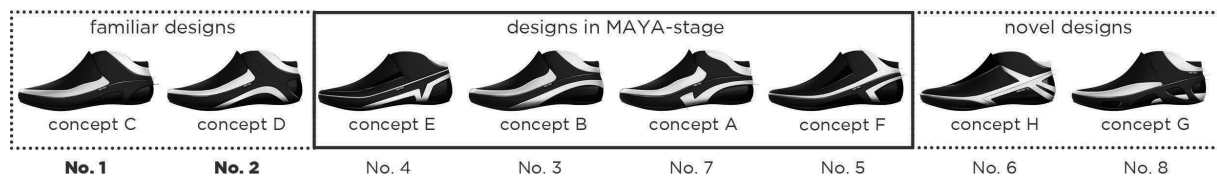

Figure 9. The designs in order of brand typicality, by the skaters

2.6 Conclusions from the survey

Even though our survey did not directly lead to one specific final design, the results did contribute to the creation of a combined final design. Taking into account our results, there are two possible strategies, extending the work of Loewy [5]. The more conservative MAYA strategy; the knowledge that skaters are attracted to more traditional design would suggest the choice for a relatively traditional final design (C or D). This strategy can reaffirm the validity of Viking's own norm, the Gold 2005. Or the more progressive MAYA strategy; when companies want to keep ahead of competitors they can

choose to widen the gap between current and successive products to establish a new and different norm (E and F).

We decided on a relatively novel final design based on the progressive strategy, with some traditional influences. As mentioned before Viking aimed to bring a fresh yet recognisable product to the market, since the Gold 2005 was introduced quite some years ago. Consequently, the final design of the boot is based on concept D, E and F. All three concepts can be found in the MAYA-stage, based on the 'novelty-ranking' of both the target group and the design students (figures 4 and 5). Concept D is the second best design in aesthetic preference for the skaters, right after the more traditional concept C. In addition, concept E and F score high on aesthetic preference as well. Despite their novel character, they are still recognisable as skate boot and apparently suit the brand. All together we could create a perfectly combined final design that is in line with the predefined goals (designing the successor with a fresh design), as well as the result of the survey (taking into account the aesthetic preference of the target group).

3 CONCLUSION

Even though applying a MAYA-based survey may not guarantee the most successful design, our study indicates that the principle may provide design students with a convenient tool to make well-informed decisions and to plan design strategies in brand-related design projects. Implementing the MAYA-principle into Industrial Design curricula may be a useful supplement to current education on aesthetic preference, novelty, and designing for specific brands or target groups. However, the acceptance of the principle may continue to be a tenuous and complex issue. Furthermore it is important to realize that students have to keep thinking for themselves. Do they want to do something completely new, though recognisable or do they want to stick to the traditional brand values?

Currently, only a few Industrial Design master courses focus on design selection and brand-related product design. Students attending these courses certainly obtain insight on the basis of MAYA-principle. However, an unequivocal approach to apply the principle into practice has not yet been provided. The approach proposed in this paper may encourage well-informed decision-making in design projects. Even though it still needs to be tested and implemented in study programmes, we hope that this article may stimulate this use of this approach.

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