

# ETHICAL BICYCLE CONSUMPTION: FROM USED FRAMES TO NEW PRODUCTS

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## ABSTRACT

The use of bicycles in Norway today is very high, perpetuating a popular view of the bicycle as a symbol of sustainability. This study explored how the life of a bicycle and its parts might be extended through the reuse and repair of materials to heighten product value. Using John Elkington's triple bottom line theory, which is described in his 1997 book *Cannibals with Forks*, social, environmental and economic factors are discussed in the context of a potential project called Håp Cycles. Successful realisation of this project requires cross-disciplinary collaboration between several actors, including bicycle mechanics, designers, graphic designers, retailers, manufacturers and other groups. The research question therefore is: How can the triple bottom line influence modern bicycle consumption? The methods used in this research were case studies, interviews and product development. Typical examples from the bicycle market were graded on their performance according to self-expression, group affiliation, memories, pleasure and customer attachment. These along with other findings were used to identify a potentially important fourth factor: culture. This research discusses the bicycle and uses it as an example to highlight some of the broader issues surrounding consumption and sustainability. Therefore, it can contribute to the better understanding of designers, students and cross-disciplinary businesses of the relationship between products and their potential in social, environmental and economic sustainability benefits.

*Keywords: Recycling, bicycle design, triple bottom line, social responsibility.*

## 1 INTRODUCTION: INTERVENTION

Sportsbransjen AS (which currently has a 91 per cent market share) says that 410.000 new bicycles were purchased in Norway in 2014. Renovasjonsetaten statistics show an estimated 14,000 tonnes of bicycles were thrown away in the same year in Oslo alone. There are no statistics for the abandoned bicycles that the government has been collecting from public places. These initial findings are in contrast to the thinking of Arne Næss, one of Norway's most prized philosophers, and indicate a modern culture that is failing one of the theoretical rules of ecology: conscious unconscious (1). New bicycles are bought and have a relatively short life. In a modern society that celebrates sharp increases in cycling activity (2), this raises concerns for future needs and patterns of consumption. There are many factors at play, from poor initial design, to high maintenance costs, irreparable damage and theft, but this paper will focus on the cycle of buy-discard-buy, examining how design could intervene. A grading system is used along with empirical data taken from a group of industry professionals. These findings are discussed and used to test and refine a response. An action research phase follows, with possible directions for a social design project, which are summarised in the discussion and conclusion as an exploration of value(s).

### 1.1 Social responsibility

The 'triple bottom line' (TBL) is a term first coined by John Elkington in 1997 (3). It describes an enterprise's responsibility to ensure that the social and environmental implications of their actions are considered along with financial gain; it is most commonly defined as 'people, planet, profit'. Successful TBL companies are therefore successful in their sustainability. Due to world issues, such as global warming, poverty and natural resource depletion, it is part of what some consider to be a key turning point in the way businesses and economies will develop and operate in a post-globalisation era (4). This paper uses the TBL as a basis for discussion and will focus in particular how it could be applied to extend the lifespan of a bicycle.

Worldwide, examples of bicycle companies with corporate social responsibility profiles are easy to find online (5,6). Due to the PR benefits of being socially responsible, an environmental or empathic ethos improves the light in which a company is perceived. There are some doing it and some using it as a marketing message (7). This can result in cynicism towards some commercial enterprises and has led to the term 'greenwashing' (8).

## **2 METHODS**

Case study method was chosen to establish knowledge on a typical range of bicycles and how they fit into the market in Oslo, Norway. Interviews were conducted to gain a deeper knowledge of the subject and surrounding issues. These were used to inform the initial part of a subsequent project, provisionally named Håp Cycles.

## **3 FINDINGS**

### **3.1 Case study: a range of bicycles**

According to one Dutch study, 'from the viewpoint of sustainability, it can be valuable for designers to influence the degree of attachment people experience to their products' (9). Four main factors are listed to increase the lifecycle of a product. There are other ways to judge products; these are considered to fit the criteria of bicycle ownership very well and have therefore been used as a basis for assessment: self-expression (can I distinguish myself from others with the product?), group affiliation (does ownership of the product connect me to a group?), memories (related to the product) and pleasure (provided by the product). The higher these four factors, the higher chance the product has of not being replaced.

Consumer-product attachment can be defined as the strength of the emotional bond a consumer experiences with a durable product (10). To illustrate which elements in a bicycle are strong and which are weak, examples of existing bicycles on the market were explored against the model above. The findings are presented and categorised on a scale from high to low. What made this interesting was that it enabled us to see if there were any trends and factors that repeated themselves with certain types of bicycle and whether this could be used to inform design choices at a later stage.

### **3.2 Ethnology: what the mechanics say**

The bicycle is primarily a vehicle, but it is also a reflection of our values, consciously or unconsciously. By bringing in knowledge from professional mechanics about customer opinion, bicycles and the market, one clear opportunity appeared for further research: the imminent lack of expertise regarding the maintenance of older Norwegian bicycles. One mechanical weakness in particular was identified in the transmission design, and the skills to repair or replace this part are fading as newer, simpler components have been replacing it. The cost of spares, difficulty in sourcing them and time for work to be done on the Fauber crank system, when compared to the ever-lowering price of new bicycles, lead many consumers to make the replacement choice instead.

In effect, this means that thousands of bicycles produced in Norway during the 1960s, 1970s and 1980s are fading from existence along with the skills to repair them. This is in spite of a degree of nostalgia associated with these frames and the fact that they have been part of the urban landscape for 30–40 years. Since bicycle production moved to Asia during the 1990s, these bicycles represent an epoch of Norwegian industry that, due to European manufacturing costs and globalisation, is unlikely to return. This points toward the gap that many of these older bicycles fall into, and the situation where many larger stores are offering bicycles costing under 2000kr and less than the cost of repair.

If old bicycles were to be salvaged, modernised (pleasure, reliability) and offered to the market, then the service must be desirable (self-expression, individuality), and for these new/old (memories, nostalgia) bicycles to perhaps come under one name (group affiliation, uniting). If this could be done, it must be in a way that answers to the economic requirements of the TBL and be a legitimate alternative to cheap replacements.

### **3.3 Artistic research: Håp Cycles**

To begin interpreting the findings gathered so far into something physical, a new bicycle was built using salvaged parts. In this way, very few new resources were consumed, and the bicycle might communicate appealing values beyond the cost efficiency of cheaper new bicycles.

Evidence of human touch is instinctively relatable. It is capable of stopping people in their tracks, transferring emotion, communicating passion, and activating others to be involved (11). From this standpoint, the idea of constructing something genuinely desirable based on used parts is the starting point. The process of building a new bicycle by using an old frame is nothing new, so ways of separating Håp bicycles from other refurbished bicycles was introduced. Craft elements are present, from intertwined cotton bar tape, to resprayed sections of the frame, representing skills that are particular and rare. The goal is to put uniqueness ahead of any sustainability agenda, and to investigate the space between consumer desires and responsible consumption. A one-off bicycle with a story, with a name, becomes a symbol in hope of change.

### **3.4 Interview: Design Without Borders on the subject of sustainability**

Design Without Borders is an organisation that focuses on the sustainability needs of developing countries. According to lead designer, Svein Gunnar Kjøde, 'Design is incredibly important, because it is trying to communicate all of these intangible values in a form'. The conversation identified the question of personal value and how the symbolism of a product may have been lost or changed in the course of time. In Norwegian terms, the *bunad* (traditional Norwegian costume) is possibly the most obvious example of an object with value. They are economically expensive, but they are also steeped with meaning because of their heritage. The interview pointed towards the benefits of attempting to instil similar principles within the Håp design process. If the personal value of an object can be increased, it can represent a way of thinking as well as a higher level of significance for the user.

During the interview with Svein, the topic of maintenance was discussed. Based on his experience in Africa and Asia, where maintenance is standard, he noted that it is less common as a concept in Norway. In his words, 'That is why we really want Design Without Borders to be an exchange. They are teaching us all the time'. This is perhaps connected to a comparative abundance and availability of resources in Western countries.

The design or re-design and engagement with materials potentially opens an interesting bridge between cultures where the exchange of skills in frugal design approaches can be introduced. This research could therefore inform the TBL people category by introducing discussion options for positive social change. Further research might, as Svein suggests, aim to increase 'the connection people feel to the actual source'. This could happen either through attitude changes toward maintenance or as a result of being involved.

## **4 DISCUSSION**

Thoughts surrounding sustainability have continued, leading to concepts such as The Living Principles framework (13), which states that a design thinking approach to investigation, analysis and visualisation can create value and opportunities for companies and people across all streams of sustainability. This paper was a reassessment of earlier assumptions for the direction of Håp Cycles and was an attempt to find informed ways to continue. If, as suggested by Katherine McCoy, all designers need an appropriate framework to evaluate and assess the impacts of their work within its social/ethical/political milieu (12), the research phase pointed towards classic Norwegian bicycles as a platform and source. At the time of research, there was an adequate supply of frames in used condition, with original and deteriorating components. This was considered to be an opportunity to put them back into circulation, while using updated designs to make improvements. These frames also showed a greater aesthetic contrast with newer components due to authentic patina and life-marks. If a designer chose materials that age with dignity, the marks of use would not necessarily degrade the product's appearance but could add to the richness of the shared history of the owner and the product (9). Other Scandinavian brands such as White Bikes talk on their website about the importance of quality components, aiming to supply the market with brand new, full replacements. They do not use steel when manufacturing frames, which is widely considered to be the most desirable, repairable and long-lasting material. Steel also gains familiar patina such as rust, unlike aluminium and carbon. When setting a test version of Håp Cycles against the case study model along with competitors, we

could discuss how it performed and what measures needed to be in place to lift low scores. The keywords have been translated into a cycling vocabulary.

**Affiliation:** Brand, Culture, Heritage

As a concept, Håp signifies a set of principles and support of a type of product that differs from mass production/mass consumption. If brand design was successful in creating team spirit, the owners/participants/contributors of any affiliated products would become team players.

**Expression:** Individuality, Customisation, Beauty

The inherent nature of one-off bicycles is that they are unique. Limited production capacity will by its nature create a version of humble exclusivity, while offering user preferences.

**Memory:** Nostalgia, Trust, Service

If the project follows the direction of Norwegian frames as the basis for each bicycle, the end of a line for an age of frames rejoins the beginning of a new era.

**Pleasure:** Reliability, Fun, Journey

The process of adaptation relieves the bicycle of some of its original, tired components and replaces them with a modern counterpart. If this was done along with access to basic maintenance training or participation in the build itself, there is an opportunity for emotional investment.

#### **4.1 Håp Cycles in terms of people**

In order to create more attention for the issue(s) of sustainability, inspiration was taken from Blake MyCoskie's company as an example of functioning TBL success: 'You attract talented people when you have a mission, and you will find that you have many benevolent partners in other companies' (14). The idea of the bicycle being currency, in the same way as a Tom's product, a symbolic object through which thoughts, experiences, possibilities are shared and exchanged, means that the issues it represents might reach a wider audience. If connections can be made throughout the design, building, marketing and purchasing processes, and if financial proceeds go on to be part of support for further social projects, then the bicycle becomes a benevolent partner, rather than as financial donation, and this mutual partnership is considered to be far more effective and sustainable (15).

#### **4.2 Håp Cycles in terms of the planet**

By taking used frames as the basis for a process, there is environmental benefit in that the materials are already in use as products. They already exist. Håp aims to be a design project for people instead of clients, for change instead of consumption (16). If presented well, it could provide a legitimate alternative to inexpensive, new bicycles and contribute to the idea of investing in heritage and craft (11). If the process developed and included a donation system, it could reach out to manufacturers and suppliers who are willing to contribute parts for one-off bicycles and who see benefit for their own enterprise's conscience (7) in supporting the values for which this project stands. Over time, a fully functioning ecosystem could occur as Håp becomes a commonly known alternative to city dumps. Borrowing from large corporate sustainability plans, such as Nike's, the bicycles position themselves in a closed loop (17) in which they circulate, returning periodically for new tyres, new oil, changed parts or a new owner for many lifetimes.

#### **4.3 Håp Cycles in terms of profit**

Ensuring that Håp cycles is part of a functioning, economic model is fundamental to its sustainability, and learning an effective way to achieve that would be logical in the next stage(s) of the project. Paramount to its success is outreach, i.e. the project's success in involving people. 'The more compellingly you communicate your story, the more likely you are to receive support. People like to fund honest, compelling, impactful stories' (18). Therefore, collaboration with organisations, businesses and the general public are all potential options for Håp. In the USA today, 400 companies do business as benefit corporations. After gaining this status, they are bound by law to adhere to auditing, participate in socially responsible activities and open themselves up to funding opportunities, investment and tax benefits. In this way, a growing sector is using business for social good, creating a powerful tool for social change (9). The artistic research phase suggested that inclusion of an identity or brand name and a story (the origin of the bike or a socially responsible goal) could contribute to a higher sale value and therefore help brand awareness, loyalty and economic viability.

## 5 CONCLUSION: AN EXPLORATION OF VALUE(S)

The Living Principles for Design framework lists a fourth principle, in addition to the people, planet and profit of TLB (3). 'Culture' is a natural space for design, and according to the framework, success is dependent on the active involvement of the creative community to drive the conversation, the industry and the world toward a brighter future (13). It is about positioning sustainability logic in the cultural setting where it can be presented and consumed. Håp strives to fit in here, perhaps through products and services with appeal, where underlying concepts are present in a quiet, humble manner. Good intentions do not require advertising if the message carries itself with the story (14).

Håp is an idealistic concept brand with blended values and a mutually beneficial relationship with different people and groups. The logo functions as an anchor, a focal point, symbolised by an animal both vulnerable and strong. In a modern society with so much visual language, a simple design with two, interchangeable colours represents a 'less is more' approach (19).

The case study suggested that participation in design choices would increase public engagement. That self-expression would increase love for a product (10) so, during the initial phases of the project, a frame might be slowly built up over a one-month period with an inclusive choice system on key aesthetic and practical choices. Which handlebar? Which saddle? Which wheels? The gradual public display of this build process might raise curiosity and awareness of the process, the concept, the surrounding issues and the number of supporters. If profit is in the name of a connected, social project, it is about trying to create a situation where the sale price far exceeds what could normally be expected because the intentions are worthy and transparent. This could be amplified through buying processes such as auctions or crowd-funding.

During qualitative research, a product was found that addresses the flaw found in the original Fauber crank system and further research could be done to learn if it could be produced in Norway, perhaps using 3D printing. This could be a Håp product. When used to modernise the archaic system found on many classic bicycles produced in Norway years ago, it potentially opens up a flood of frames for conversion and could be used to slow the continuing trend of newer, lower quality bicycles replacing them. If conversion is offered as a service, a balance would have to be found between pricing and value, to encourage that choice. Another approach could be to develop products that facilitate and promote maintenance, polishing and cleaning. With further research and active partners, an exchange of three values might occur within the context and culture of bicycle consumption. A range of directions could be identified, each pushing the next around a wider closed loop of sustainability.

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