

# The Commodification of H<sub>2</sub>O: How Water Became a Designed Product

Marnie Crook, T. W. Allan Whitfield and Simon Jackson

Swinburne University of Technology

## **Abstract**

Bottled water is one of the great success stories of the design industry. The design brief could have been written quite simply as: 'Add value to a *colourless, transparent, odourless, tasteless, liquid compound of oxygen and hydrogen* (Oxford Dictionary 2008) that is freely available virtually everywhere.' It appears an impossible challenge. However, due to a clever combination of branding and packaging, H<sub>2</sub>O is now transported around the world, and is available as a differentiated product at distinct price points, even on the same supermarket shelf. The research project traces the evolution of this phenomenon and the factors that led to its success. One key factor is the social symbolism contained in the packaging, and its capacity to confer status. As the contents, H<sub>2</sub>O, are completely undifferentiated, the packaging assumes an importance perhaps unparalleled in consumer product design. The environmental, economic, and social factors that result from the success of bottled water are explored.

**Keywords:** *Bottled mineral water, product symbolism, packaging design, consumerism, spa*

## **The pursuit of purity**

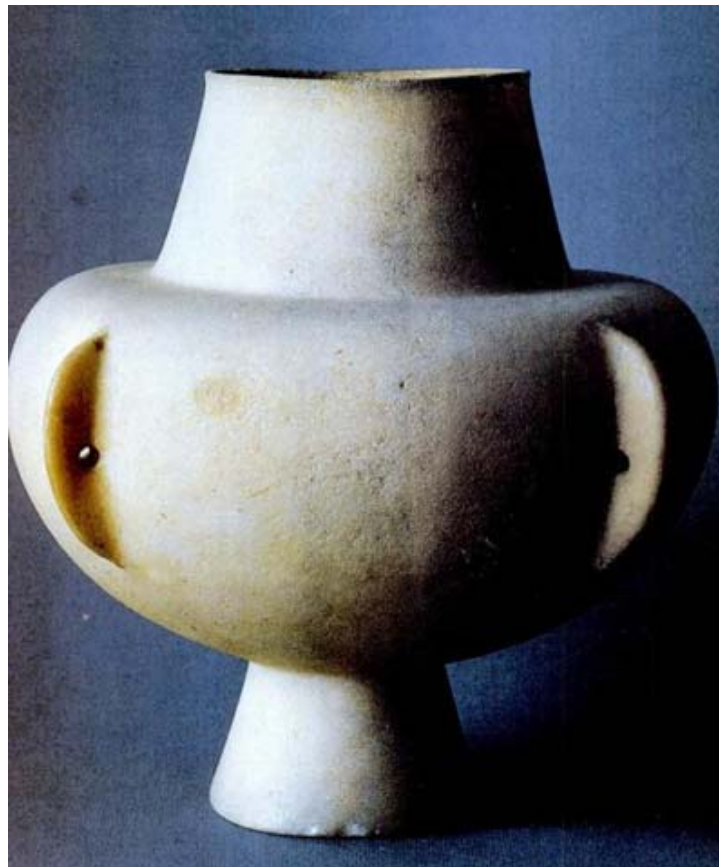
In medieval Europe drinking the water in towns or cities was a potentially dangerous act. Urbanisation had led to it being polluted and undrinkable, making water a dangerous commodity. Instead, wine, beer and ale were the customary choice of hydration, as water lacked the prestige of these much safer and often medicinal liquids. During his notorious reign leading up to the French revolution, King Louis XVI drank a litre of Champagne for breakfast (Andrew 2007; Taylor 1997), although, fortunately, it was common for beverages such as these to be brewed with a low alcohol content where they were to be regularly consumed (Gately 2008; Mascha 2006). Fortunately, the problems with polluted communal water in medieval times were eventually solved by advances in capturing, filtering, storing and distributing water that had been active ever since the appearance of agriculture an estimated ten thousand years ago (Mascha 2006).

## **Bottled purity**

The commodification of water was achieved with advancements in all of these areas. However, this paper treats single-use bottled water as the ultimate form of water commodification. Bottled water embodies commodification via the use of design, symbolism and mass production.

The bottle, the packaging of this essential element, began through the transportation and storage of water. The source of Apollinaires, a luxury mineral water brand from Germany, is a spring in the volcanically active Eifel region. Its mineral enriched waters have been valued as a luxury drink since Roman times. The ancient society distributed the water across the empire in clay jugs. The waters were sold in earthen jugs during the nineteenth century, and later in glass bottles, which also became popular for most other distributors of bottled water (Mascha 2006).

Possibly the most vital type of vessel in history is the water storage pot, a product of the 8000 year old craft of pottery (Hopper 2000). It was probably similar to the earthen jugs that contained Apollinaires water and is the founding ancestor of today's bottled water packaging.



*Figure 1.* Collard stone water jar, Greece, 3200 – 2700 B.C.

Source: Hopper, p. 39 (2005).

Mineral springs like Appollinaires have had their waters transported in vessels throughout Europe since classical antiquity (8<sup>th</sup> Century BC – 5<sup>th</sup> Century AD) (Mascha 2006). However, the mass production and commercialisation of bottled water didn't occur until spa culture came to the apex of its popularity during the 18<sup>th</sup> and 19<sup>th</sup> Centuries (Dege 2005; LaMoreaux & Tanner 2001; Mascha 2006). Appollinaires was one of many bottled mineral water brands that were made famous through spa culture, as well as global brands including Evian, San Pellegrino, Perrier and Spa (Mascha 2006; Royte 2008). The history of spa culture is a story that tells of a pursuit for the purest water, a story that eventually led to bottled water becoming a highly designed commodified product.

## **Spa Culture**

Within recorded history, the search for pure, clean water was driven by the desire for health and well being. Through this search, many ancient civilisations came to believe in the healing abilities of mineral springs and pools. Chinese emperors bathed in mineral waters to remedy such ailments as dermatosis and malaria. Their Greco-Roman counterparts built baths that were highly regarded social hubs and, in the case of the Romans, the baths transcended social boundaries in bringing the different classes together in social and intellectual interaction. Meanwhile, over the Atlantic, Native Americans bathed in mineral pools to treat a range of ailments, especially rheumatism, for hundreds of years before the colonists introduced spa culture to America (Arvigo & Epstein 2003; LaMoreaux et al. 2001)

As the cultural significance of mineral springs and pools continued into the medieval ages, the poor quality of municipal water at the time continued to drive the search for pure water, particularly in Continental Europe (Dege 2005; Finlayson 2005). There, great spa towns were established, boasting of their pure springs with unique mineral compositions that could cure ailments and maintain health. Elaborate *water hospitals* such as Contrex in France and Fiuggi in Italy were established (Mascha 2006) as the different waters became known for their own particular health benefits (Dege 2005).

In the valley of Ardennes, Belgium, a mineral spring became famous for its therapeutic qualities. It was first used by the Romans and called Sulus Par Aqua, "health through water". The town has subsequently become known as Spa, derived from the spring's original name (Crebbin-Bailey, Harcup & Harrington 2005). In establishing Spa as an international mineral water brand, the waters were first bottled in 1583 and regularly exported to the King of France himself, Henry II (Bottled Water Web 2008).

Through its popularity and subsequent exports to other parts of Europe and eventually the world, the name 'Spa' became synonymous with the natural springs and health resorts (Bottled Water Web 2008;

Crebbin-Bailey et al. 2005), ultimately creating a milestone in the commodification of water. Spa's story tells of an evolutionary development in the culture of water from hygiene and health to a highly commercialised product.

Initially the act of bathing in the pools and drinking from their source was a healthful practice that became known as "taking the waters", a phrase that encompassed the medicinal values and well-being of spa culture. An opulent marble drinking hall in San Pellegrino, the Fonte Termale (Thermal Fountain), is a tribute to the glamour of "taking the waters". The town itself was put on the map when Leonardo da Vinci sampled its spring water during his time in nearby Milan (Hordon 2005; Mascha 2006). Spas become increasingly popular during the 18th and 19th Centuries, even allowing visitors to take the healthful waters home with them, a significant step towards the commodification of water. The development of machines that could manufacture and fill the bottles meant bottled water suppliers were able to cater for this emerging market (Fletcher 1976; Hordon 2005; Royte 2008). Bottled water had been commodified and carried with it the symbolism and culture of the spas that it still retains today.



Figure 2. San Pellegrino early 20<sup>th</sup> Century Print Ads (c. 1899). Source: sanpellegrino.com.

A further development in the narrative of packaged water was the invention of artificial carbonation in the 1760's. This eventually led to a temporary fall of the popularity of bottled mineral water towards

the end of the 1800's when flavoured soda waters or *soft drinks* became the consumer's favoured beverage of choice (Finlayson 2005). The revival of sales of bottled water is ascribed to the Evian company that during the 1950's pioneered the advertising claim that Evian can "help lactating mothers and (provide) important minerals for infants" (Mascha 2006, p. 19).

### **From pure ignorance to pure hype**

In the industrialised world of the twentieth century, reliable sources of clean water in consumers' homes led to different approaches to the marketing of bottled water. It became a "lifestyle" product, and the health issues it promised to counter were obesity and not disease, as they had been in medieval times. Busy lives left consumers little room for opportunities to engage in healthy activities let alone seriously consider their personal health (Caballero 2007). In this environment, sugary soft drinks were the refreshment of choice, contributing to the industrialised world's growing obesity problem. In 1989, the new half litre PET bottle was introduced to the bottled water industry (Royte 2008). At a time when convenience was in high demand, the portability of the new bottle acted as a catalyst for change. Bottled water became a mandatory accompaniment in sports clubs and at the workplace. The value of health and well being, as it had been in the spa era, was the prominent factor for the rising popularity of bottled water (Euromonitor International 2008; IBIS World 2008).

The global consumption of bottled water has almost doubled since 1997 from 12 litres per person to 23 litres in 2006. Bottled water has overtaken soft drinks to become the world's most popular beverage. From 2002 to 2007 the global bottled water market value increased from 15.3 billion to 66.6 billion with consumption forecast to continue rising (Datamonitor 2008; Euromonitor International 2008; IBIS World 2008).

### **Branded water**

Much has changed in the 400 years of commercially bottled water, except for the primary incentive motivating our need for the perfect water, *health*. Intensified attention to health during the 1980s and 1990s was encouraged by government health campaigns and was given an extra boost by heavy campaigning from the bottled water brands.



Figure 3. Evian L'original Print Ad (1999).  
Source: hometheaterforum.com.



Figure 4. Evian L'original Print Ad (1999).  
Source: crisisville.com.

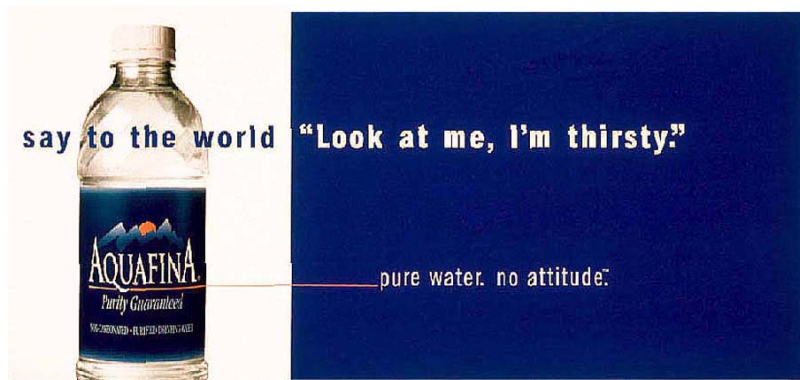


Figure 5. Aquafina Pure Water No Attitude Print Ad (1999). Source: coloribus.com.



Figure 6. Apollinaris Print Ad (1999). Source: coloribus.com.



Figure 7. Dasani Treat Yourself Well Everyday Print Ad (1999). Source: stanford.edu.

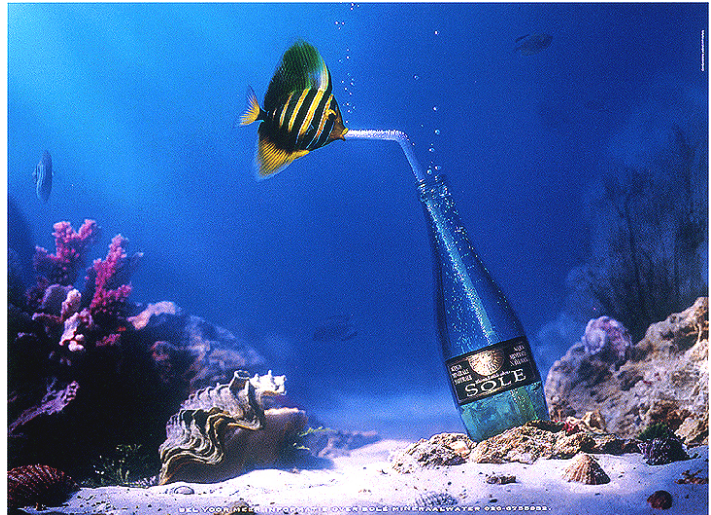


Figure 8. Sole Print Ad (1994). Source: coloribus.com.

The popularity of bottled water had always been supported by the historical narrative of spa culture. This story of tradition and health is apparent in advertising which emphasises the particular analysis of minerals and natural filtering processes, the source stories, social symbolism and lifestyle.



Figure 9. Health themes – Evian Source of Youth Print Ad (2005). Source: adme.ru.

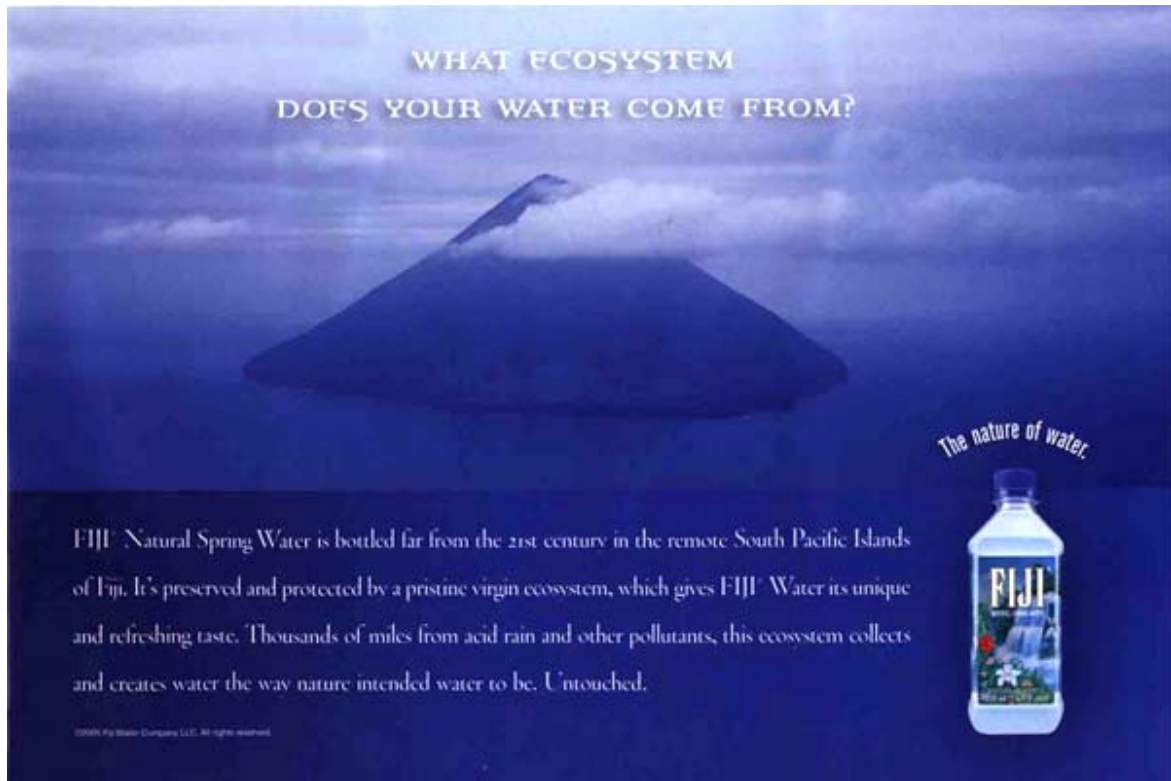


Figure 10. Purity themes – Fiji What Ecosystem Does Your Water Come From? Print Ad (2005).  
Source: abc.net.au.

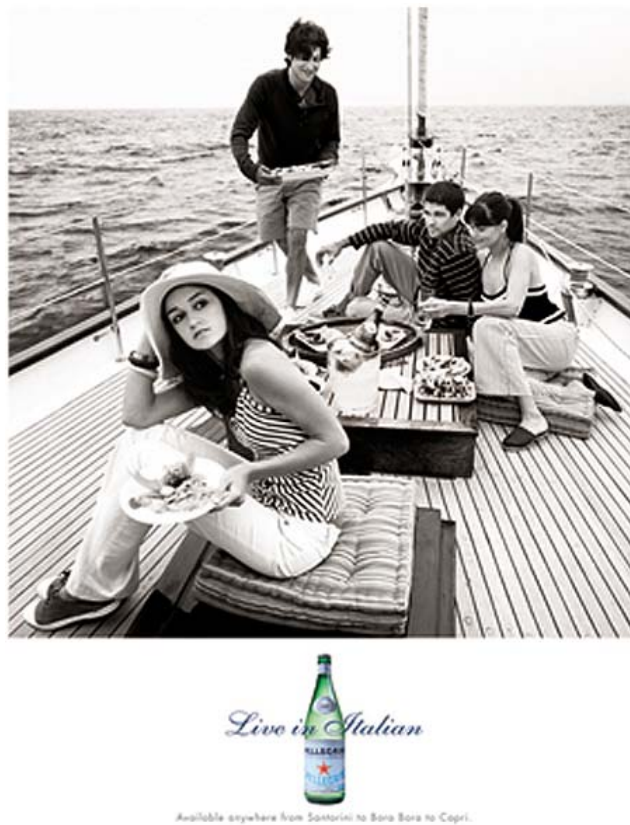


Figure 11. Lifestyle themes – San Pellegrino Live in Italian (2004). Source: sanpellegrino.com.





Figure 12. Youth culture themes – Cool Ridge, Getting Things Out of Your System. Source: adshelcreate.com.au (2009).

With the expanding market and increasing competition, the role of advertising in differentiating products is essential with brands going to extreme lengths to bring attention to their products. In Australia, Mount Franklin grabbed viewers' attention and curiosity in the late 1990s with a detailed sequence of two Franklin Mountain Woodland snails mating! That was then followed by the otherwise innocent tag line "Another feel good moment".



Figure 13. Mount Franklin Another Feel Good Moment Television Ad (1999). Source: coloribus.com.

With this extreme advertising accompanying more traditional imagery of snow-capped mountains adorning bottles with healthy, happy people drinking from them, consumers flocked to “take the waters” once again. This search for the most perfect, pure water is seemingly without limits. Branded bottles of the humble fluid are shipped over oceans, all around the world, so we can consume our favourites and try new ones...



*Figure 14.* Shipping water over water (n.d). Note: Copyright Bruce Perry

Evian, Spa, Tynant, San Pellegrino and Voss are popular European brands that are shipped 17,000 km to Australian shores. The search for the perfect water has even extended to the depths of the oceans. Brands such as Kona Deep and Mahalo Hawaii are piping deep sea water from 3000 meters below to the surface before desalinating it. Brands like these are marketed as the only sustainable source of pure, fresh water left as our environmentally damaging lifestyles pollute ground water and thin out other fresh water resources (Mahalo Hawaii Deep Sea 2007). Icebergs are harvested and melted for similar reasons by brands like Berg and Naeve Water.

Ritzy bottled water bars have appeared in modish locations from Paris to Los Angeles. Patrons are invited to taste waters from branded bottles that look more like collectors' items, while learning of their source and mineral contents. From Via Genova in Cappaqua, New York, to Colette's Water Bar

in Paris and Aqua Store in Rome, these water bars elevate bottled water to a status that rivals the symbolically layered culture of wine (MacLean 2004).



Figure 15. Acqua Panna A Water that Belongs on the Wine List. Source: Wine (2009).

In the water version of this sophisticated culture, the word ‘sommelier’ is no longer reserved for wine experts. Water sommeliers can now be found in fine hotels advising discriminating customers on their choice of branded fluid (Howard 2003; MacLean 2004). Filip Wretman, acclaimed as the world’s first water sommelier in 2002, educates patrons of the Ritz-Carlton Hotel in New York on the mineral composition of various brands and assists with their water-food paring.

The mineral composition of water is of particular interest today just as it was during the days of spa culture. Today, water brands have taken advantage of rising health concerns and regularly boast of unique mineral contents that suit particular health needs of consumers, whether it is to look younger or assist in mineral deficiencies. *Beauty to Go* takes the age reversing claims of bottled water head on with its brand name and declaration of “rich silicon quantities, which improve moisturising and enhances the tension and elasticity of the skin” (Christidis 2008).



Figure 15. Daily Beauty To Go (2008). Source: dailybeautytogo.

While many bottled water brands turn to unusual and extreme promotional material in this crowded market, some even expand their business beyond humans. After conducting research for a new product line, Charles Calise, Director of Innovation for Cotts stated, “We know that trends in the pet category quickly follow trends in the human category” (Zmuda 2008, p. 4). Fortifido, fortified water for dogs, was created by Cotts in order to compete in the saturated bottled water market (Prepared Foods 2008; Zmuda 2008), with a number of companies following suit.



Figure 17. Fortifido pet water (2008).

Source: blisstree.com.

Perhaps as a result of this bombardment of advertising and increasing consumption, concerns arose. As advertising hinted that bottled water was healthier than tap water (Hordon 2005; Royte 2008), consumer advocates began questioning the differences between the two leading to an increase in the speculation of water’s homogenous nature (Ferrier 2001; Howard 2003; IBIS World 2008).

A number of scientific studies indicate that despite some differences in mineral content, there is little difference in actual health benefits derived from bottled and tap water, as well as little difference

between waters of individual brands (Ferrier 2001; Howard 2003; IBIS World 2008; Olson 1999). In fact it can be argued the high levels of advertising in the bottled water industry are a result of water's homogenous nature! (Ferrier 2001; IBIS World 2008).

Critics have begun to term the success of the industry as "one of the greatest marketing coups of the 20th and 21st Centuries" (Royte 2008). Such assessments are part of the "tap vs. bottled water" debate that includes regular flurries in the popular media of statistics, environmental reports, spoof ads and highly criticised claims about these two forms of water consumption.

Environmental organisations such as the EPA (Environmental Protection Agency) urge consumers to avoid the bottle and drink from the tap at a fraction of the cost to the environment and to their wallet. While bottled water can cost 240 to 10,000 times more than tap water in America (Ferrier 2001; Li 2008; Royte 2008), Clean Up Australia Chairman, Ian Kiernan, claims Australians pay around 2500 more for bottled than tap (Allen 2002). By contrast, the bottled water companies point out the importance of providing bottled water for its convenience and capacity to give consumers an alternative option where tap water is not suitable (Logomasini 2009).

Naturally, the environmental issues are a major focus in this ongoing battle and it turns out that the plastic bottle, after contributing to the boom in bottled water sales during the 1980's, is now the primary source of environmental criticism for the bottled water industry. While bottled water providers uphold their position as advocates for recycling initiatives (Australian Bottled Water Institute 2004; International Bottled Water Association 2001), many consumers shun bottled water since the plastic packaging is labelled as an unnecessary contributor to plastic waste, when you can get water that is of similar quality from the tap – the 35% recycling rate of plastic bottles in Australia is a common statistic used in media coverage on this controversial topic (eg: Koutsoukis 2007).

Environmentalists' attempts to wean consumers off plastic have used the allure of the bottle and its associated marketing against the bottled-water industry. An example comes from Italy where citizens drink more bottled water than in any other country – up to 40 gallons per person (Rosenthal 2009). This poses a real problem in Venice where discarded bottles end up in the canals, difficult to collect. City officials have taken a unique approach to solve this problem by branding their tap water *Acqua Veritas* and readily applying a form of advertising that mimics the global multi-billion dollar bottled water industry. This included a bottle for *Acqua Veritas* in the form of a stylish carafe that was distributed free to households (Rosenthal 2009).



Figure 18. Acqua Veritas , a poster promoting Acqua Veritas with the mayor of Venice, Massimo Cacciari (2009). Source: nytimes.com.

Yet, despite the uprising against bottled water, it is now recognised by consumers as being healthier than any other beverage (Brent 2003; Grunwell 1999; Heeringa 1996) and advertising has led people to believe bottled water is healthier than tap water (Ferrier 2001; Royte 2008). Bottled water has become a social phenomenon, with advertising and changes in social and cultural behaviour creating a mass market for an undifferentiated, otherwise freely available product. Yet there is one more element of bottled water that not only defines it as a commodity but plays a significant part in its success as a highly desired product.

## Would you like some bottle with that water?

For homogenous products, the design of packaging acts as the primary point of differentiation (American Marketing Association 1998; Spethmann 1994; Underwood 2003). There is also evidence that consumers are increasingly making non-durable product buying decisions at the point of sale where the packaging is the primary point of brand communication (Prone 1993; Underwood 2003; Vartan & Rosenfeld 1987). So for bottled water, the packaging plays a particularly important role in gaining market share (Ferrier 2001; IBIS World 2008; Som 2008).

Bottles now come in an ever expanding array of shapes, sizes, colours and materials...



Figure 19. Designer water packaging.

The regular glass and plastic bottles are now rivalled by Tetra Pak cartons and flex packs while exclusive bottles created by celebrity designers such as Phillip Stark and Ross Lovegrove attract consumers' attention with luxury appeal.

As bottled water suppliers use high levels of advertising to create symbolic meanings of health, purity and social status, it is plausible to assume that consumers use the symbolism of bottled water to express their self-identity (Ferrier 2001; Royte 2008; Yu 2006). While consumers still consider taste and convenience when it comes to bottled water (IBIS World 2008; Logomasini 2009), these symbolic meanings have a particularly strong effect on consumer choice, making bottled water more of an accessory, than just another beverage (Arnould & Thompson 2005; Euromonitor International 2008; Evans 2007; IBIS World 2008; Yu 2006).

In *Selling Dreams* Longinotti-Buitoni (1999a) explains how *dreammarketing* appeals to consumers' imaginations and emotions, turning the ownership of a product into a dream experience. Longinotti-Buitoni (1999b) describes bottled water as a *dream product*; it is not designed to quench our thirst, but is a representation of acceptance from peers, and a representation of the fountain of youth.

The role of the bottle for branded water is made highly unique by its social symbolism, as consumers use it to create and communicate self-image. Product symbolism studies focus on the abilities of products to encompass abstract ideas and associations with values and characteristics, as well as consumers' beliefs about the kinds of people who use the products (Allen 2002). Symbolic messages may include those of convenience, environmental consciousness, quality and health (Underwood 2003).

While product symbolism studies have shown that consumers draw on the values and emotional messages encoded in products to form their self-image (Belk 1988; Levy 1959; Strizhakova, Coulter & Price 2008; Underwood 2003), it has also been established that product values and characteristics are reflected on their owners by other consumers (Allen 2002; Escalas & Bettman 2005; Holman 1981; Wackman 1973). Belk (1982) introduced this process as *consumption decoding*.

The designer's ability to differentiate such a generic product as water via the appearance and symbolism of packaging is a trait that is perhaps unparalleled in consumer product design. This makes water packaging a highly suitable candidate for studying how product values and characteristics are reflected on their owners by other consumers. In an effort to understand the bottled water phenomenon and the effects of its packaging on consumer personality, a pilot study was conducted involving stimuli images of a male and female person shown with two different bottled water packages.





a. Male with *Aroona* water bottle.



b. Male with *Bling H2O* water bottle.



a. Female with *Aroona* water bottle.



b. Female with *Bling H2O* water bottle.

Figure 20. Models with water packaging (2009). Source: Images created by the author.

Creation of the images was a multidisciplinary collaboration between a designer and psychologist. The designer obtained a series of stock photographic images of male and female people or *models* through an extensive internet search. With advice from the psychologist the designer conducted a survey intended to identify which male and female models' faces were of average attractiveness. It is important to use models of average attractiveness as the focus of the final images is to be the bottled water products. A person who looks overly attractive or unattractive may distract from the products. A nine point, attractive to unattractive, semantic differential scale was used to rate the attractiveness of the faces in order to find those of "average" attractiveness. In other words the closer a face is rated to a '5' on the scale the more "average" the face is presumed to be. With knowledge about human perceptual behaviour the psychologist advised on composition while the designer digitally superimposed the chosen faces with parts from other images to create four new images that were similar in terms of appearance and attractiveness of the male and female model.

These images were used in a pilot survey along with a set of questions about the models' personality and social traits in the form of nine point disagree to agree scales (Sekaran 2003).

Question example:

1. He/she looks friendly.

Disagree 1 2 3 4 5 6 7 8 9 Agree

The 9 point scales were designed according to previous research by (McCrae, John & Oliver 1992) on the 5 factor model of personality. This model is a hierarchical organisation of personality traits in terms of five basic dimensions (also known as the Big 5): Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience (McCrae et al. 1992). These five factors had been obtained in different cultures, with different languages, using different instruments and with different theoretical frameworks (Mount 1998; Paunonen 2003).

The 23 questions were randomised. The personality traits of the five factor model for use in the questionnaires are given in Table 1.

Table 1: Five factor model classification for the questionnaires.

Agreeableness	Extraversion	Conscientiousness	Neuroticism	Openness to Experience
Friendly	Masculine/feminine	Positive Attitude	Unstable	Creative
Trustworthy	Elegant	Reliable	Anxious	Stylish
Generous	Sporty	Efficient	Venerable	Open to new ideas
Kind	Attractive	Organised		

Results from the pilot survey showed that the perception of the models' personalities changed significantly when pictured with the different brands of water. Personality traits and social aspects that changed significantly for both models included their *elegance*, how *sporty* they looked, how *stylish* they were and how much they looked *open to new ideas*. There were more significant differences in the perception of the male model's personality than there were of the female model. While the male model had 16 significant changes in personality the female model only had 10. This pilot survey led to the development of a larger, revised, survey currently being undertaken.

As a successful marketing tool, packaging is a key element in many industries, none much more so than the bottled water industry. It has elevated bottled water to the prestigious position of the world's most popular beverage. While many environmentalists and consumer advocates are alarmed by the growth of this industry, the sales of bottled water are forecast to continue increasing, as people continue the pursuit for pure clean water.



Figure 21. Wet bone pet water.  
Source: Brand Packaging (2008).

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