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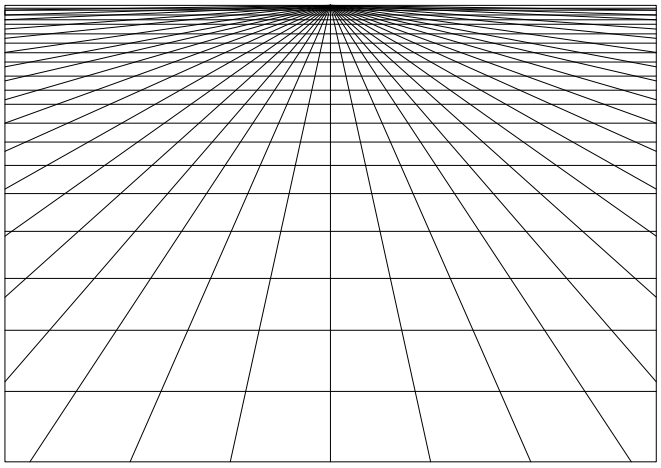

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COMMODIFICATION OF NATURE: SOCIAL CONSTRUCTION OF BOTTLED SPRING WATER

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Globalisation, Innovation and Policy
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Siv

Abstract

This thesis aims to investigate the social processes that are involved in constructing a commodity and consumer need in a commercial society. In Norway bottled spring water is a symbol of nature while representing the power of marketing and consumer culture. The study explores how spring water has been transformed into a commodity without loosing its symbolic value. Ringnes launched Imsdal in 1994, and is regarded as the first successful brand within bottled spring water in this country. I will use Imsdal as a case in order to explore how marketing and advertising are used as tools to create needs and desires for bottled spring water, while social groups make their own interpretations of the commodity and apply these according to existing tendencies, and their practise of use. I will use terms and concepts from the Social Construction of Technology (SCOT) approach and culture studies in order to explore how culture, commercial interests, media, public institutions, consumers and non-users of Imsdal all contribute in a social process of designing and shaping Imsdal.

Keywords: SCOT, consumer culture, commodification, marketing, bottled spring water.

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1. Introduction

In poor countries bottled spring water is a symbol of a government failed to provide a basic public service to its inhabitants. For rich countries, it is a symbol of abundance and reproduction of nature while representing the power of marketing and consumer culture. In 2005 the annual turnover for advertising food and drinks in Norway was 1 681 833 000 Norwegian kroner (Medienorge, 2006), while consumers spent 182 million Norwegian kroner on bottled water (Dagbladet, 2006). The aim of this thesis is to identify the social processes that are involved in constructing a commodity and consumer need in a commercial society.

Bottled spring water[1] is a product from nature that has been materialised and transformed into a commodity, but why do we spend money on a product than can be obtained for free? I hope to get an understanding of the symbolic value of spring water, and explore some of the reasons why consumers need and desire bottled spring water. My research questions are therefore as following:

How can nature be commodified, and how is a consumer need for such a product constructed? How can bottled spring water be explained as a socially constructed commodity?

As a case study I have chosen to study the beer and mineral water producer and supplier Ringnes AS (from now on only referred to as Ringnes) to analyse how they launched Imsdal in 1994 and became the first successful bottled spring water fabricant in Norway. What factors determined their success? Did consumers in Norway have a rational need or a desire for bottled spring water at that time, or was it a need constructed by Ringnes, commercial interests and the media? In order to answer these questions I will look into the cultural values and symbolism that consumers in Norway attach to spring water and nature, and how these

[1] Definitions of spring water, mineral water and tap water are enclosed in appendix.

associations have been exploited for commercial purposes. In this process I will also analyse how commercial interests work to convince consumers to feel needs and desires for certain products by analysing how design and marketing are used as tools to raise people's awareness about a product. Consumers are faced with choices and options when they decide whether or not they will buy a product. After a purchase they might modify and apply the product in directions that the producers might not have anticipated. How has such processes shaped the visual identity of Imsdal?

The framework of the discussions is modernity where concepts and ideas reflect upon central thoughts concerning modern culture in Norway and in the rest of the Western world. In this context I will look upon consumer culture, which is a distinctive feature of Norwegian culture today, and refer to a consumer as someone who has a need, identifies it, and knows how to satisfy it in terms of a commodity. I believe that consumption and commodities have a dominant presence in Norwegians' everyday life and hence the term consumer culture, which represent a society where commodities are used as one of the tools to display our social identity.

As a theoretical framework I will turn to the field of science, technology and society (STS). The STS field emerged in the 1970s – 1980s and seeks to explain *technology* (artefacts) and *science* (knowledge) in a interactive relationship where science cannot only be understood in the context of technology, and technology is not only applied science, but placed it in a social, political and cultural context (Hughes, 1986, p. 281). *Artefact* is used as a term to include all products of technology from machines to technical processes, hardware and software.

The sociologists of knowledge, Trevor J. Pinch and Wiebe Bijker have developed a model that applies interaction and interpretation of technology and science in order to explain a social construction of technology (SCOT). "Technology is created by engineers working

alone or in groups, marketing people who make the world aware of new products and processes, and consumers who decide to buy or not to buy and who modify what they have bought in directions no engineer has imagined" (Bijker, 1995, p. 3-4). I will use the SCOT approach as a theoretical framework in order to understand technological development based on complex social processes as in the case of Imsdal. I will use concepts like relevant social groups, interpretative flexibility and technological frames in order to understand how Imsdal is a result of how different groups of people shape and use the product based on their interpretation of the product, and their knowledge and references attached to a wider social context. Bijker has published several books and written several articles on the field, and will be one of main references throughout the thesis. In addition I will also use terms and concepts from culture studies in order to get a deeper understanding of consumers and consumer culture. Jean Baudrillard will be one of my main references in this field of theory because of his extreme views and criticism of consumer culture. By using Bijker and Baudrillard I will illuminate two different traditions and their interpretations of consumer culture.

It also might have been interesting to use Actor Network Theory (ANT) to elaborate further on how networks and interaction between *actants*, human and non-human factors, are related to the construction and success of Imsdal. ANT is an approach that has evolved from Michel Callon and Bruno Latour from the Ecole des Mines in Paris, and explains an activity or an action by studying the elements that influence the certain phenomenon linked in a heterogeneous network of actants. While ANT tells the story through an actant, and puts emphasis on relations and how the actant's significance depends on its relation to the context, then SCOT uses categories and has clear distinctions between the human and non-human, and human and artefacts. ANT is a demanding approach because it requires written historical sources and a detailed elaboration of the material. It is a suitable approach for laboratory studies, whereas my project is mainly based on observations. In order to use ANT I would

have to include non-human factors like material objects, and I came to the conclusion that practical elements such as time and size of thesis limit the elaboration of the research question. I therefore chose to focus on human actors and social processes related to the construction of Imsdal, and decided to use SCOT theory as my main theoretical framework.

1.1 Structure of Thesis

The thesis is divided into seven chapters. The following will give a brief description of the issues that each chapter aims to investigate.

Chapter one is the introduction to the thesis and includes the research questions, methodology and definitions of terms and concepts that will be of importance in order to get an understanding of how I have applied these to the context of the thesis.

My theoretical framework is presented in chapter two. I will give a brief introduction to the STS field before I present the main terms and concepts from the SCOT approach. I will also look into relevant terms and concepts from culture studies, such as consumer culture, consumers and consumer needs. In chapter three I will introduce my case study Imsdal, present my empirical findings and analyse the visual identity of Imsdal. Chapter four aims to get an understanding of the cultural values and symbolism attached to spring water in Norway, and how these have been transferred from the material and then applied to the commodity: bottled spring water. In chapter five I will analyse the importance of marketing and marketing research, and how Ringnes has used different marketing strategies in order to advertise Imsdal, and to establish a brand. In chapter six I will analyse how it is constructed a need for Imsdal, and look into how Imsdal is shaped, applied and designed by referring to relevant social groups. My concluding remarks are gathered in chapter seven.

1.2 Methodology

The word case comes from the Latin words casus and cadere, which means event, occurrence or happening (Kruuse, 1989 quoted in Andersen, 1990, p. 122). I chose to do a single-case study of Imsdal in order to get an in-depth understanding of the bottled spring water phenomenon in Norway. Criteria I have taken into consideration while working with my case is the period when bottled spring water was developed into a commodity in Norway, the cultural value of the material, Ringnes position in the market, the consumer market, and relevant organisations and institutions. Lack of earlier research on the field of how to sell nature as a commodity has resulted in that I have used theories from the STS field and culture studies as my theoretical framework. My findings are mainly based on empirical research, and the case study can therefore be identified as inductive. The aim of my case is to analyse what can be identified as a unique situation for Imsdal and Norway, without attempting to make any statistical generalization according to other brands in bottled spring water, trends or consumer patterns in modern society in the Western world. It might have been interesting to make a comparative analysis between Imsdal and one of the producers that failed entering the Norwegian market, or one of its later competitors, but due to limits related to time and size of thesis I chose to do a single-case in order to go deeper into the material.

1.2.1 Collection of Data

I contacted the Department of Market and Communication at Ringnes in April 2006 where I asked for their permission to gain access to some information and marketing material that would be relevant for my research question. We corresponded on the phone and by e-mail, but they turned down my application because they did not have the capacity, or resources, to answer all enquires from students. “Your project is interesting and relevant, but too demanding” (Hanan Jahr Horsrud 2006, Brand Manager Water in Ringnes). Empirical

evidence has therefore been gathered through interviews, newspapers, newsreels, statistics, reports and the Internet. This way of gathering information can challenge issues about validity and the risk of being biased. Newspaper articles and sources online contain interviews that have been interpreted by the journalist, and who has selected how much or how little of the conversation that will be printed. Statements and information from the interview objects will therefore be interpreted once again by the readers but often from the journalist's point of view. This can be misleading according to context, as well as that interview objects can hold back information, or be influenced by the journalists' reactions to their responds.

The interviews that I had were semi-structured which gave the objects flexibility to talk about the predetermined issues (Andersen, 2003). I had two face-to-face interviews, and one phone interview. I used a recorder when I interviewed Arne Dulsrud, Dr. Polit and Mag. Art in sociology, and Runar Døving, Dr. Polit and Cand. Polit in anthropology, at National Institute for Consumer Research (Statens institutt for forbrukerforskning, SIFO), and this was mainly due to that it would be difficult to take notes with two interview objects at the same time without interrupting the fluency in the conversations, or miss out on relevant information. The face-to-face interviews lasted for about one and a half hours while the phone interview with Oddvar Lindholm, who is professor in water technique at the Norwegian University of Life Sciences (Universitetet for miljø- og biovitenskap, UMB), lasted for about twenty minutes.

1.2.2 Choice of Interview Objects

A qualitative research method has been favourable for my research in order to reveal personal meanings attached to Imsdal. However, the interview objects also each represents groups with different perspectives and interests related to the issues raised in the thesis.

As mentioned earlier, I performed three interviews: The first was with Bjørn Rybakken, who is the creative designer behind the advertising agency Tangram Design, which designed the name and logo of Imsdal. I wanted to understand why they chose certain colours and symbols, and how they composed a name in order to create a visual identity that would convince consumers in Norway to spend money on a product that did not have an established value as a commodity. A second interview was with Oddvar Lindholm who was one of the members of a campaign called Water and Sewerage on Agenda[2] in the 1990s. This campaign had strong opinions according our tap water quality, and fought against the government to make them change the water pipe system throughout the country in order for us to drink healthy tap water. Their campaign run at the same time as Ringnes launched their advertising campaigns, which displayed dirty water pipes with arguments that bottled spring water was the healthy option to our dirty tap water. I found it necessary to explore whether there was a connection between the two. My third interview was with Dulsrud and Døving from SIFO. In the context of bottled spring water in Norway today, I wanted to explore how these two experts on consumer behaviour explain why Norwegians buy bottled spring water, and how they regard the position of the commodity in the context of our consumer habits.

Each interview object represents a perspective and a field of profession that has helped me to get an understanding of how it has been constructed a need for bottled spring water. The questions differed according to their field of profession and relevance to the research questions and the relevant discussions. The selection of interview objects might raise questions of how representative they are, but they are key informants in their respective organisations, and by using additional empirical sources I feel that I accomplished to obtain a picture that explains how it has been constructed a need for bottled spring water in Norway.

[2] Vann og avløp på agenda

1.3 Needs, Wants and Desires

There are several interpretations of the terms *need, want* and *desires*. A product like bottled spring water can be an object of all three. The aim with this section is to make clear how I will use the terms in the discussions in this thesis.

Abraham Maslow created a pyramid to illustrate the hierarchy of needs. The pyramid consist of five levels where the four lower levels are ranged in an order determined by basic needs associated with physiological needs, safety needs, needs of love, affection and belongingness and needs of esteem. The last level is associated with psychological needs and is called needs of self-actualisation, which shape our behaviour and wants after the four other levels are satisfied (Dokk Holm, 2004, p. 36). These needs are determined by social and cultural factors, geography and time.

Needs and wants might both be characterized as desires to obtain products and services for personal consumption. The desire for a product might both be biological and socio-cultural (Raiklin and Uyar, 1996, p. 50). Baudrillard claims that when consumers are beyond survival needs they become social, meaning vulnerable to alienation, manipulation and mystification where they no longer know what they want (Baudrillard, 1969, p. 72). In the 1960s Norwegian households spent approximately two thirds of their income on the two lower levels of Maslow's pyramid: food and safety. The rest was spent on goods and services that give us respect, status and self-esteem. Today, the situation is turned up side down where people spend most of their money for purposes of refinement (Dokk Holm, 2004, p. 39).

1.3.1 A Need for Bottled Spring Water

In the context of my research question I will use need as a term that primarily covers wants and desires. Baudrillard, however, found it unsatisfactory to use the term need in relation to consumers, because consumers will never be able to satisfy their needs for commodities. However, needs by definition can be satisfied, and therefore "cannot account for the insatiability of consumers" (Ritzer, 1998, p. 7).

Ringnes did not launch bottled spring water in Norway with the intention to cover a basic need in order for us to survive, but for some people living in areas with poor tap water quality it became a substitute until they would be supplied with the good drinking water they are entitled to according to Norwegian regulations (Lovdata, 1995). One might say that bottled spring water changed from being a rational need for those in need of clean water, and into a want for a semi-luxury commodity. Jean Baudrillard argues that needs are functions of the particular history and culture of each society. Needs are immersed in historical and cultural dimensions, and then by implication, impregnation, interaction, articulation it is recontextualised in a social history or culture that is understood as a second nature (Baudrillard, 1969, p. 66). Still, what might be regarded as a luxury good in one country and one context might be a necessity in another, but this might change according to time and place. The Second Industrial Revolution, which emerged around 1850, and the emergence of a capitalist society lead to increased production of goods and services, increased demand and transformation of luxury and semi-luxury items into necessities.

The term need can be used to express a need for certain goods and services in order to live a certain lifestyle. The roles of bottled spring water are to give profit to the producer, to provide the consumer with clean and fresh water, and pass on values of health and trend to the consumer. Trend is created at a cultural arena through social productions of signs, values and relations (Baudrillard, 1969, p. 70). A product has no meaning until it is put in a social

context, and bottled spring water can achieve a status of being trendy when it is compared to other drinks like sugared soft drinks. The value of trend is accomplished when consumers identify the symbolic values. Clean water and plastic bottles are not trendy on their own.

2. Social Construction of Technology

The Social Construction of Technology (SCOT) approach has developed from Science, Technology and Society Studies, or Science and Technology Studies (STS), and is the theoretical framework of my thesis. The STS field and the SCOT approach seek to understand the dynamics of technological development and change by studying the inner workings of technology and their histories. This will therefore be the dominating field of framework where I will use their perspectives and concepts in order to study how Imsdal is a socially constructed product. Meanwhile, I will also include concepts and terms from culture studies in order to understand the local cultural values attached to spring water and nature, and how these values have been utilized in order to transform nature into an object and a commodity of desire. In this chapter I will first give a brief introduction to the STS field in order to understand the disciplines and ideas that SCOT is based upon. Then I will give a presentation of SCOT and the theory's main concepts. Finally, I will introduce some basic concepts and terms in culture studies that will be relevant for discussions in the following chapters.

2.1 STS

STS is an interdisciplinary field of study that emerged in the 1960s – 1980s. New disciplines drawn from sociology, history, anthropology and political science addressed topics raised by science and technology, and made space for studies that up till now had been ignored by the traditional curriculum like for instance women studies. The approach looks at how social, political and cultural factors affect scientific research and technology innovations, and how these in turn affect society, politics and culture. Nature alone is therefore no longer considered to reflect scientific truth, resulting in a methodological move from observation towards a more practical and empirical approach to understand science where data like rhetorical

studies, science policy, public understanding of science and psychology is used to produce science.

Some of the main actors involved in the STS field are Harry Collins, Trevor Pinch, Wiebe Bijker, Donald MacKenzie, Steve Woolgar, Bruno Latour, Madeleine Akrich, Michel Callon, Donna Haraway, Thomas Hughes and John Law. Works of literature that have been central in the development of the STS field are Thomas Kuhn's *The Structure of Scientific Revolutions* from 1962 where he raises a debate regarding paradigm shifts in theory of science, *Social Shaping of Technology* by MacKenzie and Wajcman from 1985, and *The Social Construction of Technological Systems* from 1987 which is a collection of essays edited by Bijker, Hughes and Pinch. The books raise discussions surrounding the interaction between technology and science studies challenging technological determinism, and argue that technology cannot be explained on its own terms. Technological development and change must rather be understood by studying the artefacts, social actors and their activities (Bijker et al. 1987).

Within the social constructivist approach three lines of work can be distinguished that deal with the seamless web of technology and society: the systems approach, the actor network theory (ANT) approach and the SCOT approach. The systems approach was introduced by Thomas Hughes who understand technology as heterogenous components of artefacts, institutions, the political and the social which form a seamless web of interaction between technology, science and society (Hughes, 1986). The ANT approach, with contributors like Michel Callon and Bruno Latour, has a methodology that includes both human and non-human factors as social actors. These actants consist of humans, ideas, texts and so on, and can be identified as "whatever acts or shifts action" (Akrich and Latour, 1992, p. 259). Actants that have no meaning in them selves, which will be gradually developed in the process of producing truth.

All three approaches argue that one needs to open the *black box*, the input and output of the technology, and study its structure, workings and social origins (Bijker et al. 1987, p. 5). However, SCOT has become the most popular method in order to study how social groups interpret technology. The method explains how a technology is constructed by looking at relevant social groups and how their flexible interpretations of the technology determine its development. In the following section I will present the SCOT approach and identify its main concepts.

2.2 Social Construction of Technology (SCOT)

The SCOT approach has its source of origin from sociology of scientific knowledge and history of science. Wiebe Bijker introduced the concept to the public with his article on *The Social Construction of the Safety Bicycle* that was released in *The Social Construction of Technological Systems* in 1987. The book consists of a number of contributors that share a social constructivist approach to the study of technology, and how human networks of production, evaluation and distribution construct and transform technologies through a non-linear process of production. This multidirectional model distinguishes SCOT from other technology and innovation studies that apply a linear model to explain the development of facts and artefacts. The multidirectional model is crucial to social constructivists because it also illuminates the stages of failure in the process of development that makes it easier to understand why some variants of technology die whereas others survive.

SCOT has developed from two approaches, Empirical Programme of Relativism (EPOR) and the social constructivist approach to the study of technology (Bijker et al. 1987, p. 17). Key concepts that SCOT has picked up from these approaches are *interpretative flexibility*, *closure* and *relevant social groups* (p. 4). The concepts are applied when doing a

sociological analysis of technological artefacts: their usage, design and technical content (Ibid.).

The historical context of technologies is central when opening the black box and studying technology in the making. The process is studied through a sociological deconstruction where relevant social groups, sharing the same interpretation of the technology, define facts and artefact's success or failure. In this context the term *technology* has three layers of meaning: physical objects or artefacts, activities or processes and knowledge (Ibid.). In the following sections I will look at the concepts of relevant social groups, interpretative flexibility and closure, as well as introduce the concept of technological frames and look at the wider context of SCOT.

2.2.1 Relevant Social Groups

Relevant social groups are individuals who share the same meaning and interpretation attached to an artefact (Bijker, 1987, p. 173). They are social actors who must not make a priori distinctions, but who are engaged in a process of defining technical problems according to their needs and interests while seeking solutions and having their solutions adopted (Bijker, 1995). The knowledge that the different groups produces plays an important role in the development of a technology because SCOT argues that human action shapes and constructs technology. Technical artefacts would not exist without the interaction within and between social groups (Bijker, 1992, p. 76).

One artefact might be used for different purposes, and by studying how different people use the artefact for different purposes and in different situations, one can identify relevant social groups and see how these groups are involved in developing a technological device, system or process. In this way researchers look for the users and the consumers that share the same meaning of the artefact, but also include less obvious social groups that are

connected to the artefact in one way or another (Pinch and Bijker, 1987, p. 30). In Imsdal's case it is natural to think of the consumers who drink bottled spring water, but also those who are non-users of the product, but have attached meanings to it for other reasons (Bijker, 1995, p. 41). To identify the relevant social groups is important in order to identify the functionality of the artefact, as well as the relevant problems associated with the artefact by each group. Each problem necessarily demands possible solutions that again might lead to conflicts between the social groups according to the functionality like for instance size, design and taste. Still, by finding solutions to each problem there is a move towards stabilisation for each social group. This might be a long process depending on social or political issues that come up in the process.

2.2.2 Interpretative Flexibility

EPOR stresses that there is more than one possible interpretation to scientific findings, and SCOT follows this methodology by referring to interpretive flexibility as one of the main concepts in the SCOT approach (Pinch and Bijker, 1987, p. 28).

Interpretive flexibility means that different people in different situations apply various interpretations to the meaning or the design of an artefact. The final result of the artefact is therefore only one out of several options that have been considered during the process of developing the material. Interpretive flexibility often point to how the artefact is culturally constructed, but it is also present in the design process.

The stabilisation of the technology is subject to politics like choices, interests and value judgments (Bijker, 1995, p. 281), where interviews and historical documents can be sources of information in order to see how an artefact is culturally constructed and interpreted. In excluding interpretive flexibility, one takes a deterministic approach to technology and excludes politics in constructing technology. In this case we would leave all decision making

concerning changes and choices in technology to scientists, but how would this affect diversity when social constructivists claim that: “The core of technology, that which constitutes its working, is socially constructed” (Bijker, 1995, p. 281)? A deterministic approach without room for interpretive flexibility would result in reproduction of stabilized meanings of artefacts without any opportunities for redefinitions of the problems according to use and value of the users.

2.2.3 Technological Frames

The concept of technological frames of the social groups is applied to SCOT in order to explain the interaction *between* and *within* the social group that constructs the artefact (Bijker, 1992, p. 76). In other words, interactions are structured by technological frames which can be described as concepts and techniques that a community employs in its problem solving (Bijker, 1987, p. 168). The concept includes current theories, tacit knowledge, goals, problem-solving strategies, practices of use, and knowledge about other technologies that create a basis for understanding the artefact in question (p. 171). Technological frames is a broad concept in order to be applicable to all relevant social groups, including those who do not have a professional background in engineering.

Technological frames also apply to the *interactions* of various actors, and take a similar approach to Callon’s network where the frames are located *between* the actors in the problem-solving process (Bijker, 1987, p. 172). The result of this interaction within the social group is a shared meaning. This interaction and activity raises the technological frame and prevents it from dying. Bijker explains that the technological frame structures the interaction between the members in the social group as well as it refers to the different meanings attributed to the artefact. Actors can be members to more than one frame, and have different degrees of *inclusion*, meaning different goals, problem-solving strategies, experimental skills,

theoretical training and so on, resulting in that there will be different levels of activity in the developing process (p. 174). Actors with low inclusion can use the product, but can live on without it as well. These actors do not see how the product can contribute any value, and position themselves indifferent to it and probably to the developing process of the artefact, while giving rise to technological determinism (Bijker, 1995, p. 284). In contradiction, there will be actors with high inclusion who can not picture a life without the product. These actors will practice a high level of activity.

2.2.4 Closure

When relevant social groups are identified there will be different solutions and problems attached to the artefact. A higher level of *stabilisation* is achieved when meanings attributed to the artefact are getting less ambiguous. *Closure* is achieved when users reach a consensus of that form, or when one meaning, need or preference by one social group is dominant across the others (Bijker, 1995, p. 271). The arguments leading to stabilisation or closure of a technology is treated symmetrical and unbiased by the researchers because the relativism and interpretations of the relevant social groups may be various and demand flexibility. Closure, acceptance or rejection of the technology, will eventually be achieved depending of how long it takes for the groups to agree upon a common aim and consider the problem as solved.

One mechanism of closure is *rhetorical closure* which can be achieved through that the social group, designing or using the technology, identifies a truth among the various interpretations resulting in that the problem is solved, and that the artefact is stabilised (Bijker, 1995, p. 86). The other mechanism of closure is achieved by doing a *redefinition* of the problem by focusing on another issue can solve that one problem (Ibid). Closure and stabilisation can occur several times during the development of the technology, and is a similar process to what Thomas Hughes refers to as *reverse salient* in the systems approach

(Pinch and Bijker, 1987, p. 13). The involvement of social groups will always lead to flexibility as long as different social groups give different meanings to technology.

The working of a technological artefact is not explanans but explanandum, which refers to that the useful functioning of the artefact is the *result* of socio technical development, and not its *cause* (Bijker, 1995, p. 13). Elster argues that technological change can both be perceived as a rational and a goal directed process, or as a process of trial and error where small adjustments and modifications lead to development and change (Ibid). The introduction of a technology does not justify that it is the ultimate solution of a technology. The closure might change over time as new social groups may find new interpretations and construct new debates about technology, facts or artefacts. The SCOT model favours an approach where both processes of failure and success are taken into consideration in the development of a technology. This principle of *symmetry* can be compared to the processes of variation and selection in the evolutionary model, but Bijker wish to avoid this connotation of a reified technology which he claims is a contradiction to his general constructivist approach (p. 292).

2.2.5 Wider Context

The third stage in SCOT is to relate the content of the artefact to the wider socio-political milieu. "The sociocultural and political situation of a social group shapes its norms and values which in turn influence the meaning given to an artefact" (Pinch and Bijker, 1987, p. 46). The content of the technology is therefore related to the values of the social groups and the wider milieu.

2.3 Criticism

ANT criticises SCOT for neglecting the valid aspect of technological determinism by ignoring the influence of technology upon social relations where technology and society

influence one another within the network of human and non-human actors (Strum and Latour, 1999). ANT differs from SCOT in that the constructor (the actor network) of the artefact might have applied the artefact with a purpose of utility. This purpose of utility, or the *inscription*, is transformed and the artefact is therefore materialised when a user applies its own understanding and function of the artefact. The transformations will differ according to the actant. On the other hand, critics to ANT claims that giving non-human actors the same explanatory status as humans reduces humans to objects, but Latour claims that it takes the research to a deeper level where it will be easier to be more precise, and reveal more details without being distracted by predetermined factors (Ibid).

Langdon Winner criticizes social constructivists for ignoring the consequences of the technology after the construction of the fact or the artefact. The study elaborates on how a technology is constructed, but it does not confront the effects and the later reactions: "What the introduction means for people's sense of self, for the texture of human communities, for qualities of everyday living, and for the broader distribution of power in society" (Winner, 1993, p. 368). He claims that reasons why these issues are ignored is because of the belief that these effects or impacts already have been studied to death, and that they are too attached to the sociology of science and to the origins of knowledge about natural phenomena, which result in a negative effect on the study of technology (Ibid).

Winner also criticizes the SCOT method in asking "Who says what is relevant social groups and social interest? What about those who do not have any voice, but still will be affected by the technological change (p. 369)? He argues that it is important to identify the issues that are never or seldom legitimized, and to observe the groups that are excluded from power. If not, needs of the powerful will be the only ones taken into account, resulting in that social scientists only focus on conservative societies and politics (Ibid). It is often the elite or resourceful people who are indeed able to enter the game and define its terms. Bijker agrees in

that relevant social groups challenge methodological issues. It might be difficult to find a spokesperson for the group, and it is only the vocal attributions of meaning that are analysed (Bijker, 1992, p. 77). A social constructivist approach does not explain why certain social groups are more relevant than others, and to what degree these relevant groups are politically motivated. The theory also underemphasizes the role of the individual actor.

The approach is also criticized for ignoring the structure of power and social class, and how it according to Marxism, is a fundamental condition that underlies all economic institutions, government policies and technological choices (Winner 1993, p. 370). Winner argues that social constructivists do not reveal whether there exist deeper cultural, intellectual, or economic origins of social choices about technology or deeper issues connected to these choices (Ibid).

2.4 Consumer Culture

Terms and concepts from culture studies will be central in discussions about how bottled spring water has become a commercial success at the Norwegian market. One of these concepts that I will look into is consumer culture, meaning how we live and how we want to live according to how society is organised. The material and the symbolic structure of how we live the everyday life, where we live, what we eat and drink, and how we distinguish working day from leisure time. However, Don Slater suggests that consumer culture can not only be understood by looking at texts and textuality, individual choice and consciousness, wants and desires, but rather a study of social relations, structures, institutions and systems. In this context, Slater identifies needs as the central theme in how to explore the social relation between private life and public institutions (Slater, 1997, p. 2). This relation can be explored further by looking at commercialisation and the economy, cultural reproduction, ethics and identity.

I will use the concept consumer culture in order to understand the terms on which relevant social groups like for instance consumers and non-users of Imsdal make specific interpretations, and how producers use marketing strategies in order to create associations, meaning and values that consumers attach to the relevant artefact. Consumer culture can characterise a culture where people consume goods and services and identify with these according to the value of the brand and its social status. In the following two sections I will present the relevant definitions of consumers and consumer needs.

2.4.1 Consumers

Being a consumer is identifying what he or she needs, and knowing how to get these needs satisfied (Slater, 1997, p. 2). What motivated consumers in Norway to buy a product that they had access to at home, more or less, for free? Other producers and distributors had tried selling bottled water prior to Ringnes, but the company appears to be the first that gave priority to marketing. Ringnes had an established network of distribution, but that is no guarantee for consumers to embrace a new product. Nancy F. Koehn writes in *Brand New: How Entrepreneurs Earned Consumers' Trust from Wedgwood to Dell* that well-organized manufacturing is seldom enough to ensure a new firm's prosperity. The firm must be able to communicate the advantages and the symbolic value of the products in an efficient manner (Koehn, 2001, p. 1). In other words, there must be some sort of relation between the producer and the consumers for Ringnes to be able to analyse feedback and make changes for the product or the marketing strategies. According to Raymond Williams the term consumer replaced the term customer around 1950s, indicating a change in the relationship between the producer and the user where the user has become a more involved actor (Williams 1983, p. 79 quoted in Lien, 1997, p. 110).

"Consumers are the final recipients of products, and an image of consumer target groups serves as the point of reference in construction of brand products" (Lien, 1997, p. 110). The objects of Ringnes' marketing campaign of Imsdal have mainly been urban teenagers or young adults, and women concerned with health and trends. This does not imply that Imsdal is primarily for these groups of consumers, but they are the people that most easily pick up new trends.

2.4.2 Consumer Needs

In *Consumer Culture and Modernity* Don Slater suggests that consumer culture meaning individual choices, consciousness, wants and desires are related to social conditions, structures, institutions and systems (Slater, 1997, p. 2). An individual need can be social, political, a tool to gain a certain lifestyle and a belonging with others, or a tool to signalise a specific social identity. Still, needs are individual, and what might be necessity for one person might be an item of luxury for another.

Jean Baudrillard argues that from a structural perspective we consume signs like messages and images rather than commodities (Ritzer, 2000, p. 7). In the introduction of the translated version of *Consumer Society Reader*, George Ritzer explains Baudrillard's extreme arguments according to the logic of signification where" Commodities are no longer defined by their use, but what they signify. And what they signify is defined not by what they do, but by their relationship to the entire system of commodities and signs" (Ritzer, 2000, p. 7). An object has no meaning unless it is put in a logical context. Consumers use objects and commodities to tell their social relations who they are, but who define these objects? In the context of bottled spring water we have to look at the role of the media, commercial interests and public institutions and to what degree they shape our needs and desires for commodities.

Consumerism is a term that can be used in order to describe how people purchase and consume goods that excess their basic needs.

3. Imsdal: Realisation of an Idea

In 2004 Ringnes and Tangram Design received the *Classic Award for Design Excellence* by the Norwegian Design Council for the graphic design of the Imsdal logo (figure 3.1, p. 34). The price is given to products that have been in the market for at least ten years, and which are still successful and give profit (Norwegian Design Council 1, 2006). The jury points out:

> The graphic elements and the typography give the product a veneer of tradition - the mountain symbol represents Ronde Castle, whilst the flag represents a certain national pride. The typography and graphic design have a timeless, genuine, classical quality to them. The label was reduced to half the height in order to show more of the clear water. The identity of the packaging has achieved iconic status (Norwegian Design Council 2, 2006).

In order to get an understanding of how Ringnes managed to create a need and a trend with bottled spring water, I find it necessary to explore how the process of developing the name and the logo of Imsdal have been relevant for the success. Ringnes' aim was to design a product that would appeal to our feelings of traditional Norwegian culture, while targeting a rather young group of consumers. In the world of consumer culture products taste and appear more similar making design and the ability to stand out from the crowd even more important. Water looks like water, making image everything. In other countries like USA there is a focus on what bottled water celebrities drink, but this is a marketing strategy that has not reached Norway yet. In this chapter I will look at how Ringnes together with an advertising agency, Tangram Design, use culture and history to sell spring water.

Figure 3.1 In 2004 Ringnes and Tangram Design/Bjørn Rybakken won the *Classic Award for Design Excellence* by the Norwegian Design Council for the graphic design of the Imsdal logo.
Source: Norwegian Design Council 1, 2006

3.1 Ringnes

The brothers Amund and Ellef Ringnes established Ringnes in 1877 as a small-scale brewery. Since then, the company has worked its way to become the largest brewery in Norway with approximately 1700 employees. Ringnes has had foreign ownership interests for several years, and is today owned 100 % by Carlsberg AS, which is the fifth largest brewery conglomerate in the world. Ringnes' vision is to be Norway's number one specialist on beer and mineral water with 'hands on focus' on clients and innovativeness (Ringnes 3, 2007). Some of the brands the company supplies in Norway are Ringnes, Dahls, Arendals, TOU, Norlandspils, Tuborg, Carlsberg, Budweiser, Smirnoff Ice, Farris, Imsdal, Solo, Mozell, Pepsi and Pepsi Max. They also do some export (Ringnes 2, 2007).

Located by the foot of Rondane in the spruce forest of Østerdalen, we can find the spring and production plant of Imsdal. To begin with mainly local fishermen and hunters knew about the spring, but in the late 1960s the Norwegian actress and cultural icon Wenche Foss, her husband Thomas Stang and the businessman Alf. R. Bjercke discovered the spring and the opportunities it offered. The idea of a bottlery became a reality in 1971 with the

establishment of Norsk Kildevann[3]. The water was bottled under the name of Norwater, mainly providing larger cans of water to export and aircrafts, but it never became a financial success.

The spring was rediscovered in the mid 1980s by a professor from the Norwegian University of Life Sciences. Ringnes got involved and purchased Norwater and the rights to the spring in 1987, and signed a 100 years contract with Stor Elvdal County. Ringnes refuses to say how much they make on Imsdal, but they are left with a good share after they have paid the moderate and annual fee of 110 000 Norwegian kroner to Stor Elvdal County. 50 000 is for the water, and 60 000 is for lost profit for not being able to do forestry in the area (Ihlebæk and Avdem Fretland, 2006). The factory in Imsdalen is the smallest out of Ringnes' five production plants.

Ringnes launched Imsdal in 1994, and became the first successful producer and distributor of bottled water on the Norwegian market. Several distributors had tried to sell bottled water prior to Ringnes, but Norwegian Water Export, Sauda Kildevann AS, Bergensmeieriet or Jarlsbergs Naturlige Mineralvannskilde[4] did not have the distributing network, the market power or the capital that Ringnes possessed. One of the employees in the marketing department at Ringnes had attended a seminar organised by the Coca- Cola Company where they had been told about future visions concerning *the new soft drink generation*. Experts claimed that in year 2000 people would be more concerned with their own health and focus on healthier alternatives compared to soft drinks like Coca-Cola (Sætre, 2004). Norwegians were amongst the top five countries in the world in consuming soft drinks, and this was something Ringnes realised would be an issue in the future (Bryggeriforeningen, 2004).

[3] Norwegian Spring Water
[4] Companies that did not accomplish success in selling bottled water in Norway

Despite that bottled water had a history of failure in Norway, Helge Krane, previous Marketing Director in Ringnes, and Espen Olafsen, at that time working in the advertising agency Backer Spielvogel and Bates, had a vision that "one day in the future, they would see a young girl walking down Karl Johan[5] carrying a bottle of Imsdal" (Sætre, 2004). Norwegians had become familiar with brands like Evian and Perrier abroad, and presuming that it would be an increased concern for sugar and health, and that bottled water had been a success in the USA, Ringnes was ready to give bottled spring water a go (Sætre, 2004).

3.2 Visual Identity

When Ringnes bought Norwater and the rights to the spring in 1987, the water was mainly sold in 5 litre cans for export, aircrafts and to local areas in Norway with poor tap water quality. In order to create a more market oriented product they turned to Tangram Design and its creative leader, Bjørn Rybakken, with an aim to create a new trend within bottled water. Rybakken has won several prestigious awards for graphic design, and is regarded as one of the most recognized consultants within the field of design and visual identity in Norway. The task was to find a strong identity not only for the brand, but also the product itself. A strong brand can determine the profit and influence the terms of competition in the certain industry, as well as making it easier to introduce new relevant products later like for instance Imsdal spring water with flavours[6] (Koehn, 2001, p. 5). Even if Norwegians bought bottled water on vacation abroad Ringnes had a challenge in convincing consumers to buy bottled water at home. Still, people need water, and they want clean water. Pure and clean spring water was Imsdal's main argument. There had even been a test in Germany where the spring water from

[5] Main street in Oslo

[6] In February 2006 Ringnes introduced flavoured water from Imsdal where the spring water has been added e-substances of acesulfam K and aspartame. These substances are also used in diet soft drinks and low fat candy and have resulted in an ongoing discussion that argues to what level the drink can be categorised as water (Matportalen 2006). The four flavours are: pear and ginger, black currant and jasmine, lemon and cucumber and fibre and lime.

Imsdalen turned out to be the only spring water of the ones tested that could be fed to infants without being boiled in advanced (Fredin, 2005).

To begin with the target group of Imsdal was first and foremost teenagers. This was however something that Tangram Design ignored during the design process.

> If we had taken the target group into consideration while designing the logo and the name, we might have ended up with something totally opposite of what Ringnes wanted. We could have gone for something hip and cool whereas Ringnes wanted a name and a logo that represented something pure, primitive and simple (Rybakken 2006 [interview]).

The design would be important when launching the product because there are limits for how much there is to say about purity and taste. What does Imsdal taste like? Is it clean, crisp and fresh? In order to stand out they focused on a visual identity that would describe and symbolise the purity of the spring and appeal to Norwegian values and culture.

3.2.1 Name

Early brands often referred to the inventor or the agent by being personalised, whereas bottled water mainly refers to the places of origin or geography. Examples are Telemark Water and Voss Artesian Water. However, the water in the Voss bottles does not originate from Voss, but actually from Iveland in Setesdal in the south of Norway. Voss is associated with extreme sports and beautiful nature with high mountains compared to the less famous landscape and minerals of Setesdal. The controversy attached to naming bottled water suggests that the power of water still stems from nature and not the producer or the distributor (Wilk, 2006, p. 309). A report by National Resources Defence Council from 1999 shows that *pure*, *pristine* and *natural* were among the most common words that water brands use on labels or in

marketing (p. 308). In some sense water may be perceived as more healthy and safe after it has been processed and commercialised through machines. This removes the natural from the material, but this process can be crucial for consumers in that the "fabricated" product appears to be safer. Even if consumers like the idea of drinking water directly from nature, it is a safer alternative to drink the water after it has been purified or is ensured pure by technology. Fears of biohazard, parasites and germs might contribute to these thoughts.

There were several factors involved when Rybakken and Tangram Design were searching to find the right name. It had to represent the purity of the spring, so they did not intend to add any artificial elements to the name that would devastate the genuine and the naturalness of the water (Rybakken 2006 [interview]). Before Imsdal approached Tangram Design, another agency had suggested names like Sildre and Risle (Norwegian synonyms to trickle), but the names were perceived as too modern and fabricated whereas Ringnes wanted their product to be perceived as something that had been a part of the nature for ages.

Tangram Design had conversations with local history societies to learn more about Østerdalen. They were searching for a name that would be easy to remember and have light vowels such as *i* and *a* compared to the darker *o* and *u*. Their attention was directed towards a valley located close to where the spring was found. It was called Imsdalen, and the name felt right according to the light vowels that would represent the clean and pure water. It was also a valley with a history going far back in time as being one of the places where the supporters of King Sverre, birkebeinerene, spent one night around year 1200. By naming the spring Imsdal, they also changed the local geography by "pulling" the valley down to the location of the spring (Rybakken 2006 [interview]).

3.2.2 Logo

The logo, as the name, was also designed to represent the purity and the history of the spring. The idea was to create a logo that would appear to be a bit naive and simple. As a model Rybakken and Tangram Design used classic design from the 1920s and 1930s. This is the period when the importance of packaging entered at the Norwegian market, and is regarded as the first consumerist decade where consumer culture was born (Slater, 1997, p. 12).

The Norwegian flag is printed on the logo because Norwegians love the Norwegian (Rybakken 2006 [interview]). We are a patriotic people, and in sports arrangements the flag appeals to pride and a feeling of belonging. In this perspective the flag implies values of being athletic and healthy, which the new trend of bottled spring water also wishes to represent. The flag also raises associations with the expeditions of the polar explorers Fridtjof Nansen and Roald Amundsen. Rybakken says that they wanted to create a logo, imagining that this is the water that Nansen and Amundsen would have brought with them on their adventures (Ibid). References to adventure can also be seen in earlier advertisements of Imsdal on television where the setting is futuristic and adventurous. This is a marketing strategy that should attract modern people in search of something pure and natural in a world filled with pollution and deconstruction.

A drawing of the mountain peak Ronde Castle enhances the feeling of Norwegian nature as well as referring to the source of origin, being the place where the water starts its journey before eventually ending up in the spring. Figure 3.2 (p. 40) presents a picture of Imsdal from 2006. In the bottom of the bottle it is carved out an image of a mountain peak.

Figure 3.2 Imsdal 0,33 litre
Source: Imsdal 1, 2006

The primitive associations with Nansen and Amundsen were also a theme when it came to the choice of colour. The colour of the Imsdal logo is blue, without any metallic influences that would give the logo a constructed and modern look. The purpose of Imsdal is to be public minded and a bit primitive, so the choice of colour could not contain any traces of luxury. Blue is the colour of the sky and the ocean, and is connected to nature and security. It represents passivity, calmness, reflection and intellect as well as the eternal and the nothingness that all life has originated from (Rybakken, 2004, p. 219). In politics it is not a coincident that conservative parties use blue, whereas the colour red represents passion, movement and change.

After the name and the logo were set there was a discussion whether Tangram Design should also design a bottle for Imsdal. However, they ended up using a standard model approved by the organisation for Norwegian Brewers (Rybakken 2006 [interview]). Still, after having been on the market for some time Ringnes launched a new slimmer and taller version of the Imsdal bottle, and fell into a disagreement with Rybakken concerning the placement of the Imsdal logo. Up till now, the logo had been placed at the centre of the bottle, but now it was placed nearly at the bottom. Everything about the logo implies, as well as being a tool for underlining, that it is a natural product without any artificial ingredients. Rybakken criticized the new version for looking like a bottle of perfume that is the opposite image of what they

want to display. “It was like the bottle was suddenly wearing something inappropriate, dressed complete wrong” (Ibid). It is unsaid how the change of placement of logo affected sales, but today the logo is back at the centre of the bottle.

3.3 The Launch – Dressed for Success

On the 10th of February 1994, one day before the Winter Olympics kicked off, Terje Jensløkken, who was Product Manager in Ringnes at that time, and the local district manager had met up at Strandtorget in the city centre of Lillehammer, piling the first pallets of Imsdal. Jensløkken approached several bars and restaurants, but had little luck in selling the new product. The locals had no trust in that bottled spring water would be popular in demand, so Ringnes faced a challenge in convincing consumers to feel a need and a desire for the product. Ringnes had assumable spent a great amount of time and money in developing Imsdal, a product that symbolised the purity of spring water and traditional Norwegian culture, but this turned out not to be enough to attract consumers. Norwegians did not have a rational reason why to buy bottled water, so previous Marketing Director in Ringnes, Helge Krane, said that they had to give them one (Sætre, 2004). Together with the advertising agency Backer Spielvogel and Bates, Ringnes worked out a market strategy in how to convince the Norwegians to buy Imsdal. The challenge was that they not only have to market a brand, but also introduce a new product at the Norwegian market. Espen Olafsen, being a scriptwriter in Backer Spielvogel and Bates in the early 1990s, lived in Drøbak, a township outside Oslo in Frogn County where the tap water quality was rather poor. When commuting to Oslo he observed that the local authorities in Frogn County were doing some work with the water pipes, and the idea to an advertising campaign was born.

In order to construct a rational need for Imsdal, Ringnes worked out a marketing strategy that raised questions about the tap water quality. They claimed that the tap water in

Norway was not as pure as we thought, and did not live up to the standards of Imsdal. National wide newspapers printed full-page advertisements of Imsdal with a picture of a dirty water pipe and a text saying, "You drink from this water pipe" (Dagbladet, 1994). This is followed up by a similar advertisement stating that nine out of ten of the population in Norway are supplied with surface water that contains high levels of humus and germs, and that "more than one million Norwegians are supplied with tap water that is not good enough" (VG, 1994) (figure 3.3). Ringnes subscribe to a media surveillance service where they receive cuttings from local newspapers that raise questions regarding the local tap water quality. The next day there would most likely be an advertisement for Imsdal in the same newspaper (Sætre, 2004).

In collaboration with Norwegian Institute of Public Health Ringnes print folders containing a map of Norway where areas with poor water quality are highlighted. According to Krane people are shocked when they see it (Sætre 2004). Imsdal gets an official seal of approval by the authorities, and the Norwegian Institute of Public Health gets to inform people about water quality. A consumer need for bottled spring water in Norway is about to be developed.

Figure 3.3 'More than one million Norwegians are supplied with tap water that is not good enough'.
Source: VG 11.05.1994

3.4 Advertising Imsdal

Ringnes has applied several different marketing and advertising strategies during the period that Imsdal has been on the market. In 1994 they needed dirty water pipes and a girl at Karl Johan in order to obtain consumers and to state their success. Following that they chose a futuristic setting for their advertisements where clean water is portrayed as a scarcity. Jan Hillesland, previous Marketing Director in Ringnes declares: ”As in all of our communication we play with contrasts between dirty and pure, dark and light. To make the films even more interesting they are placed in a futuristic setting which also emphasises how precious water is” (Mellum, 2002).

In 2004 they changed direction in marketing once again as the self-confidence of Ringnes increased. Helge Krane, who was marketing director at the time claimed: “We want Imsdal to be a part of every person’s survival kit: Money, credit card, mobile phone, keys and Imsdal” (Sætre, 2004). The advertisements are shot in a big city setting where Imsdal is portrayed as an accessory. In Spring 2005 they developed the urban life theme, and applied a cartoon look where everything is in black and white with exception of the Imsdal bottle (Wekre, 2005). The contrasts in colour attract our attention to the label (figure 3.4 and figure 3.5, p. 44).

Today, their aim is that consumers bring Imsdal into the refrigerator and into their domestic habitat. In September 2005 previous Advertisement and Media Executive, Oscar Michaelsen claimed that now that there is no longer any need for Ringnes to act as missionaries for bottled water, it is rather Imsdal that covers the needs for modern, urban people” (Wekre, 2005). The statement is a bit over the top, but urban people is the new target group of Imsdal, and Michaelsen argues that:

To drink Imsdal has developed from being a distinctive feature of a continental big city life into becoming a brand that more and more people choose in order to satisfy the need for a healthier lifestyle. For the people who are up to date it will be just as natural to include Imsdal in the big city life kit, as it will be to contain a twelve pack of small, cold, refreshing bottles of Imsdal in the fridge (Michaelsen quoted in Wekre, 2005).

Figure 3.4 0, 5 litre for shopping
Source: Wekre 2005

Figure 3.5 12 pack for the refrigerator
Source: Wekre 2005

3.4.1 Marketing Channels

Multimedia services offered by mobile phones is another marketing channel Ringes has used to reach established and potential consumers. The company has arranged competitions and polls where Imsdal, as well as Pepsi and Solo, has been sold by short message service (SMS) (Johannessen, 2005). As an example, in 2001/2002 there was a competition on the Imsdal bottle, where you could win a few sessions with a personal trainer by answering three questions (Ibid). By purchasing or ordering services people automatically accept an agreement to receive advertising from the advertiser, an occurrence which otherwise would be regarded as illegal without a consent from the receiver (Markedsføringsloven, 2006). The target groups of Imsdal are also groups who are frequent users of mobile phones making it the

perfect channel for marketing. The executive of Aspiro[7], Hauk Landsverk, points out that the use of mobile phone services in Norway is quite widespread compared to for instance Sweden. By using the mobile as a channel for advertising you can reach target groups from 13 to 45 years of age (Johannessen, 2005).

Product placement in film and television series is also a method of marketing that Ringnes has used in advertising Imsdal. On the 22nd November 2006 TV2 broadcasted an episode of *Hotel Cæsar* where one of the characters, Scott, came home from training handball and went straight to the fridge where he grabbed a bottle of Imsdal with a sports cap. Two observations were done: One, that he had a bottle of Imsdal in the fridge, and two, that it was a bottle with a sports cap. Imsdal is also put in a similar context in the Norwegian film *URO* that was released in August 2006 where the main male character picks up a bottle of Imsdal after he had worked out. Imsdal has also tried to reach more children by using images from the box office hit *Ice Age* from Fox Film on the 0, 33 l bottle with sports cap for children.

Collaboration with SATS, the "Nordic region's leading fitness chain" (SATS, 2005), is among other marketing strategies Ringnes have used. SATS have approximately 140 fitness centres in the Nordic region including franchises and centres operating on licences, and they have about 200.000 members where the largest age group is from 26 to 45 years old (Ibid). Ringnes have also had agreements with *Shape Up* magazine, whch occasionally brings up issues concerning how important it is to drink water, how it can help us to loose weight, prevent headaches and help keeping us focused. Water bottle suppliers often sponsor articles like these, but such information tends to be ignored by consumers.

[7] Aspiro is distributor of mobile content services

4. Commodification of Nature

The launch of Imsdal was set to a period in time when people were concerned about calories, sugar and issues related to health. As pointed out in chapter 3, Ringnes knew that a *new soft drink generation*, a group of people who prefers healthy alternatives, was approaching. The effect was that Ringnes turned to nature. In 2001 Sondre Pettersen was the Marketing Manager for water at Ringnes, and he sees it as quite natural that spring water has been transformed into a commodity. He argues that it is convenient when you are at the go because you cannot bring along tap water. Another reason he gives for consumers to spend money on water is that Norway has strong traditions for good health, and that bottled water is a healthy alternative to soft drinks. His final argument is the good quality that Imsdal possesses, and he wish to reminds us that even if Norway has overall good water it has had a rather diverse quality (Hoftun, 2001).

Water has always played an important role in our existence. Looking back in history people settled down close to water for exploiting its qualities attached to nutrition, washing, cooking, and transport. For religious purposes it is also a symbol of sanctuary and faith. It is a source of life, but as nature has proved through tsunamis and floods, diseases and absence it is also a symbol of untamed nature that leads to death. Water is not only a symbol of nature and life, but *is* nature and life itself. The process of constructing a commercial product from spring water is long and complex. In this chapter I will focus on how spring water has been commercialised from being in one with nature to a product of culture. I will try to explain the process of how spring water has been removed from its natural habitat, and then how the material has been transformed into a commodity. As a result water has changed from nature into a product that in some ways represents nature in perhaps a stronger sense than earlier. By saying this I mean that Norwegian consumers feel a stronger relation with spring water on bottle than spring water in nature and tap water. Bottled spring water has become a cultural

symbol of health and purity, where its pureness is put in comparison with dirty tap water and sugared soft drinks, a comparison enhanced by the advertisements of Imsdal. The following section will give a brief presentation of the symbolism and values attached to water in Norway.

4.1 The Culture of Water

The Norwegian mainland has a coastline that stretches 25 148 kilometres and which occupies most of its borders (SSB). The inland is also featured by water in shapes of lakes, waterfalls, fjords and rivers, making water a resource of abundance that symbolises Norwegian culture by its nature and purity, and that is exploited for electricity, consumption, washing and tourism purposes.

The fjords and waterfalls are some of the country's main tourist attractions offering picturesque views, but also myths of wicked wood nymphs and other tales of a superstitious manner. Stories about the healing power of water go far back in time and continued into the 20th Century when crowds streamed to holy sources of spring water where they sacrificed money in exchange for the water. If it was God or a creature of nature that was believed to be the force behind the healing power was a question of faith (Alver, 2006, p. 36). The sources were typically named after holy men, like Olav den Hellige[8], or by dramatic occurrences associated with the location.

In the 17th Century the social elite in Europe discovered the high level of minerals that the springs contained, and tried to kill the myths according to the magic of the spring water (Alver 2006, p. 38). This was the origin of the elite's visits to thermal spas, and to the later introduction of mineral water brands like Perrier and Vichy. In one respect it is possible to say that the associations connected to spring water and its powers to "heal" and purify is still a

[8] Saint Olaf: king of Norway from 1015 - 1028.

relevant belief. A 2005 report by Norwegian Institute for Water Research (NIVA) states that bottled spring water is of no better quality than tap water, but still distributors like Ringnes send out signals that bottled spring water is a healthier choice. Do consumers believe this, or do they buy it for other reasons? "Nature, and perceptions of water, and water in nature will always be an important arena in order to understand the human and the humane" (p. 40).

4.2 Controlling Nature

Humans try to master and control nature by manipulating it in different ways. Spring water is controlled by being bottled and distributed without loosing the magic of nature. In this way spring water can be understood both as transmitting the power of nature and modern technology at the same time (Wilk, 2006, p. 308). Still, nature is difficult to control, and with floods and tidal waves to remind us of our imperfection in controlling nature, Richard Wilk sees bottled water as a visual metaphor for control and yet a reminder of a good of which we cannot exist without (Ibid). If nature is dangerous then technology can make it safe, at the same time as the product is romanticised because it comes straight from nature (p. 309). The material is transformed on to bottles, but rather than be regarded as a fabricated product, it appears to be perceived as a product from nature that is now easier to obtain.

4.3 Commodification of Spring Water

"Commodification is the transformation of what is normally a non-commodity into a commodity, or in other words, to assign value" (Commodification, 2006)." Art critics were among the first to use the term *commodification*, and argued that by commodifying objects and activities that are not commodities by nature can get a culture into trouble (Strasser, 2003, p. 3). However, Susan Strasser, editor of *Commodifying Everything*, suggest that society and the boundaries of the realm of commodities have changed over time, making it difficult to

judge what is or is not suited to be transformed into a commodity (Ibid). Water is probably the cheapest raw material you can come across in Norway, and it has become a gold mine for breweries and advertising companies. Tap water costs approximately a couple of Norwegian øre per litre, whereas bottled spring water costs about 20 Norwegian kroner per litre. How can these numbers be excused? Jean-Christophe Agnew claims that accessibility to articles or services that are dislodged from its ordinary context both thrills and disturbs consumers (Agnew, 2003, p. 11). How has this price tag process affected bottled spring water according legitimacy, authenticity and desirability?

Bijker, Hughes and Pinch argue that the social environment shapes the development, technical characteristics and design of an artefact (Bijker et al. 1987, p. 12). In order to understand technologies we have to put them in context with how history, politics, culture, economics and psychology have influenced society. Spring water has not become a commodity because of its *internal* logic, like technology reductionism and determinists explain technology, but because of its *external* surroundings. In this context we can understand the commodification of spring water as a mirror of our society (Bijker and Law, 1992, p. 8). Spring water has become a super commodity, where it is exploited as a link between consumers and producers that have become lost in the confusion of industrial capitalism (Descola and Palson, 1996 referred to in Wilk, 2006, p. 309). Imsdal is designed and presented as the opposite image of dirt, stress and industrialism. The producer wants to remind us to take care of our selves in a polluted society where you can trust nothing to be as pure and problem solving as their product.

W. Bernhard Carlson suggest that one reason why inventors succeed in particular cultures is because they are bundles of social solution meaning that they understand the values, institutional values and economic notions of that culture (Carlson, 1992, p. 175). Two of the things that Ringnes and their partners had to take into consideration when they

produced and designed Imsdal was first, who will use it? And second, what meanings will they attach to it? The assumptions they make create a *frame of meaning* that guides them in the direction they want. Harry Collins and Trevor Pinch introduced the concept in 1992, which is similar to the concept of *technological frames* developed by Wiebe Bijker and *the script* concept by Madeleine Akrich. These frames directly link the product with the larger social and cultural values, but differ according to what factors and groups they wish to target (p. 177). In this context the frames of meaning have to keep up with trends and fashion in both design and marketing techniques in order for the producer to keep up to date with the market. Kalman Applbaum argues: "Marketing is the commoditization and signification of commoditization of ideas, people, experiences and things" (Applbaum, 1998, p. 325). New frames of meaning had to be embedded in the technology and marketing of bottled spring water as new trends attached to cultural values of health developed in Norway.

4.4 Consumption of Signs

All consumption is cultural because it involves a meaning. This meaning is shared and culturally specific (Slater, 1997, p. 132). In order to identify a need and to satisfy it we have to be able to interpret the sensation and the experience related to the object and to the environment in which we live. Baudrillard illustrates the symbolic value of commodities by giving an example of a washing machine:

> The washing machine serves as an appliance and acts as an element of prestige, comfort etc. It is strictly this latter field that is the field of consumption. All kinds of other objects may be substituted here for the washing machine as the signifying element. In the logic of signs, as in that of symbols, objects are no longer linked to in any sense to a definite function or need. Precisely because they are responding to here to something quite different, which is either the social logic or the logic of desire, for which they

> function as a shifting and unconscious field of signification (J. P. Mayer quoting Baudrillard in Jean Baudrillard, 1998, Foreword).

Baudrillard is quite radical when he suggests that we consume signs (messages, images) rather than commodities, meaning that a bottle of Imsdal can be replaced by a bottle of Coca-Cola if it had had the same references to nature as spring water does. We know the codes of the commodities, and learn to consume the "right" meanings. In this respect, commodities will be defined by what they signify and not by their use (Ritzer, 1998, p. 7).

To explain the symbolic process of consumption there are several discussions regarding whether there is a relation between the object and the subject. Do humans just use objects, or is there a link between the two? One theory going back to Descartes argues that, "objects are assimilated into the subjective experience of individuals … We collect, use, make, own and transform objects according to the aims, goals, desires, and needs posited by human subjects" (Slater, 1997, p. 102). By consuming Imsdal we absorb its cultural value and take possession of its purity and health. Spring water is just an object that is available in nature where subjects are reason whereas objects have no conscious. Objects first obtain meaning when the subjects, meaning the users or the consumers, put them in a context of utility. Hegel, on the other side have the opinion that subjects and objects are interrelated in that humans actively engage with objects through moulding, shaping and developing them in relation to our own needs. Through this activity do humans interfere in the object world, and by transforming objects we also transform the world we live in, our reality. This process does not imply that humans simply transform objects according to our defined needs, because the new human world is objective and become our new environment in which we continue to refine and define needs and desires (p. 103).

Hegels theory can be used to argue that relevant social groups interpret spring water and give it a symbolic value according to their reference to Norwegian culture and history. At

the same time they use these objects to define their needs and themselves based on the following: First, they state that spring water has certain cultural values. Second, based on their environment and the objects they have participated to transform and develop, they discover that they need to possess these values that spring water represents, and one way of obtaining them is through consumption. “Society reappropriates its own external form – that is, assimilates its own culture and uses it to develop itself as a social subject” (Miller, 1987, p. 17 quoted in Slater, 1997, p. 103).

4.5 Social Identity

Social identity theory is, among others, developed by Henry Tajfel, and consists of social psychological theories concerned, among other things, about psychological and sociological aspects of group behavior: We identify ourselves with the group that we perceive ourselves to belong to. It is related to the idea behind Festinger's notion of social comparison from 1954 because in order to evaluate ourselves we compare ourselves with similar others (Cultural identity 2006).

The marketplace is culturally and socially constructed, a medium that represents our social structure and social reality. The meaning that is attached to goods and services would not have any value unless consumers can relate it to something cultural, associations often applied by market forces in order to create or intensify these needs and desires. It is the capability of the market to offer a variety of selections in goods and services for consumers who in turn make the preferences according to their needs and desires. These preferences construct a self-initiated social identity for the consumer (Applbaum, 1998, p. 325). Baudrillard’s theory of sign saturation of consciousness describes how needs are mystified and transformed into commodity signs for consumers in modernity. “Categories of objects have become fetishized into categories of persons, ‘stereotyped personalities’, complete with

a set of distinguishing values that constitute a' new foundation of group morality'. This is a radical view, but his point is that given the nature of this fetishization, individuals have no choice but to seek to 'actualize themselves in consumption'"(Baudrillard, 1988, p. 12 quoted in Applbaum, 1998, p. 332). Cultural signs and values are attached to commodities displayed in advertising, and consumers use these commodities in order to create a social and cultural identity (Cultural identity, 2006).

5. Marketing

In 1994 there was an article in *Aftenposten* where the journalist argues that the Norwegian history of spring water production consist of nothing less that naïve optimists, lost millions, bankruptcies, germs and celebrities. The optimists all say that sooner or later someone will make money on Norwegian spring water, but where are the consumers (Sæthre, 1994)? In 1993 MMI carried out a survey where they asked 1566 women and 1492 men aged fifteen years or older about how often they buy bottled or canned water? 74 percent of the participants claimed that they never purchase it, while 13 percent say they buy it less than once a month (VG, 1994, July). In 2006 Visendi carried out a similar survey for the Coca-Cola Company where 1349 people participated. The result shows that 69 percent of the participants aged 16 to 29 think that bottled spring water is trendy while more than 28 percent of the adult population buy bottled spring water at least once a week (Hauge, 2006). What is the reason for this change? In 1994 both Norwegian Water Export A/S and Sauda Kildevann A/S suggest that they went bankrupt because they did not give priority to marketing (Sæthre, 1994). In this chapter I will look at why marketing and market research is a decisive factor when launching a new product, and analyse how Ringnes have structured and used marketing techniques in order to construct a successful product.

5.1 Market Research

"Marketing is the process of planning and implementing the conception, pricing, promotion, and distribution of products to satisfy individual and organizational objectives" (Atac, 1985, p. 2 quoted in Applbaum, 1998, p. 325). However, whereas marketing is about circulation and distribution, advertising is about representation and how the product is perceived by the public. (Sawchuck, 1994, p. 95 quoted in Applbaum, 1998, p. 326). The explicit marketing and advertising techniques used by Ringnes are probably the main reasons why we buy

bottled water. These have also been central in the process of constructing a need for bottled spring water by their references to Norwegian nature and culture. ”Customers don’t always recognize their needs, can’t verbalize their needs, [but] can articulate needs only in terms of the familiar” (McGee and Spiro, 1988, p. 43 quoted in Applbaum, 1998, p. 326).

Technological and economic progress from around 1850s and onwards gave new opportunities for business far beyond the local communities, which made it impossible for companies to keep a two-way communication with consumers. On the other side, consumers tried to get a general view of new goods, but the world of commerce had expanded too far. Brands, new forms of management, new networks of distribution and advertisements replaced personal interactions between producers or retailers and consumers. A new way of organising and receiving feedback from consumers was developing into what we now call market research (Koehn, 2001, p. 6). The private consumption has increased to the double since the 1980s, whereas expenditure related to marketing has increased with 800 percent during the same period of time (Dokk Holm, 2004, p. 35). Table 5.1 shows the development in total food and drink advertising expenditure in Norway from 1995 to 2005.

Table 5.1 Total advertising expenditure of food and drinks in Norway in 1995 and 2005 (1000 NOK)

	Newspaper	Magazines	Journals	Posters	Cinema	Radio	TV	Total
1995	75 116	117 564	9 620	56 923	29 327	43 009	644 317	975 875
2005	169 291	163 323	36 943	160 391	42 448	70 904	1038 532	1681 833

Source: Medienorge 2006

Consumer behaviour developed as a discipline in the late 1950s. The field of study investigates *how* people buy, *what* they buy, *when* they buy and *why* they buy (Consumer behaviour, 2006). In 2002 David Kahneman won the Nobel Price in *Economic Sciences* for

psychological and experimental economics, a method where he has used psychology by categorising values, emotions and expectations in order to understand consumer behaviour (Myklebust, 2004, p. 367).

In 1997 a group of neuroscientists formed Neurosense Limited in Oxford England, which was the first specialist consultancy of its kind providing cognitive neuroscientific methods like brain scans in order to see how consumers respond to products, advertisements and packaging (Neurosense 1, 2007). Subjects are positioned in magnetic resonance imaging scanners (MRI) where they are exposed to images, tastes and smells while being observed on how the brain respond to these. They claim that they can quantify and localise when the pleasure centres in the brain is activated, and therefore can analyse our behaviour patterns of emotion, attention, memory and decision making, and by this knowing what marketing techniques firms should apply (Neurosense 2, 2007). Issues concerning ethics and moral must be raised in this context, and demands an evaluation of the companies that use these methods. Ringnes is interested in this method of market research, and has been in contact with Neurosense Limited (Østtveit, 2005). Neuromarketing might be a tool companies use in order to find the correct design or marketing technique that will appeal to the relevant target group. It will involve less risk for companies who will know have power to shape the meanings attached to the commodities. In this way, producers might be able to control the interpretive flexibility by knowing how and why certain artefacts will *work* for some, and *not work* for others.

5.2 Knowledge Production

The social production of a commodity is linked with the social production of knowledge (Lien, 1997, p. 19). The relevant social groups and the producers of knowledge contribute in the construction of a need and a desire for Imsdal. The marketing strategies enhance these

needs, and even if producers want it to appear as linear, it is often adjusted as a result of trends and occurrences in society. “The processes that shape our technologies go right to the heart of the way in which we live and organise our societies. Understanding these processes might help us to create different or better technologies” (Bijker and Law, 1992, p. 4).

Knowledge of the material and the social conditions were important throughout the construction of Imsdal during controversies of design, advertising and stabilisation. Bruno Latour defines knowledge as “whatever enables a person to handle whatever s/he encounters with the familiarity of previous experiences” (Latour, 1987, p. 219 quoted in Lien, 1997, p. 19). Knowledge can be achieved by personal experience or through written or oral communication. Common challenges with exchanging knowledge are the gaps represented by space and time. Latour suggests that one must invent means that are mobile and stable, so moving back and forth will not lead to distortion, corruption and decay. Lien follows this and suggests that in the context of marketing department, familiarity with distant events, places and people can be achieved within the framework of knowledge referred to as marketing and marketing research (Lien 1997, p. 21). However, knowledge within marketing is rarely explicit, but exists within the institutionalised expert system, or is tacit within the individual. “Knowledge may be defined as a component of culture that is recognised as knowledge within a social context” (Ibid).

When transforming a material from nature to a commodity there will be several factors of uncertainty involved. Marketing is one of these vulnerable processes as it often is the first introduction of the product to the public. In order to reduce uncertainty it is important to acquire and to produce knowledge. This applies to both the process of development, meaning the technological process, and the construction of the verbal and visual communication (Lien, 1997, p. 5). Marketing is a process where experts make use of information and interpretation, and combine these into symbols that have a cultural meaning for the reader as described in

chapter 3. Marketing is knowledge 'how to' (p. 11). Marianne Lien stresses that it is necessary to distinguish between the global and the local in marketing, "between the decontextualized system of knowledge and the cultural idioms and commodities that marketing mediates", meaning how "differences are constructed between global structures and local interpretations in a specific empirical setting" (p. 13). The marketing techniques that work in Norway may not necessarily work in other countries. This is relevant to the display of dirty water pipes, the futuristic portraits of water as a resource of scarcity and Imsdal as an accessory.

5.3 Imsdal and Gender

The use of marketing strategies and advertisements of Imsdal implies that young women is one of the main target groups of the product. Baudrillard argues that the media and advertising simulates relationships by simulating a feeling of intimacy between the producer and potential customers that actually does not exist (Ritzer in Baudrillard, 1998, p. 13). Ringnes have used advertising in order to create stable alliances between the producer and the consumer that ideally will secure its future existence and position (Lien, 1997, p. 18). As an example, the futuristic advertisements display a self-confident woman who has a strong urge for the bottled spring water. She is portrayed as unafraid, focused and athletic while fighting men, physically or psychologically, who are characterised as ignorant, uncivilised or greedy. However, the strong representation of women does not appear to claim Imsdal as a product exclusively for women, as the description of the consumer also appeals to men. After all, Ringnes want to profit, so they certainly want men to buy their product too. The company collaborate with health studios like SATS and health magazines like *Shape Up*, which display Imsdal to all consumers who are concerned with health. However, young women appear to be more concerned with trends, health and diets, so they might be easier to influence.

In 2004 Ringnes moved away from the futuristic setting that had been their arena for the last eight years, and towards a more familiar setting of the big city life (Fossbakken, 2004). Previous Advertising and Media Executive, Oscar Michaelsen made a statement where he claimed that earlier advertisement campaigns had been successful in that their target group now perceives Imsdal to be the purest and most modern Norwegian water on bottle made for young and active big city people (Ibid). However, the reason for changing approach was that consumer research showed that there was a need to relate the target groups' life situation to the product, which implied that the futuristic setting was too alienating. Michaelsen claims that the purpose of the new advertisements was to indicate that Imsdal is an accessory of a young woman's urban outfit (Ibid). The women's magazine *Det Nye* was the only example of printed media, besides television and cinemas, where the new Imsdal campaign was advertised (Ibid). The reason why Ringnes chose *Det Nye* as a channel for advertisement is most likely related to the magazine's slogan: "*Det Nye* has been Norway's leading trendsetter for young girls for more than 50 years" (Det Nye, 2007). Magazines can be divided into several categories according to the target group they address. Advertisers and publishers also know that a copy of a woman's magazine often have five to fifteen other readers besides the purchaser (Bignell, 1997, p. 58). Fifteen to thirty percent of these are men (p. 60), meaning that Imsdal will even reach men through advertising in women's magazines. However, more direct references to male consumption of Imsdal can be identified through product placement in television series and in feature films.

5.4 Branding

The privatisation of water has resulted in that Norway exports water to the USA, while the USA exports water to Sweden. How can this be excused when millions of people struggle every day in areas like Africa south of Sahara, and in South and East Asia because they lack a

supply of safe and clean water? (World Health Organisation, 2003). Marketers transform normalities into high valued commodities and create new trends with the power of branding. What used to be a public good has been transformed into a branded commodity.

It can be difficult to distinguish commodities from brand products, but central features of a brand product are that it has a personality, consumer loyalty on a long-term basis and price (Lien, 1997, p. 106). In addition it is "a product with a dominant position, i.e. high market share, high degree of distribution, high knowledge (among consumers) and something 'unique'. For food products in particular: The customer is willing to pay an 'extra price' for the brand product, and a majority will choose the product in a situation with several competing alternatives" (p. 107). Imsdal is regarded as one of the strongest brands within bottled spring water in Norway. Reasons might be that it was the first to break through on the market, and because it has a trademark that appeals to traditional culture.

5.5 Perception of the Eye

Jan Blichfeldt, previous director of Bates, Backer and Spielvogel, the advertising agency that Ringnes used to market Imsdal in 1993, claims that 80 percent of the taste is in the mind and our strongest organ of perception is the eye (Hoftun, 2001). References to tests show that taste does not motivate consumers into buying bottled water (Hauge, 2006), so producers struggle to differentiate their products by looking for signs that connotes their image. The value of signs are especially important for brands where products appear to be functional similar. The sign, the commodity and the social relation blend into one signifying field that act upon our subconsciousness. The consumer is emotional and not rational when it comes to choosing tap water or bottled spring water. We see a bottle of Imsdal, and the brain make associations with thoughts and connections we make with the product, mainly the trademark. When Ringnes run advertisement campaigns in the newspapers that displayed dirty water pipes, they had the

purpose to raise questions regarding the quality of tap water by showing us the dirty pipes that passage the tap water to our homes. At the same picture there would be the Imsdal logo, telling us that there is a purer alternative. The designer of the Imsdal logo, Bjørn Rybakken, dislikes this way of marketing Imsdal because the dirty pipes draw bad associations to the clean spring water (Rybakken 2006 [interview]). It has the exact opposite effect than what Imsdal wants with the advertisement. Instead of thinking dirty pipes and clean water, we remember the strongest image of the two, which in this case is the dirty pipes, and transfer those feelings to the water. A better way for Ringnes to do marketing would for instance be to support a campaign that works to improve the water pipes. There could be brochures with several pictures including people giving statements about the quality of the tap water, and in the end there could be an advert of Imsdal. This would create positive technological frames, and a positive image of the brand as being concerned with health and water quality.

A market strategy is about the vow that the producer or the distributor promises its consumers. Ringnes promises that Imsdal is pure water. All the other associations that shape the trademark are values and emotions that are added later on (Blichfeldt, 2004). However, a trademark cannot be constructed without communication. Advertising agencies take a commodity and fill it with emotional values. The emotional values create an atmosphere that gives the commodity certain qualities of lifestyle. These qualities are transmitted on to the consumer, which he or she interprets, and which in this case might give him or her feelings of experiencing a healthier and an up to date lifestyle, where he or she is associated with the natural and pure content of water. The power of marketing is strong, and advertising agencies know exactly how to push our buttons in order to feel a need to obtain a certain commodities as well as the value of symbolism and identity that it contains.

6. A Need for Imsdal

"It is not an overstatement to claim that through Imsdal Ringnes has taught the Norwegians how to buy and how to drink bottled water" (Statement quoted from Imsdal's official website, Imsdal 1, 2006).

Ringnes takes full credit for the *water bottle culture* that appears to be a present trend in Norway, but I understand bottled spring water to be a result of several social processes that have taken place. As Bijker points as in relation to social construction of technology: "Society is not determined by technology, nor is technology determined by society. Both emerge as two sides of the sociotechnical coin during the process of artifacts, facts and relevant social groups" (Bijker, 1995, p. 274). Sociotechnical is a term where Bijker refers to the relations between the social and the technical.

When it comes to the social construction of a commodity, Ringnes is just one out of several actors that have participated in shaping Imsdal. By using the concept of technological frames, I will analyse how relevant social groups limit or expand the use of an artefact by doing their own interpretations of this particular product. Users or consumers of Imsdal might as an example find new definitions of how it can be applied and be useful for them, and therefore find other practices of use than what the producer anticipated. These new ways of utilizing the product might be adapted by other users which might result in that the product has gained a new function, and as a result contribute in constructing a need for the product. In this chapter I will therefore analyse how it is constructed a need for bottled spring water in Norway, who the main actors are, and try to identify the social processes that have shaped Imsdal by using terms and concepts from the SCOT approach.

6.1 Relevant Social Groups

Bijker uses the term seamless web by emphasising the importance of the nontechnical factors for understanding the development of technology. A deeper interpretation of the term is that there should not be made any a priori distinctions between the components, meaning the social or the technical, science or economics (Bijker, 1995, p. 13). Engineers and inventors function as system and network builders as much as constructers of technology. In this sense Bijker includes all relevant social groups in the seamless web by emphasising that not only engineers construct technology, but that all sorts of people contribute to a social construction of facts and artefacts. In fact, in order to understand technology as a social process of development one has to look at the relevant social groups to avoid technological determinism.

"If we want to understand the development of technology as a social process, it is crucial to take the artefacts as they are viewed by the relevant social groups" (Bijker, 1995: 49). Relevant social groups can be identified by reading historical documents, and by identifying the social groups that are mentioned in relation to that artefact. There will, however, always be individuals and groups of people who are ignored because their voices are not heard by different reasons. Thus, there have been several relevant social groups who have, intended or unintended, been involved in developing and shaping Imsdal. Some of the main contributors are Ringnes, Tangram Design, Backer Spielvogel and Bates, media, Norwegian Food Safety Authority, AC Nielsen, Norwegian Institute of Public Health, Professor Lindholm and Water and Sewerage on Agenda, Norwegian Institute for Water research (NIVA), and users and non-users. These actors have all contributed in a heterogeneous process with different levels of inclusion (Bijker, 1987, p. 174).

6.2 Construction of a Need for Clean Water

When Ringnes launched Imsdal in 1994 they soon realised that consumers in Norway needed a rational reason why to spend money on a product that could be obtained for free. Imsdal had a practical value, but consumers had no symbolic relationship to the object making it difficult to identify the functional value (Baudrillard, 1969, p. 62). Tangram Design and Ringnes had developed a good design with cultural connotations, but this was not enough to sell bottled spring water. In order to shape meanings of potential users, Ringnes and the advertising company Backer Spielvogel and Bates constructed a need for it by saying that the water we get from the tap is not as clean as we think it is, and presented Imsdal as the solution to the problem.

6.2.1 The Power of Media

Media advertising is a common tool of marketing and used in order to shape meanings of relevant social groups. In 1994 newspapers printed advertisements of Imsdal that displayed pictures of dirty water pipes (figure 3.3), and consumers were disgusted to see where the tap water was coming from. The launch of Imsdal was set at a time when discussions surrounding tap water quality was a general hot topic in the media. It is difficult to say whether this was a coincidence or not, but articles on the theme tended to blossom in warmer seasons when the population was hot and thirsty. Some were written by researchers, others by firms that were selling water filters and water dispensers while hiding their agenda by using undocumented facts (Drammens Tidende, 19. august 1997). In February 2002, the Norwegian Broadcasting Corporation (NRK) broadcasted a documentary in *Brennpunkt* raising a debate regarding use of chlorine and other chemicals in tap water, and how these might provoke cancer. The aim was to kill the myth regarding the pure Norwegian tap water. The programme scared a lot of people, and evoked a high level of reactions. All of a sudden do people realise that they *need*

bottled spring water, and the process of rationalisation is complete. Between 1999 and 2003 Ringnes experienced a 74 percent increase of selling Imsdal, and a large share of this is because of advertisement and focus on issues concerning tap water quality in the media (Sætre, 2004).

Ill from water is another documentary that was broadcasted on *Brennpunkt* in January 2006. Once again they pick up the controversy about the myth concerning the pure tap water in Norway, and we are faced with arguments that our tap water can make us ill. The water works are in poor conditions, and cannot filter certain parasites called Giardia and Cryptosporidium (NRK1, 2006). These parasites live in waters that can strike 1, 4 million Norwegians with death as a worst-case scenario (Ibid). It might not be NRK's intention to boost the sale of bottled spring water, but it is situations like these where Ringnes can step forward and encourage consumers to take responsibility in their own hands, as the state is not up for the task to supply us with healthy tap water. In the following section I will analyse how a relevant social group of non-users have participated in constructing Imsdal by how they interpret tap water quality, and therefore give bottled water certain technological frames based on this knowledge.

6.2.2 Campaigns and Dirty Water Pipes

Non-users of artefacts can also be categorised as a relevant social group because their meanings can influence other relevant social groups. In 2005 Richard Wilk performed a survey in the USA where 34 percent claimed that they never buy bottled water because the price is too high, they have preferences for other beverages, environmental critiques for the use of plastic, and objections to profit-making to large corporations like Coca-Cola (Wilk, 2006, p. 315). Bottled water for this group has an interpretative flexibility that does not work, meaning that bottle water plays a role that has no meaning for their activities. They have

therefore no inclusion in the construction of the product, and can happily live on without it (Bijker, 1987, p. 174). Their meanings might however contribute in how others interpret and find reasons to need or desire the product, and the following is an example of such a case.

A relevant group of non-users attached to bottled water in Norway is *Water and Sewerage on Agenda*, which was a campaign running in the late 1990s into the early years of 2000, which worked to improve water - and sewerage pipes in Norway. In 2001 22 percent of Norwegian households had poor drinking water quality, and a level of humus so high that it could cause danger for dissemination of diseases. The bigger cities came better off compared to the average condition throughout the country, but the Norwegian Institute of Public Health accounted that the water pipes in certain areas in Norway were in such bad conditions that waste water forced into the pipes, and was probably being responsible for 100 000 – 300 000 sick days a year. The water pipes were old, most of them built with materials of lousy quality from right after World War II (Hjukse, 2002). Oddvar Lindholm is professor at the Department of Mathematical Sciences and Technology (IMT) at the Norwegian University of Life Sciences. He sat as technical specialist for *Water and Sewerage on Agenda* where his motivation for joining it was a general concern for the quality of the water mains. He felt that the authorities tended to focus on visible infrastructure like for instance roads and airports, and ignored the situation. His concern surrounded the effects on the community if the water system broke down. Today, he claims that the situation is completely different with just a few areas struggling with poor tap water quality. He cannot say to what degree *Water and Sewerage on Agenda* can be credited these improvements, but he is aware of that a distributor of bottled water exploited the discussions they had on water quality. The result was that consumers got concerned and purchased bottled water as a substitute to tap water. However, their intention was not to boost the bottled water market, and considers it as an unfortunate effect of their work (Lindholm 2006 [phone interview]).

The interesting element in this case is how Ringnes took advantage of the situation with the water pipe controversy. They introduced a product by focusing on a problem: dirty water pipes and poor tap water quality, and offered a solution: expensive spring water on bottle. They attempted to close the controversy in a rhetorical move by displaying pictures of dirty water pipes, and compared these to pure spring water, which they implied would bring consumers closer to nature. This is emphasised by the slogan: "Imsdal: kilden til et renere liv", which can be understood at two different levels: "Imsdal: the *spring* to a purer life" or "Imsdal: the *source* to a purer life". Consumers like the idea, but why do they see this as an option instead of demanding better infrastructure as a better long-term solution? When introducing a new product on the market it is common marketing strategy to focus on a problem (poor water quality), and then introduce the solution (bottled spring water). In the following section I will look at how the public sector regards the poor tap water and bottled spring water controversy.

6.2.3 Tap Water and Germs

Norwegian Institute for Water Research (NIVA) is the leading institute for environmental issues related to water, and Imsdal's spring water bottles carry their logo as a mark of quality. Imsdal is the only bottled water brand in Norway that has permission to use it, but this is the result of an old gentlemen agreement, rather than a reference to Ringnes as the only approved producer of bottled water in this country.

In 2005 NIVA completed a campaign called *Germs in Drinking Water*[9]. It was a campaign concerning water quality where 173 schools in Norway including one school each from Denmark, Finland, Iceland and Sweden participated. All the schools received equipment and instructions to test and analyse the level of germs in different types of drinking water like

[9] Bakterier i drikkevann

for instance tap water, water dispensers, bottled water and boiled water. One of the findings was that there was a higher level of germs in bottled water and water dispensers compared to tap water, which had a general good bacteriological water quality even if there might have been differences in taste (NIVA, 2005). Bjørn Faafeng, Public Relations Manager in NIVA says that one of the aims with the campaign was to show that there are germs in clean tap water, and to point out that this is fine (Henmo, 2006). "Water that stems from lakes and creeks has a large level of germs, but the risk of drinking it depends upon whether it has been polluted by dead animals, excrements or unrefined wastewater" (Ibid). Germs that cause diseases usually stem from the gut, either from human or warm-blooded animals, and this is the reason why it is important to keep water mains and water pipes secure.

6.2.4 Conflict of Interest

Consumers get caught between public and private sectors, which both argue that *they* can supply us with the safest and purest water. However, shall we trust the authorities or profit-making corporations? Richard Wilk use Beck's concept of *risk society* to argue whether bottled water can be understood as nature preserved from dangerous chemicals and microorganisms, or to what degree tap water "represents the human interference with nature that poses 'new and extreme hazards to life' (Wilk, 2006, p. 316). Wilk concludes that instead of questioning risk, consumers should ask which supplier they distrust the least (Ibid).

Ringnes claims that a focus on health issues has resulted in that an increased number of Norwegians prefer pure spring water to tap water (Ringnes 4, 2006). By stating this they imply that tap water is bad for our health, but is this a twist of facts? Users who might have been thinking that bottled spring water was expensive compared to tap water, experienced that if they compare it to other drinks it has the same price, but is a healthier alternative. Ringnes eventually stopped advertising Imsdal by comparing it to tap water, when they realised that

relevant social groups found other interpretations of the product, and made a *redefinition of the problem* in order to reach more consumers (Bijker, 1995, p. 85). How do users apply Imsdal? How could Ringnes modify it into a user-friendlier product? Today, large shares of consumers buy Imsdal for reasons that will be discussed in the following sections.

6.3 The Healthy Alternative

People drink and buy bottled spring water because of what is not in it. It is fresh, natural and healthy, and guarantees a quality and a taste that not all local drinking water suppliers can fulfil. Still, more important today is that bottled spring water has become a popular drink because of the healthy associations connected to drinking water.

In a report by the Directorate for Health and Social Affairs called *Development in Norwegian Diet 2005*, it is stated that Norwegians drink less sugared soft drinks today compared to recent years even if the consumption is 10 times as high today as it was in the 1950s. Whether we drink less sugared soft drinks because of an increased focus on health, or if it is a result of marketing campaigns by distributors of bottled water is left unsaid. Perhaps it is a combination of both. Still, because of accessibility in convenient stores and gas stations it appears that consumers who are concerned with their health are more conscience when faced a choice between buying bottled water and sugared soft drinks.

ACNielsen is a provider of market research information, and they report that from July 2005 to July 2006 Norwegian consumers spent 200 million kroner on bottled spring water in grocery stores (AC Nielsen, 2006). Table 6.1 (p. 70) shows that we purchased more than 14, 4 million litres of spring water, which leaves about 3, 1 litre per capita. Convenient stores and gas stations are not included in these numbers. This is a 51, 3 percent growth compared to the same period last year. Imsdal is the market leader within bottled spring water with 57 percent of the market shares (Matportalen, 2006).

Table 6.1 Revenues of drinks sold in grocery stores in Norway from 24.07.04 – 23.07.06

(Revenues from convenient stores and gas stations are not included)

Sales in volume (1000)				
	52 weeks per 24.07.04	52 weeks per 24.07.05	52 weeks per 23.07.06	Percentage of change
Total spring water	8 934	10 713	14 432	34,7 %
Total carbonated water	39 853	45 922	49 833	8,5 %
Total soft drinks	367 146	364 072	369 161	1,4 %
Total sweetened soft drinks	98 276	121 705	140 369	15,3 %
Total sugared soft drinks	256 070	229 309	211 961	- 7,6 %

Source: ACNielsen 2006

Consumption of sugared soft drinks reached its peak in 1997 when the average consumption of sugar sweetened soft drinks was 93 litres per capita. In 2003 and 2004 the trend appeared to go down with 85 and 79 litres per capita (Sosial- og helsedirektoratet, 2005). Even if there is a remarkable difference between how much bottled spring water and soft drinks we consume, a tendency implies that we drink less sugared soft drinks now than during the last few years. Numbers from ACNielsen also show that we appear to substitute sugared soft drinks with diet soft drinks that are sweetened with other ingredients than sugar. On a world basis Norway comes as number three in consuming carbonated soft drinks, both sugared sweetened and other sweeteners. In 2004 we consumed 113 litres per capita, only surpassed by the USA with 201 litres per capita and Ireland with 120,3 litres per capita (Bryggeriforeningen, 2006).

6.4 The Social Context

The market is usually separated into two sides, supply and demand. Goods and services, organisations and capital determine supply whereas demand is often determined by factors like consumer needs and priorities (Koehn, 2001, p. 2). Nancy Koehn stresses that economic

and social change often determines both sides, and this is a relevant factor for the success of Imsdal. Ringnes was aware of a future focus on health issues as well as the fact that teenagers as well as people in general have more money to spend on commodities than ever, and identified a growing need for nonessential products such as bottled spring water. A research done by Synovate MMI reports that youth in Norway today spend about 1, 6 billion Norwegian kroner at personal consumption each month. More than 70 percent of the total is spent in convenient stores and on mobile phones. The age group between 20 and 24 years old spend about 3.480 Norwegian kroner a month, whereas teenagers from 16 to 19 years old spend about 1.886 Norwegian kroner a month (Forbrukerlære, 2006). The personal consumption of these groups is capital that marketers are fighting for. Ringnes considers teenagers to be one of their main target groups. A report from March 2005 by The Ministry of Agriculture and Food called *Food and Health* (Forbrukerrådet, 2005) suggests that teenagers are concerned with their health, and that bottled water is a good alternative to sugared soft drinks. The reasons for initiating the project are the government's concerns for increased corpulence, overweight, diabetes, cancer and heart diseases among children and teenagers. However, healthy products like bottled spring water tend to be perceived as expensive, and teenagers feel that they get more of their moneys worth when buying a bottle of sugared soft drink (Ibid).

6.5 Users, Consumers and a Need for Water

In the mid 1990s Ringnes had a vision of seeing a young girl walking down Karl Johan carrying a bottle of Imsdal. The aim was accomplished, and is now replaced by a wish to bring Imsdal into people's homes by launching different sizes for different purposes of use (Gram, 2005). In 2005 Ringnes said good-bye to 8 years of futuristic elements of marketing by focusing on the role of Imsdal in the everyday lives of modern urban people (Ibid).

Marianne Lien suggests, "Through advertising, producers have the chance to create a message that reflects *their* interpretation of the … product" (Lien 1997, p. 18) Consumers will hopefully incorporate these interpretations, and eventually turn the product into a habit. Technologies, or artefacts are *designed in use*, which means that users and consumers shape Imsdal because of how they limit and expand the use of the product, and therefore define its functionality. Consumers are not passive victims, but take part in constructing products indirectly while their needs and desires are intensified and rationalized according to the existing tendencies (Applbaum, 1998, p. 325). Consumers give meaning to products based on the wider sociocultural milieu, and in this case it represents values of health that is a current trend in Norway (Pinch and Bijker, 1987, p. 46). Still, the interpretive flexibility of Imsdal is various, and individuals might identify different perspectives and therefore belong to more than one frame of meaning. The degree of inclusion depend on how active they are in using the product, finding new ways of utility or solutions to problems attached to it (Bijker, 1987, p. 174).

Different relevant social groups have brought along Imsdal to the gym, in their bag while shopping, at schools and universities and so on. For these users the original content might not be of significance whereas the bottle might function as a carrier of tap water. Their interpretations of Imsdal have resulted in new designs and shapes that have been applied to their *practice of use* (Bijker 1987, p. 171). "Each problem and each solution, as soon as they are perceived by a relevant social group, changes the artefact's meaning, whether the solution is implemented or not" (Bijker 1995, p. 53). Stabilisation of Imsdal has resulted in more technological frames, and more relevant social groups. Bijker states that technological frames can never structure the interaction of the members in a social group, because of the different levels of inclusion in the frame (Bijker 1987, p. 173). Still, "On the one hand, a technological frame can be used to explain how the social environment structures the artefact's design. […]

On the other hand, a technological frame indicates how existing technology structures the social environment" (Ibid). Ringnes and its designer team define actions, motives, behaviour of the consumers and the world they live in and inscribe these into the product. Madeleine Akrich calls the final product of this process a *script* or a *scenario* (Akrich, 1992, p. 208). In this way Ringnes use the product as a framework of how the bottle and the users will interact. The bottle with sports cap was designed for 'people on the move' (figure 6.1). The name gives away the associations Ringnes wants us to make with the product, where the new cap not only gives an easier access to the content, but it looks cool and sporty. The sports cap bottle is also released in a smaller version where the size and label is designed and adjusted for children (figure 6.2).

Figure 6.1 Imsdal 0,6 litre with sports cap
Source: Imsdal 1, 2007

Figure 6.2 Imsdal 0,33 litre for children
Source: Imsdal 1, 2007

6.6 The Success of Imsdal?

The media participates in normalising bottled spring water by stating how much sales have increased from year to year. They use percentages instead of actual numbers, and the population is amazed by how much bottled spring water we consume. In reality there is a huge gap from bottled water up to soft drinks. In 2005 we drank 369 161 litres of soft drinks, both sugar sweetened and sweetened with other substances, compared to 14 432 litres of bottled spring water (Table 6.1). Runar Døving and Arne Dulsrud are researchers at SIFO

where Døving has been contacted by advertising – and communication agencies that want him to contribute in normalising bottled water. Døving has considered the amount of money that consumers actually spend on bottled water compared to tap water, and has refused to make a statement (Dulsrud and Døving 2006 [interview]). Researchers like Dulsrud and Døving can influence how people interpret bottled water, and can indirectly shape patterns of consumption and use. Their opinions can therefore be of high value for producers and distributors. Ringnes works to normalise bottled spring water, and use tools like television advertisements to reach us at home. It is a strategy aiming to make us picture the commodity in our own setting, and is an attempt to turn bottled spring water into a daily necessity. They want consumers to fill up their refrigerators at home, so that Imsdal is not only available and sized for handbags or for activities when we are at the run.

Runar Døving claims that attempting to bring Imsdal into our homes has been a rather unsuccessful marketing strategy, and according to SIFO's research of consumer patterns it appears that it is a strategy doomed to fail (Dulsrud and Døving 2006 [interview]). Ideologically, Norwegians are still contradictive when it comes to spending money on water, a product that they can obtain for free. Norwegian consumers operate with clear distinctions between public space and private households. If the tap water supplied at home is fine, then they will be regarded as fools for spending money on bottled spring water. In this situation the price of bottled spring water is a determining factor. When we are on the run and away from home we permit ourselves to be more exclusive, and money does not count in the same way. The feeling of stupidity for purchasing water to the household is replaced by a positive feeling where we choose water as a healthy alternative to other drinks. In such a manner it is possible to say that bottled spring water is a success. Norway has still a modest use of bottled water, but the realm of water has expanded and includes international certifications and standards, annual international water tasting arrangements (Berkeley Springs 2006), water bars with

water sommeliers and cooking classes advising you how to match particular water to the right kind of food. In the USA you can even buy water with antioxidants and minerals that burn fat (FineWaters, 2006). Still, the vast population of Norway drink tap water where Imsdal remains as one out of several options of drinks available on the market.

7. Conclusion

The aim of this thesis has been to identify the social processes that are involved in commodification of nature, and constructing a commodity and a consumer need in a commercial society. I have approached this by studying how spring water has been commodified, and analysed how culture, commercial interests, public institutions, users and non-users of Imsdal intervene in a complex social process, which constructs needs and desires for a commodity at the same time as it constructs and moulds the artefact's shape and design. In this context I have used Bijker and SCOT as theoretical frameworks in order to avoid a deterministic explanation of technology. Thus, SCOT does not explain how technology has affected social relations, or why we interpret artefacts in certain directions. In this perspective I have turned to culture studies, and the radical perspectives of Baudrillard, in order to understand the cultural symbolism that is attached to spring water, both in nature and as a fabricated product, and analysed how relevant social groups shape and develop technology, or artefacts, according to existing tendencies.

Ringnes was the first producer and supplier to turn bottled spring water into a successful commodity on the Norwegian market, and Imsdal has been the leading agent of bottled water for more than ten years. Still, statistics from ACNielsen and Hansa Borg show that competition from other brands like Olden is getting tougher (Hansa Borg, 2006). Ringnes entered the bottled water market as a development based of their prior knowledge and skills in the beer and mineral water industry. Factors that have determined their success are, one: they had the capital and an established network of distribution, two: they identified the value of marketing, and three: they adjusted the marketing strategies according to the cultural changes in society by changing focus from the elementary and nature to individualism and the urban.

In 2005 consumers in Norway spent 182 million Norwegian kroner on bottled spring water (Dagbladet, 2006). These numbers suggest that bottled spring water has a meaning and

a function that cannot be substituted by tap water. Roland Barthes argues that an object has two purposes: to be *denotative* and *connotative*. Denotation is its material and functional value, and connotation is the conceptual meaning of the object (Dokk Holm, 2004, p. 51). Barthes identifies this as the symbolic message of an object. Besides its functional value, bottled spring water has a symbolic value that is its most powerful purpose in terms of commercial value. In this respect I have tried to explain spring water's cultural connotations to nature, while emphasizing how Norwegians regard nature as a strong symbol of our culture. Water is also a symbol of survival and fait, pureness and health. In the advertisements, bottled spring water is often put in contrast to other technologies and symbols that are regarded as filthy, fabricated and unhealthy. Examples of such are dirty water pipes, germs and sugared soft drinks. Ringnes plays with contrasts like pure and dirty, and dark and light which enhances the cleanliness and purity of the water.

It is difficult to say what effect bottled water has had on society, or whether a decline in consumption of sugared soft drinks is an effect of bottled spring water. A more relevant issue for the context of my thesis is that sugared soft drinks have obtained new technological frames after the introduction of bottled water in Norway. People's views and understanding of sugared soft drinks have change as a result of that relevant social groups, such as marketers, media, producers, distributors and users of spring water, interpret these drinks as being unhealthy. One of my observations is therefore that one technology: sugared soft drinks, has created an indirect negative interpretation for people's positive perception of another technology: bottled spring water. Therefore, comparing Imsdal to sugared soft drinks gives a positive image and connotation of bottled spring water that will enhance the need and desire for the commodity. To push this healthy image of Imsdal even further, Ringnes can differentiate Imsdal and the water category from other categories within drinks by placing Imsdal by fruit and vegetables, or by other products that are associated with health.

Ringnes commodified spring water with the aim to profit by creating new needs and desires. The interpretations and the practices of use have been various where different meanings have been applied by different social groups: Some might have used it as a substitute to tap water, others as a substitute to other drinks, some because they regard the bottle as a practical container of tap water, and some because of its connotations to health. Norway has a high consumption of sugared soft drinks, and issues related to health have caught a lot of attention in the media in the recent years. Bijker and Law write that technologies (or artefacts) are born out of conflict, difference or resistance (Bijker and Law 1992, p. 9), and for all unhealthy products that are being produced there will also be created a need for healthy products. People get complex needs and knowledge, and the result is even more complex objects. "As human-made 'nature' gets more complex and differentiated, so does human subjectivity" (Slater 1997, p. 103). Our culture defines our needs, but consumers shape and moulds these needs according to their references, knowledge and practice of use.

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Appendix

Defining Spring Water, Natural Mineral Water and Tap Water

Water is a chemical connection between hydrogen (88, 1%) and oxygen (11, 19%), and is usually referred to as H2O (Nicholls, 2004). A human body consists of 70 % of water, but to keep our levels of capacity consistent we need to drink about 2, 5 litres of water every day. The amount of water needs to be adjusted according to how active we are, how hot it is and how much we sweat. Usually we differ between three different types of water: spring water, natural mineral water and tap water. In the media we can often read tests and comparisons between the three, but what do the terms really mean? What is the best and healthiest alternative? Glenn Sørlie, production manager in Ringnes, claims that the general level of minerals in Norwegian tap water is low, and that bottled water can be one option to provide the body with the minerals that it needs (Rærergård, 2005).

Natural Mineral Water

Natural mineral water origin from solid rock and is unique according to the spring's specific characteristics (Mattilsynet, 2004). Natural mineral water contains a rich level of minerals and salts that might be higher than normally approved for tap water. It stems from a subterranean ground water reservoir that is protected from pollution. The water's composition and nature keeps the water pure and clean. Examples of bottled natural mineral water in Norway are Olden from Hansa Borg and Bon Aqua Silver from the Coca-Cola Company.

Spring Water

Spring water also origin from a subterranean spring and has a good microbiological quality, but does not have the minerals and the trace elements as natural mineral water. The spring water has to meet regulations according the physical and chemical composition of the water,

the same directions applied to tap water. Imsdal is unprocessed spring water that has been refined by filtration of large masses of sand through thousands of years before tapped directly from the spring onto the bottles. The under terrestrial spring of Imsdal is located in a sheltered environment, where the water has a constant temperature of 5 degrees Celsius. The quality of bottled spring water expires after 6 months (Imsdal 1, 2007).

Natural mineral water and spring water must be approved according to the terms in a regulation worked out for the Norwegian Food Safety Authority by the Ministry of Health and Care Services. They must both be bottled directly from the spring, and shall not be disinfected by removing microorganisms. The low level of carbon dioxide and nutritional values are conditions that are disadvantages for germs, but once bottled, opened and left open for a few days creates a haven for them.

Tap Water

Tap water has to follow Norwegian regulations for fresh water[10] from 1995. The purpose of the authorised regulation is to secure the quality of the drinking water, and to secure that it is not detrimental to health in any way (Lovdata, 1995). Untreated water in Norway is normally a bit brownish because of the humus that colours the water surface, but this is treated at most water works. The water is also a bit sour with a pH level from 6, 0 to 6, 5 with requirements saying that it must be at least 6, 5. Low pH levels can lead to corrosion in the pipes resulting in rusty water coming out of the tap.

Water being directed to waterworks for treatment is called untreated water. Recent studies by Norwegian School of Veterinary Science shows that 1,4 million Norwegians are supplied with tap water that can make the consumers ill (NRK 1, 2007). In cases like this it is

[10] Drikkevannsforskriften

important that the water works improve and secure the springs and the water mains, so that we are supplied with healthy and clean tap water.