

Attention to Advertising



ATTENTION TO ADVERTISING

AKADEMISK AVHANDLING
vid Samhällsvetenskapliga fakulteten
Handelshögskolan i Umeå
UMEÅ UNIVERSITET

Carl Patrik Nilsson

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Attention to Advertising

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Abstract

In advertising, capturing consumers' attention is imperative. Yet, how attention to advertising works in a World Wide Web context has not been researched extensively. This area is the main focus of this research.

The World Wide Web is an interactive medium which has characteristics that deviate from traditional media channels. Considering the unique properties of the World Wide Web it was deemed important to study how attention to advertising is affected by various contexts as well as attention getting techniques.

The study was conducted in order to develop an understanding of how advertisements in different Web task environments are being attended to as well as how attention to advertisements varies between different attention getting techniques that are being used in Web advertising. Furthermore, a model which describes the relationship between context, attention getting techniques and attention to advertising was developed and tested. In connection to this it was tested whether click-through or click-rate is indeed an adequate method when measuring advertising effect and thereby to what extent the pay per click pricing strategy is appropriate.

In order to address the research issues a theoretical framework was assembled. Nine hypotheses were formulated deriving from the framework. To test the hypotheses and the model, an experimental research design was employed. Three experiments were designed to study the hypotheses formulated. 702 individual experiments were conducted.

The conclusions from the study reveal that Web task environments indeed have an impact on attention to advertising. Increased complexity or a more difficult task environment demands more cognitive resources which in turn produces lower attention levels to the advertising stimulus. Reduced complexity, on the other hand, releases cognitive resources that can be spent elsewhere. Thus, a higher attention level to the advertising stimulus was recorded. This also confirmed the properties of the proposed model; namely that the permeability of a filtering mechanism is dependent on for instance level of goal orientation and complexity of the physical task environment i.e. the complexity of the Web site. The study revealed that attention getting techniques such as pop-up advertisements increase the attention to advertising. However, it was found that pop-up advertisements are effective, not mainly because of their abrupt presentation, but because of the distinct properties of the frame. It was found that the frame has a negative meaning for Web users and when the frame comes into the visual field it will attract their attention. At the same time attention will also be distributed towards the advertisement itself. This is recorded as an increase in attention towards the advertising message.

The results show that the click-through measure is not an appropriate method when measuring advertising effect. The click-through measure may severely underestimate the advertising effect. Consequently, using click-through frequencies as a basis for pricing is inappropriate, unless the effects at play have been well understood and taken into consideration.

Key words: Attention to advertising, attention getting techniques, Web advertising, Web environment, click-through

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In memory of Frank Rademaker
1941 - 2006

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Chapter One

Attention to Advertising

This first introductory chapter will describe the area to be researched. Concepts and theoretical areas key to the study will be elaborated. Subsequently, the purpose of this study will be pointed out in greater detail. At the end of this chapter, an outline of this dissertation will be presented.

Introduction

A number of media channels exist that can be used for conveying advertising messages. To the well-established channels such as TV, radio and print, the World Wide Web has been added. As much as there are differences between, for instance, print and TV there are reasons to believe that the World Wide Web has unique or special features that differentiates it from other media channels. The World Wide Web has characteristics that deviate from traditional media channels, making the World Wide Web a prime target for investigation.

One significant disparity, which is often pointed out, is that the World Wide Web represents an interactive media with a greater richness of information as opposed to what can be found in traditional media (Evans & Wurster, 1997). Researchers have found that consumers are more active on the Internet and the World Wide Web than is the case with other media channels (Hoffman and Novak, 1996). During a Web session, the Web user is active and interacting with the material presented on the Website, a behavior that may impact advertising on the Web.

A main property distinguishing Web advertising from other kinds of advertising is that it has hybrid characteristics combining properties from print, broadcast, out-door, and direct response media (Dr  ze and Zufryden, 1997). In addition, Karson and Korgaonkar (2001) are pointing out no less than eight unique characteristics of which four¹ will be mentioned here. As mentioned earlier, one of these characteristics is Interactivity, a second one is Complexity - Web sites exhibit a greater complexity than both print and broadcast media (Bruner & Kumar, 2000), a third is Flexibility – this type of media is very flexible, a property making room for creative advertising. Web advertising can range from static to full motion audio-video, which cannot be accomplished in print advertising. A fourth characteristic is Usage - unlike broadcast media, the Web is being used in a number of ways such as a channel of distribution of digital products, creation of Web communities (Karson and Korgaonkar, 2001), for Web logging, Web shopping and Web chatting to mention a few. These four characteristics differentiate the Web environment context from the context dimension in print and other media channels.

When summarizing the above, it is reasonable to state that the World Wide Web is distinctly different from other types of media channels with regard to the environment in which the advertisement is being placed. Properties such as greater interactivity, complexity, usage and flexibility create this difference.

Furthermore, the advertisements on the World Wide Web can be propelled to stimulate and attract attention in an additional and different way than what is the case in, for instance, print media. Eliciting or attracting attention can

¹ The other four that are not mentioned here are Variability, Accessibility, Salience and Stand alone. These properties are not included here since they do not have the same significance for the uniqueness of the World Wide Web today as they may have had in the past.

be accomplished through various kinds of strategies and techniques such as animation, flash, size changes or pop-up. Taken together there is an array of unique features whose impact on advertising on the World Wide Web is yet to be investigated and it is this knowledge gap that is the very target of the research at hand. Consequently, the over arching research problem is how attention to advertising is affected by various contexts as well as attention getting techniques.

Why study Web advertising

Studying how the context impacts advertising has been conducted previously (see for instance; Bruner and Kumar, 2000, Moore, Stammerjohan and Coulter, 2005, Dahlén, 2005, Janssens and De Pelsmacker, 2005) but never, to the best of the author's knowledge, where structural differences between Web environments have been compared. Appel (2000) reviewed eight studies of the editorial environment in print in the United States of which none gave strong support to the environment hypothesis. According to Appel a number of investigators have studied the issue but none has "demonstrated the validity of the concept ... to the point where it is generally accepted" (Appel, 2000, p.94). Even though Appel's statement is somewhat discouraging, it was at the same time challenging and inspired to take on the task in a Web context to seek a convincing answer to the issue. Since the World Wide Web differs from traditional media channels with respect to its interactivity, flexibility, complexity and usage it was considered plausible to expect greater differences between environments on the Web.

Attention getting strategies and techniques has been studied earlier for print and broadcast media. At the time when this research project was initiated, in 2002, there were no known studies of this subject in Web advertising. As late as 2004 Diao and Sundar (2004) wrote that there was little or no empirical research that had been conducted in the area.

Recently, studies have been done where attention getting in Web advertising has been investigated. In the Eyetrack III study (2004), attention getting techniques was studied. In this study, different backgrounds have been used when various advertisements were tested making it hard to specifically attribute the effect to either the difference in context or the difference in attention getting technique. Similarly, when comparing for example the pop-up effect with animation, advertisements of different sizes were used making it impossible to know whether the registered effect originated from a difference in size or a difference in technique. Consequently, there is still a need to scientifically investigate the scope of the special attention getting techniques that Web advertising offers.

In an editorial by Kover (2000) he expressed concerns of how to measure advertising on the World Wide Web. His concern may have been related to the Web industry's practice to use click-through as a main measure of advertising effectiveness. Even though this practice is in conflict with how advertising is being measured in other media channels than the Web, the click-through

measure is the most widely used method (Chandon, Chtourou and Fortin, 2003). Given this discrepancy and the significance of employing correct measurement methods it was deemed important to study this issue in this research.

In connection to the click-through measure, a pricing strategy based on this measure has evolved namely, the pay per click pricing strategy. The adequacy of this strategy can be challenged, especially when taking the following logic into consideration; if the click-through measure is inappropriate when measuring advertising on the Web then it may be inappropriate as a basis for pricing as well. Therefore, this research issue was incorporated into the study.

A background and knowledge platform

To be able to comprehend the relationship between various phenomena in Web advertising, it is advisable to obtain a brief overview of the Web advertising area. Hence, a knowledge platform is presented in the following.

Advertising on the World Wide Web has developed rapidly over the last decade. Initially, advertisements were designed as simple one colored banners for Web users to click on. The reason for why banners were uncomplicated was because the limited bandwidth of the Internet did not allow the use of sophisticated graphics. More elaborate graphics affect the size of an advertisement which in turn affects the amount of information that has to be transferred to an individual user who is surfing a Web page. With the modems that were frequently used just a few years ago it took excessively long time to download a Web page if the graphics were very sophisticated. As a result, most graphics on Web pages, including advertisements, were of a basic character. However, as the infrastructure of the Internet has been upgraded with a greater bandwidth, advertisers have refined the graphical design (Zufryden and Dréze, 1997) leading up to today's full fledged Web advertisements.

The old Web banners typically carried a very short or incomplete message that often ended with the two words "click here" or "click now" that was blinking to call upon the attention of the Web surfer. The purpose with these banners was to generate click-through to a target Web site where the actual good or service was promoted in greater detail.

The Web advertisements of today, contrary to the early banners, often have some basic properties such as an image or description of a product, a brand name, copy text and a headline put together into an advertisement entity – the Web advertisement. Modern Web advertisements are quite different compared to their older counterparts. They have a different visual appearance and also a different purpose since they are communicating a complete message rather than aiming at generating click-through to a target Website. These refined Web advertisements in particular, that are quite similar to print advertisements, are to be researched in this dissertation.

Placing Web Advertising in a broader context

Marketing communication is an important part of marketing with the purpose to communicate with companies' target markets². Marketing communication can be described as representing “the voice of a brand and the means by which companies can establish a dialogue with consumers concerning their product offerings” (Keller, 2001, p. 823). The reasons for why companies communicate to their markets vary although often the purpose is to bring to customers' attention information regarding new goods and services, to change attitudes toward a product or to remind consumers about products (Keller, 2001). The companies' communication activities can furthermore be part of an information exchange between company and customer with the intention to maintain and develop customer relationships (Reid, Luxton & Mavondo, 2005). Regardless of the purpose, communication is an integral part of the marketing function and is executed by staff and functions within the organization and/or together with external organizations specialized in the area of communication.

Marketing communication, frequently called promotion and being one of the four P's³, is a broad concept that covers the sub areas of advertising, personal selling, sales promotion, direct marketing and areas connected to these (Duncan & Moriarty, 1998). The various areas are serving different purposes and aiming at achieving different goals.

For instance, sales promotion is short term incentives to stimulate purchase whereas advertising can be used to build a brand image or to create a presence on a new market. Common for these sub areas is that they all include an element of communication that is directed towards the market. Communicating with the market and the consumers is important since it over-bridges the gap between companies and customers.

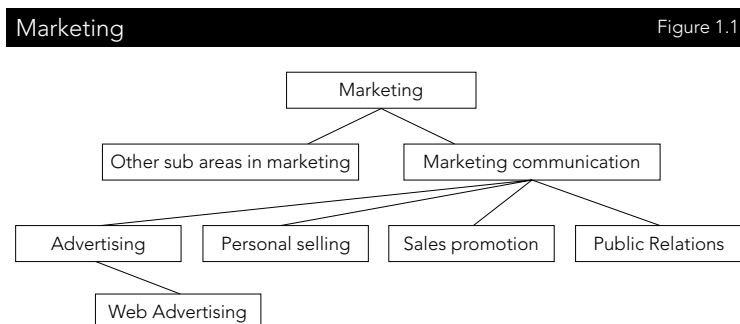


Figure 1.1. Web advertising as a sub function of Marketing Communication and Advertising. Adapted from Duncan & Moriarty (1998, p. 9).

² The communication aspect of marketing is explicitly formulated in the AMA definition of marketing, “Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders.” (The AMA definition as reported by Keefe, 2004, p. 17 – 18)

³ Jerome McCarthy was the one who introduced the 4p concept into marketing in 1960 (Harvey, Lusch and Cavarkapa, 1996).

At a basic level, communication will make it possible to inform and make potential customers aware of a company's business, its offering or to persuade customers to enter into an exchange relationship.

One way to communicate with customers is through advertising in digital media channels such as the World Wide Web. This type of advertising, Web advertising, is an additional way to conduct marketing communication. In figure 1.1 above, it is clarified how Web advertising is related to marketing communication and marketing.

Web advertising has not always existed. It is only in recent years that novel means to conduct marketing communication, such as Web advertising, have evolved. Technology development, and in particular the development of Internet technology and the Internet, has provided an infrastructure for marketers which can be used when communicating with customers. Despite the Internet's relative youth, organizations have been fast with experimenting and adopting Internet related marketing communication. It has proved to be an efficient way to reach out to the market, or to, literally, reach into the customers' homes or offices. For practitioners as well as researchers the development has meant an expansion of the current advertising field.

The Internet, the World Wide Web and Contexts

The Internet⁴ is a computer based network that can be used for a variety of activities. Its inherent versatile nature makes it a formidable tool for communication and information transfer⁵ while it also sparked an interest for using it in a number of ways among companies⁶ and consumers. This interest propelled the growth of the Internet throughout the nineties and the early years of the twenty first century. The diffusion rate of the Internet has surpassed any other media achieving global prominence in barely five years (Sterne, 1997). Berthon, Pitt and Watson are arguing in the same way and they are highlighting the importance of the Web and also the swiftness of the

⁴ For a brief description of the Internet see Appendix A

⁵ The Internet can be used for many different kinds of communication and information transfer using applications such as: email, internet relay chat, ftp, telnet, blog, IP-phone communication, news groups, Web and many others. The Internet provides an arena for all kinds of communication.

⁶ As an explanatory note consider the following; From a company perspective it is recognized that the Internet can be used for various business activities such as logistics, buying, retailing, production, advertising, and the like. Companies have explored the Internet and its possibilities trying to exploit its properties to their benefit. In this pursue managers saw great possibilities such as low costs for attracting customers, severely reduced costs for serving another customer, small companies competing on "equal" terms as larger companies, economies of scale, low production costs, low costs for distribution, a large scale network and infrastructure ready to use for any company and so on. All these potential benefits together with the business climate at the time (the late nineties) called for companies to take action. Companies just had to go "virtual" in order to defend positions vis-à-vis competitors and to be a part of what was about to come or simply, as Rossiter (1999, p. 1) formulates it, "...because it seems everyone else is doing it..." To the detriment of many companies and despite their efforts they often did not achieve the anticipated success. Recent research has presented explanations to this from different angles and most of all pointed at an unrealistic expectation on what IT and the Internet can do for organizations. The gained knowledge from the early days of the commercial Internet revealed that there are not only possibilities with the Internet but also obstacles and pitfalls that has to be understood if a company is to use it as an efficient marketing tool.

diffusion of the Web, “The Web is not a transient phenomenon. It warrants serious attention by advertising academics and practitioners. Statistics support this, although one astute observer recommends strongly that all estimates be made in pencil only, as the growth is so rapid. No communication medium or electronic technology, not even fax or personal computers, has ever grown as quickly.” (1996, p. 44). As a comparison, it took Radio some thirty years and Television some fifteen years to become a wide spread media (Sterne, 1997). A great diffusion of the media also contributes to making it more efficient, from an infrastructural point of view, to the benefit of the users (Rogers, 1995).

Today the World Wide Web is part of everyday life and for many people the Web has become one of the major media for consumption (Morris, Woo & Cho, 2003). The Web is not only being used by consumers, it is increasingly being adopted by marketers as well (Prasad, Ramamurthy and G.M. Naidu, 2001). That the Web has grown important for both consumers and companies is undisputed.

When discussing around the Internet and the World Wide Web it is important to differentiate between the two. What millions of consumers and companies world wide are using is in fact applications or services that are available on the Internet, such as email, newsgroups or the World Wide Web. This means two things; people are indeed using the Internet but only its infrastructure, secondly and also more importantly, it is the communication benefit of the applications and services that has attracted the attention of companies and consumers and of most importance to this dissertation is the service that usually is called the World Wide Web, or just the Web. It is in fact the success of these services that has driven the growth of the Internet and in particular email and the WWW (see Appendix A).

With the widespread use of the Web in society the phenomena has come to attract the interest of researchers. Even though the first advertisement⁷ appeared on the Web (in the on-line magazine “Hotwired”) only a decade ago there have been a number of studies conducted that have explored various aspects of the Web. Research effort has been directed at comparing marketing activities on the World Wide Web with activities in the real world (see for instance Gallagher, Foster & Parsons, 2001) suggesting both that there are differences as well as similarities. Initial concerns about the fact that traditional principles of mass media advertising would not apply on the Web was disproved. Gallagher et al found that Web advertising was at least as effective as its print counterpart. They also found that some promotional material that was not classified as advertising was less effective when presented on the Web. Gallagher, Foster and Parson’s research was undertaken in order to get an understanding for Internet’s comparative properties.

⁷ October 1994 is often marked as the first time when an advertisement appeared on the Web. It was in the on-line magazine “Hotwired” and the advertisers were Zima, AT&T, Volvo and a few others (Brandweek).

Research has also been directed to studying the Internet and the Web on its own merits, (see for instance Hoffman & Novak, 1996, Dr  ze & Zufryden, 1997, Rossiter & Bellman 1999, Gallagher, Foster & Parsons 2001, Zhou & Bao, 2002, Novak & Hoffman, 2003 and Novak, Hoffman & Venkatesh 2004,) which is an important step in determining how marketing communication, and in particular advertising, works on the World Wide Web. The study to be conducted in this research belongs to this category and is thereby not comparing the Web with other types of media.

When studying the Internet and the World Wide Web from a marketing communication perspective it is obvious that the Web is one out of many media channels. It can be used to transfer information and messages to consumers. Other media channels that are frequently being used for marketing purposes are TV, Radio, news papers and the like. In this context the World Wide Web becomes just an additional way to distribute marketing communication to target markets. In figure 1.2 frequently used media are mapped with the Internet and the Web inserted into the media terrain.

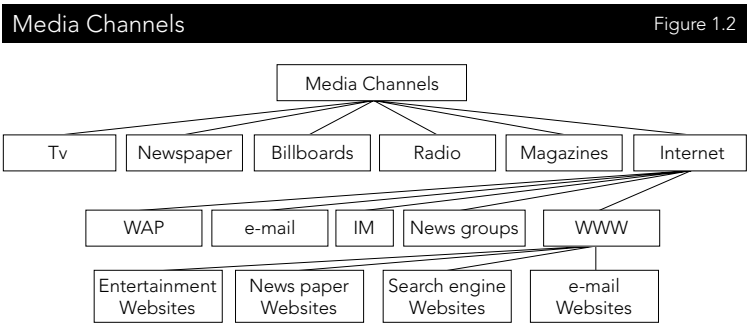


Figure 1.2. Map showing media channels and the new digital media terrain.

The model above shows that the Internet is one out of many possible media channels. The Web, in turn, is merely one out of a number of Internet services. These Internet services are different communication channels that can be used to target consumers and to convey messages. Advertising can for instance be done through e-mail or instant messaging services and of course also on the Web. The Web is however not merely one media but can be divided into different Web site categories depending on, for instance, what activities the user can perform on a particular Web site. There are well known Websites that can be put into the various categories in the model in figure 1.2 such as Hotmail, Yahoo, New York Post, Le Monde, Google, Altavista, Disney or Lunar Storm (a Swedish Web site)⁸.

⁸ Notice that the New York Post and Le Monde merely have extended their business mission from print to Web whereas the other examples are entirely new enterprises in the Web domain. Disney is perhaps not entirely new since they have for a long time been in the area of entertainment. Though, the kind of entertainment they offer on the Web differs quite a bit from what they offer in their entertainment parks for instance.

In line with the above model, Hotmail and Yahoo belong to email Websites; NYP and Le Monde are newspaper Web sites et cetera.

Of particular interest here is whether one and the same advertisement would have the same impact when presented in different Websites or Web contexts. Web context is here defined in a similar way as, for instance, De Pelsmacker, Geuens and Anckaert (2002), that is, the context comprises of the characteristics of the medium in which an ad is inserted.

The impact of dissimilar media contexts on advertising effectiveness have been studied in for example TV and print. The context, in which a commercial or an advertisement has been placed in, has been found to be important for the effectiveness of advertising (De Pelsmacker, Geuens & Anckaert, 2002). Studies have explored the interplay between the advertisement and the media or media related factors, attempting to investigate which media factors that have effect on recognition and recall. Nowland et al and Politz (1962; 1962) have shown that different media vehicles can generate different communication effects even on the same target group using the same advertisements. The media vehicle is thereby central when deciding on which vehicle to use since different vehicles have different impact on the audience. Other studies (for instance, Harmon and Coney, 1982; Sternthal, Dholakia, and Leavitt, 1978; Sternthal, Phillips, and Dholakia, 1978, Hermes 1996) show that also content affects the impact of advertisements as well as credibility of the source.

Advertising on the Web can be described in relation to how the advertisements are presented compared to other media channels. For example, TV advertisements - commercials - are presented sequentially so that program content is interrupted by a commercial break when the commercial is aired. This is also applicable for Radio where program content and commercials, with very few exceptions are presented serially. This practice clearly deviates from the normal case for Web advertising, since advertisements on the Web are usually presented in parallel with the Web site content. In print, advertisements are also presented in parallel with the program content. The reader will thereby be exposed to both the program content and the advertising simultaneously. In this respect, Web advertising and print advertising are similar.

The differences between the Web and other media channels were pointed out in the previous but can be summarized as; the Web represents an interactive media with a greater richness of information than what can be found in traditional media (Evans & Wurster, 1997). Furthermore, the Web exhibits a greater interactivity, flexibility and complexity than both print and broadcast media (Brunner & Kumar, 2000, Karson and Korgaonkar, 2001). The Web also has a visually distinct appearance, which differentiates the Web from other media channels. One of the visual features is that pages to additional information are presented as links that are clickable. As a result, the entire browsing system is functioning and organized in a different way as opposed to print or other media channels.

In addition, Websites are not homogeneous. On the contrary, there is a great variation in how they are designed and for what purpose they are being used. Websites can be categorized into groups that share similar functions or visual appearances such as search engines, portals, Web shops, news Web sites and the like. These Website categories represent different contexts in which advertising can be presented. Hence, visiting different Websites means visiting different contexts and the impact of context on advertisements may differ among Web contexts.

On the Web sites described in the previous paragraph the Web user can perform many different activities. Various activities will call for more or less commitment from the Web user. In some cases the user can just surf around for entertainment and wander from Web page to Web page and be amused by various activities she is performing. In other cases the Web user is searching on Web sites and Web pages in pursue of certain kind of information or to perform certain activities. These two broad cases sketched are examples of different levels of goal orientation or internal drive guiding the behavior exhibited by the Web user. Janiszewski (1998) describes two broad types of behavior when searching for visual information; goal-directed search and exploratory search. Goal directed visual search is the type of behavior when the consumer is motivated and gathers information in an efficient way. Exploratory visual search is the type of behavior when the consumer lacks the motivation or experience to search efficiently (ibid). Janiszewski is taking as an example of exploratory visual search when a consumer is paging through a catalogue in an unplanned manner. This type of behavior is very similar to browsing the Web as is described above. However, the level of goal orientation and internal drive can also be seen as an additional contextual dimension that may have the potential to influence how advertising is attended to and processed. Since the Web offers a high level of interactivity, and other properties, this contextual dimension may be of great importance.

Two aspects of the context dimension have been described in the above. The various Web contexts where advertising is embedded can be considered as mainly an external dimension whereas the Web users' level of goal orientation may be considered as an internal dimension or more connected to the individual. Nonetheless, these two aspects of context may influence and necessitate different levels of attention from the consumer and thereby affect the impact of advertising.

With the above information at hand, the first part of the research problem is formulated as:

Are there differences in effects regarding attention to advertising between different contexts and if so, how can these differences be explained?

The purpose of the first study is to compare how the level of attention distributed to an advertisement varies between different Websites and different levels of goal-orientation.

A number of experiments are to be set up to study the context dimension of attention to advertising. A more detailed description of the method and the specific design of the experiments are to be found in the method chapter.

Advertising and Attention Getting on the WWW

In a media world with increasing din and media clutter, advertisers are struggling to break through the noise and get the customers to attend to their messages. Advertisers are using different tactics to make their advertising to become attention getting or attention grabbing (Campbell, 1995). The quest for attention is part of the competition and refined techniques may result in a competitive edge. However, according to Pieters, Rosbergen and Hartog the main focus of consumer research has been on “information processing and on the effects of advertising on attitude change” (1996, p. 242). They are furthermore stating that “...little is known about processes of attention, in particular of visual attention to advertising” (ibid). This statement supports this study and that research in this area would be appreciated by the research community.

In line with Pieters et al, the importance of the attention construct has been highlighted and emphasized by other researchers. For instance, Rossiter and Percy (2001, p. 167) are revealing their stance by stating “Before anything else can occur, you must first pay attention to the advertising.” This indicates that attention is a prerequisite that is taking place prior to all other constructs, that advertising researchers aim to study⁹. The fact that not much research has been conducted in this area, as Pieters et al is stating reinforces the notion that there indeed are reasons to devote more research efforts to this interesting topic.

Horace Schwerin (1967, p. 56-57) states in a somewhat similar fashion as Rossiter and Percy that, “The opening sequence of any commercial is of key importance, since advertisers must capture and hold the attention of viewers”. Janiszewski and Bickart (1994, p. 329) are equally concerned about the importance of attention when they argue that “Despite the tremendous amount of money spent on buying consumer attention, little to no research is done on consumer attention”.

Additional reasons why attention is important is for instance that, “Catching the consumer’s attention can keep her or him from mentally tuning out, switching focus to an alternative activity, or zapping to another channel.” (Campbell, 1995, p. 226). Furthermore, increased processing attention has been found to lead to increased information processing and more positive

⁹ For example, memory decay, attitude formation, purchase intention or the like.

attitudes (Cialdini, Petty & Cacioppo, 1981, Petty, Cacioppo & Schumann, 1983). Increased attention and processing also make attitudes more persistent and more resistant to negative information (Haugtvedt & Strathman, 1990).

Summarizing the above it is not far fetched to conclude that attention is imperative to advertising, no matter what media is being used. The strategies that are used to attract attention differ somewhat between media channels as a natural consequence of the inherent properties of a given media. In TV and Radio, attention getting tactics have been used for quite some time and there are many ways to attract attention. One small example of how to attract attention in the TV media is to delay brand identification (and sometimes also product category) until the end of the commercial (Campbell, 2001). In doing so the customer will not know what product is being advertised until after processing the entire commercial. The purpose with this presentation technique is to create suspense (Fazio, Herr & Powell, 1992).

Attention getting techniques in a World Wide Web setting is a relatively new business and the starting point is the Web advertisement and its properties. The modern Web advertisement of today has developed from the rather unsophisticated “banner ads” that were used in the early era of the World Wide Web. While many may have forgotten them it is perhaps in place to refresh the memory. The early Web advertisements can perhaps best be described as a one colored rectangular square blinking with a brand name (or the like) and a blinking text stating “click here”, “buy now” or some similar phrase. The old Web banners were an oddity in the advertisement family (print ads, TV and Radio commercials, outdoor advertising etc.). When comparing to advertisements in other media channels the banner ad was the most similar to billboards or banners used in for instance sport arenas or the like. Its shape and form were similar but the banner ad was placed in a Web environment instead of in a row of banners in an arena. This notion is supported by Lei (2000, p. 469) who describes banners in the following manner “At best, they should be thought of as mini outdoor billboards, with similar creative limitations.” By this Lei meant that the old banners could not convey complex messages. Instead, these banners were designed with the purpose to generate click-through to another target site where more detailed information could be gained.

In comparison, the modern Web advertisements have a visual appearance that is more similar to print advertisements that can be found in traditional newspapers and magazines. They are square-like as opposed to the very rectangular banner advertisements. Furthermore, the Web advertisements have an elaborated and “complete” message compared to the headline/punch line oriented banner advertisements. Even though most Web advertisements are still clickable they are not primarily aiming at generating click-through to a target site. Instead, they are presenting the product or the like with the purpose to promote the relevant product by communicating an advertising message that is presented on the Web advertisement. It is worth to notice that an advertising message may serve various purposes. One advertisement may be

designed to increase awareness or enhance the company's image in some sense, another advertisement may have the purpose to explain how a certain product is to be used and a third may be aiming at triggering purchase. Regardless of what purpose the advertiser has, it is no longer necessary to generate click-through. It is of course, by no means a disadvantage when the consumer clicks on the advertisement and learns further about the company and/or the product on a certain target Web site.

When observing the attention getting strategy and/or the various techniques that can be used for advertisements it is obvious that the Web differs from print. Commonly, in print ads the advertisement designer can use colors, pictures, texts and size to impact the attention to the advertisement. On the Web, the advertisement designer can use the same means (colors, pictures, texts, size etc) but also the specific and inherent features that the Web can add to an advertisement, i.e. animation, pop-up effects, flash, size increase-decrease and other potentially attention getting techniques. This is apparently a significant disparity that differentiates the Web advertisements from the print advertisements. The print advertisements are, by default, static since they cannot be animated, pop-up or the like. The effect that can be added to a Web advertisement in a Web context is an additional dimension of an advertisement which can increase the attention to the advertisement. How this dimension impacts advertising has not been systematically studied.

With this information the second part of the research problem can be formulated:

Are there differences in effects between different "attention getting techniques" and if so, how can these differences be explained?

The purpose with the second study is to conduct a series of experiments in order to investigate how Web advertisements differ in their ability to generate attention in a Web environment.

When studying various types of advertisements and how powerful they can be at attracting attention, it ought to be kept in consideration the fact that certain types of advertisements are not always appreciated by Web surfers. Some of the more aggressive attention getting techniques have been reported to stir up negative emotions among Web surfers. This is an unwanted collateral damage that occurs when the advertiser is eager to get the attention of its audience. How this is affecting the advertising has been researched but results stay ambiguous.

Recent studies related to advertising on the Web have given contradicting results regarding people's attitudes towards Web advertising. Ducoffe (1996) presented findings showing that Web surfers did not find advertising disturbing or interfering with the Web surfer's activities.

From an advertising point of view, this was good news. Other researchers such as Brackett, Benjamin and Carr (2001) have, on the other hand, found examples where the Web surfers considered advertising on the Internet being irritating, annoying, and even insulting to people's intelligence.

The results are alarming, raising questions about what is being done erroneously. It is important to notice that Brackett et al's findings were presented five years later than Ducoffe's. It can be argued that Ducoffe's study was conducted at a time when Web surfers were curious about every aspect of the Web while Brackett et al's study was conducted when consumers had already gotten acquainted to the Web and when the novelty and initial curiosity had faded. However, attitudes towards advertisements, and the context where it is presented, are important factors since it is anything but positive when the advertisement is considered an insult by the target audience to which the company is trying to communicate with. The ambition is therefore to attempt to shed light on this issue.

A second purpose with the second study is therefore to investigate if and how individuals' attitudes towards attention getting techniques differ between different attention getting techniques, and what the consequences may be.

Modeling Attention to Web Advertising

The core of advertising research can be traced back to the very end of the nineteenth century. It evolved from personal selling in general and from the AIDA model in particular, which in fact was a model of personal selling. It was adapted by researchers in advertising and became a foundation for further research within the area (Strong, 1925, p.76). The AIDA construct (Attention - Interest - Desire - Action) was the first formal advertising model (ibid) and others have followed such as the well known Elaboration Likelihood Model of persuasion (Petty, Cacioppo & Schumann, 1983).

Many of the advertising models are including the attention construct but how attention to advertising works in a greater detail (for a comprehensive review of advertising models, see Vakratsas & Ambler, 1999) is seldom elaborated on. There is however a neighboring discipline, experimental psychology, where attention has been studied extensively. A number of researchers (see for instance Broadbent, 1958, Deutsch & Deutsch, 1963, Treisman, 1964, Walley & Weiden, 1973, Kahneman, 1973, Moran & Desimone, 1985) have modeled attention elaborately.

Common for these researchers' models is that they provide a richer understanding for how attention works than what advertising models do. This is perhaps not unexpected but given that attention is often treated, in advertising models, as a box amid other boxes it is perchance in place to intrude on how attention is modeled in advertising (see for instance the ELM or the AIDA model and others). The benefit of such an approach would be to extend the knowledge of one area into another.

Amongst the theories on attention that have been put forward, Treisman's model has received more positive reception than others' (Johnston & Heinz, 1978). Treisman has been one of the proponents of an early selection theory (Broadbent's theory also belongs to the early selection category but is more inflexible). On the other hand, Treisman's view on attention is that there is a sensory register allowing stimulus input to pass an attenuator that reduces or attenuates processing of information outside focal attention (Treisman, 1960, Eysenck and Keane, 2000). As a consequence, limited amounts of information can reach short-term memory where information is stored temporarily.

Crucial in the selective attention process is how input is transferred from the sensory register to the short-term memory. Broadbent suggested a 'filter' that mechanically screened out non-attended stimuli (Keane, 2000), which was shown to be incorrect by Treisman (1960). Treisman, on the other hand, referred to an 'attenuating' mechanism. In her view this mechanism may significantly reduce the incoming input, but does not necessarily block information in a similar conduct as in Broadbent's filter (Treisman, 1964, 1960).

Elaborating around the concepts and the function of the attention system, rather than treating it as one box, and to build a model infused into an advertising setting could provide greater insights and understanding concerning how attention operates in advertising. It provides a deeper understanding of how contextual factors or attention getting techniques are impacting the attention to a Web advertisement.

Thus, a supplementary purpose is to test an adapted model, originating from attention models in experimental psychology, in an advertising setting in order to provide explanations of how attention to advertising works. What is to be focused on, in specific, is the relationship between the Web environment/context, attention getting and the attention system that may allow advertising input to pass through or to be attenuated.

Measuring Advertising on the Web and Pricing Methods

Hitherto, the focal areas in this dissertation have been outlined and described. The research problem has been presented and the core purposes along with it. Still, when studying attention in a Web advertising context there are a number of supplementary areas that can be of interest to investigate. In addition to the main studies, an opportunity was given to add two minor areas namely, "how to measure advertising on the Web" and "pricing strategies for Web advertising". The first area (how to measure...) is a study of an old problem in a new setting (the Web setting). Nonetheless, it is important to empirically confirm and replicate how advertising is to be measured on the Web in view of the fact that it is a different media channel as opposed to the traditional ones, which has been explained previously. The results from the first area, however, may have significant implications for the second area "pricing strategies for Web advertising". If a different measurement method of advertising effect (recognition & recall instead of click-through) is more appropriate than the

method that is currently being used, then perhaps Web advertising pricing strategies also need to be revised. In other words; if click-through is not accounting for the entire advertising effect, then the Web advertising pricing strategy needs to be changed since the foundation of the current Web advertising pricing strategy is based on the click-through measure.

In connection to these two studies it is in place to emphasize that it is Web advertisements that are being targeted and not hypertext links, keywords or other kinds of Web marketing. It is advisable to keep in mind that keywords generated from search engines and the like often are not qualified as advertisements when using a modern definition of advertising.

Next, the two above mentioned additional research issues will be elaborated on further. The first one to be described is; Recognition & Recall versus Click-through as a means to measure Web advertising effect.

During the fifties some inspirational research took place, which Darrell Lucas (1960) described as, “probably the finest example of experimental design ever reported on advertising research”, when referring to the PARM study by the Alfred Politz organization (Krugman, 1985). The PARM study (A study of Printed Advertising Rating Methods) was a study to investigate issues regarding measurement of advertising, in particular differences between recognition and recall of advertisements. This study showed that a significant difference between the recall and recognition measure existed and that recognition was more sensitive than recall. At the same time, the study gave support to the small samples that were used by leading practitioners at the time such as Starch and Gallup & Robinson (Krugman, 1986).

Ever since the heydays of the PARM study, the advertising industry as well as academia has been working on conducts to improve the techniques to measure advertising effectiveness. Nonetheless, in the case of how Web advertising is measured, the inherent properties of the Web could automatically provide a response measure. This measure, i.e. the click-through measure, is measuring the number of individuals that click on an advertisement. When this method to measure responses was identified, the click-through measure soon became widely used as a measure of advertising effect without much reflection over its appropriateness.

In this context, it is valuable to remember the fact that there is a number of means to measure advertising, for instance recognition, recall, attitude and opinion measurements, comprehension measures, believability measures, persuasion measures, buying predisposition, ad ratings and behavioral measures (Leckenby and Plummer, 1983). These various measures are targeting different effects that advertising can achieve. For instance, recognition and recall are often used to measure the initial attention phase in the advertising sequence. Krugman states that the special virtue of the recognition measure is to elicit information of brief low-attention exposures to advertising, whereas

recall is for advertising that has been more closely attended to (1986). Since recognition is more sensitive than recall the recognition measure will comprise individuals who are able to recall the advertising as well. Those who recognize the advertising will also recall it (Krugman, 1986).

Recognition as a measure of advertising effect refers to a respondent's subjective estimate that she or he looked at or attended to an advertisement that has been previously shown. Recall reflects an advertisements' ability to register the sponsor's name (Wells, 2000). These measures that were included in the PARM study were relevant rating methods for printed advertising. Despite the well established position that these methods had, the click-through measure became widely used as an advertising measure when the World Wide Web appeared. In fact, some proponents of the click-through measure were discrediting the previous methods and before long the most frequently used measure was click-through, a position which is still holding (Chandon, Chtourou and Fortin, 2003).

In studies of Web advertising, the focus has often been on the effects of banner advertisements with click-through frequencies being used as a means to measures effects. The click-through frequencies have however dropped to below 1% making it an unreliable measure when using small samples (Kherrmouch and Lowry 2001). There are reasons to assume that an advertisement has effect albeit an absence of a "click on the advertisement" (Interactive Advertising Bureau, 1997). This makes it logical to shift from click-through studies to study advertisements on the World Wide Web using traditional methods (for instance recognition and recall) as measurement. In doing so, it will be made possible to extend the measurement procedures that have been applied for decades in traditional advertising and to transfer them into the Web advertising domain. Using recall and in particular recognition, seem to be a natural option that is also in line with what, for instance Krugman advocates (1986, 1988). Krugman, is one of the researchers that has most credibly pointed at the necessity to use recognition and recall in, for instance, TV media.

Researchers have in fact been looking into the Web measurement issue but still there are disbeliefs and most of all, the industry is using the click-through metric frequently and referring to it as a means to measure advertising effect. Briggs and Hollis (1997, p. 33) are stating that "The practice of evaluating Web advertising on the basis of click-through is like evaluating TV-ads for automobiles on the basis of how many people visit the showroom the next day".

Based on this, the purpose with this first minor study is to investigate whether there indeed is an effect of Web advertising as measured by recognition and recall and if so, how big this effect is in relation to the click-through measure. This may enlighten somewhat regarding the appropriateness of using the click-through measure as a means when measuring advertising effects.

The second additional research issue to be addressed is; Pay per click versus Pay per view as a basis for pricing in Web advertising.

Mangàni (2003) argues that pricing methods on the Web has evolved along a dissimilar path compared to broadcast or newspapers. Mangàni is attributing this slightly different evolution to the technological possibility to track and analyze the behavior of Web surfers. On the Web there are mainly two ways to charge for advertisements, pay-per-view or pay-per-click. Pay-per-view (also called CPM¹⁰) is a model where the advertiser pays for the number of impressions whereas pay-per-click is a method to charge for the number of Web surfers that actually clicked on the Web advertisement (Mangani).

The click-through measure is a straightforward and quick way to measure click frequency on a Web advertisement since the statistics are easily accessed and produced in the same moment as the customer clicks on the advertisement (Berthon et al., 1996). Consequently, publishers and advertisers started to use this measure as an indication of the advertising effect in the early days of the World Wide Web. Without much contemplation or any studies of implications, the click-through measure also became a foundation for pricing. The logic for this is based on the following train of thought; if click-through is measuring advertising effect then it is reasonable that advertisers pay for what they obtain, i.e. clicks. From the advertisers' perspective this is an appealing idea since this would mean that they are only paying for explicit action in the form of a click. The entire idea rests upon the assumption that there is no effect beyond the click and therefore the advertiser should only pay for the number of individuals that has "clicked through".

The answer from the first area will provide an answer to whether there is an effect beyond the click. If there is no effect beyond the click then it is reasonable to have a pricing strategy which is based on clicks. If there is indeed an effect (in addition to the click) then there are motives to state that an advertiser who is merely paying per click will get an additional effect that is not being paid for. Briggs and Hollis (1997) have compared the practice of assessing Web advertising based on click-through by evaluating TV-ads for automobiles based on the number of people visiting the showroom the following day.

Consequently, the purpose of the second study is to elaborate on the aptness of using pay-per-click as a pricing method for Web advertising.

¹⁰ Cost per thousand – M is the latin letter representing one thousand.

Outline of the dissertation

Chapter two of this dissertation provides a theoretical background and sets the stage for the study to be conducted. It also features the theoretical framework of the dissertation mainly examining theories of advertising and attention. Chapter three contains a summary of the theoretical argumentations leading to the formulation of hypotheses to be tested. In addition, a restructured model that originates from the attention research field is inserted into an advertising setting. Hypotheses are formed to test the model. Chapter four provides the methodology, the overall design and way of conduct of the various experiments. This chapter is also addressing issues regarding how and what type of analysis that will be conducted on the collected data sets. A presentation of gathered data will kick-off chapter five and initiates the analysis of the data. Various methods for analysis are being used. Chapter six comprises of conclusions, a general discussion and guidelines for further research. Following this a section with references and appendices is presented.

Outline of the Dissertation		Figure 1.3
Chapter 1	Introduction, Research problem and purpose	
Chapter 2	Theoretical background and theoretical framework	
Chapter 3	Summary of theory and hypotheses	
Chapter 4	Research Method	
Chapter 5	Results and Analysis	
Chapter 6	Conclusion and discussion	

Figure 1.3. Outline of the dissertation.

Chapter Two

Theoretical Framework

In this chapter the theoretical framework will be presented. The framework will address theoretical issues associated to the research problem. While in the previous chapter a brief portrait of the relevant theories has been given, this chapter will provide a presentation of a more elaborate theoretical overview.

The origin of Advertising

From a historical perspective, advertising can be seen as originating from the public criers on town markets (Dyer, 1982) in ancient cities such as Ur, Babylon and Jerusalem. The public crier served the function of providing timely, and some times persuasive, information about goods and services available on the market. In a similar fashion, the modern advertising of today is communicating to customers about available offers. The means of the public crier and those of modern advertising may differ but the basics remain the same. Daniel Starch argues that advertising in some form probably has existed “since the time when men lived in communities and competed with one another for the necessities and luxuries of life” (Starch, 1923, p. 17). Without going any further into the archives of advertising, it can be concluded that advertising is not just a recent phenomenon but has been an intrinsic component of society for quite some time.

Advertising as a scientific area for academic study shares similar characteristics as the marketing subject. Advertising is a subject that is often applying theories and ideas from other disciplines. For instance, the influence of advertising on consumers is understood in light of theoretical perspectives brought in from linguistics, literature, psychology, sociology, anthropology, economics and other subjects (MacInnis, 2005). Methods like ethnography, survey research, experimentation, quantitative modeling and the like are being used to assure a diversified understanding of the advertising phenomena. “Through this multi-method, the multi-theory perspective, we (the “blind men”), gain insight into the “elephant” known as advertising” (MacInnis, p. 14, 2005). Albeit this research does not span over all the areas and use all the methods stated above, it is clear that this research is an intersection where multiple subjects unite. In this sense, this study is following a traditional path in marketing and advertising research.

Advertising, being one of the means which can be used to market an offer by communicating to an audience, is intimately connected to primarily two areas. One area is marketing, which has the purpose to create, communicate and deliver value to customers (Darroch et al., 2004). Another area is communication,¹ which is the process of establishing a commonness or oneness of thought between a sender and a receiver (Schramm, 1955) or the

¹ The area of communication theory has to some extent been subject to controversies regarding origin, theoretical foundation etc. In marketing, Schramm's model of communication is often used as a starting point and it is perhaps important to consider the following; Schramm's model is congruent with Claude Shannon's general theory on signal transmission developed in the electronics industry and more specifically at Bell Telephone Company. According to for instance David Ritchie, Weaver (Shannon's “co-author” in 1949) in speculative manners extrapolated Shannon's theory on signal transmission into the social sciences as a theory of communication. Though, this is by no means Shannon's wrong doing or as Ritchie states “To criticize Shannon's model as inapplicable to the complexities of human communication is to criticize a rowboat because it is not a whale” (Ritchie, p. 280 1986). Shannon's signal transmission theory defines the information rate of signal transmission and not the information content of a message. “The semantic aspects of communication are irrelevant to the engineering aspects” (Shannon, 1949) and since the purpose of Shannon's theory was not communication it should not be used for other purposes. Though, other researchers like for instance Gonzales (1988), Finn & Roberts (1984) see it as revitalizing to bring the theory to other situations that are not strictly analogous.

process by which individuals share meaning (Dibb & Simkin, 1991). Duncan & Moriarty (1998) argue that marketing theory and communication theory share common roots and thereby they are enriching each other. Amalgamating marketing and communication consequently results into the area of marketing communication. In a marketing communication context, information is distributed to inform, persuade, motivate and to make potential customers aware of an organization's offering (Keller, 2001).

Marketing communication comprises of a variety of activities that aims at communicating with the company's customers. Marketing communication tools are typically divided into four or more defined areas and these tools or sub functions are often referred to as the promotional mix. The tools in the promotional mix are advertising, personal selling, sales promotion, public relations and can also be extended with for instance direct marketing, packaging, point of purchase display and event marketing (Keller, 2001). Of these mentioned tools, advertising will be scrutinized in greater detail since it is the main topic at hand and of special interest in this theoretical framework.

What is Advertising and What is a Web Advertisement?

In the literature, a number of descriptions and definitions of advertising can be found. An early definition by Daniel Starch (1923, p. 5) suggests, "The simplest definition of advertising, and one that will probably meet the test of critical examination, is that advertising is selling in print. Or to put it more completely, commercial advertising consists in presenting a commodity in print to the people in such a way that they may be induced to buy it". Starch's definition is easy to comprehend but is perhaps not the most elaborate one. A further problem is that the definition is too narrow in that it merely recognizes advertising in print as advertising. This means that it is excluding all other types of contemporary media channels for advertising. Yet, it ought to be kept in mind that Starch's definition of advertising was presented at a time when print was indeed the major means to convey advertising messages.

In a recent discussion on the topic of advertising definitions, the editor of journal of advertising, Faber (2002, p. 1), argued that definitions of advertising usually embrace components such as "paid" messages, "from an identified sponsor" in "mass media" with the goal of trying to "persuade or influence". The same year as Faber published his notions, Richards and Curran (2002) screened a number of advertising definitions in order to capture the essence and put together a "current definition" which is as follows; "Advertising is a paid non-personal communication from an identified sponsor, using mass media to persuade or influence an audience".

Richards and Curran's definition of advertising aims at being general and thereby harbors all kinds of advertising, including Web advertising. Though, Web advertisements are somewhat different than for instance print advertisements. It is therefore appropriate to elaborate on what a Web advertisement is and what kind of Web advertisement is being targeted in this study.

Lei (2000) described the early banners as mini outdoor billboards that could not convey complex messages. This limitation that Lei pointed at in year 2000 has been eradicated and the modern Web advertising does not suffer from it any longer. On the contrary, Web advertisements can now provide quite complex messages as they are not constrained to being button advertisements or mini-billboards as they once were. Visually, the Web advertisements are quite similar to print advertisements but can in fact exhibit greater complexity, especially when animated. It is therefore misleading to speak about “Web banners”, when referring to advertisements on the Web. The word banner, in its basic form, denotes a rather primitive type of advertisement where usually a brand name or company name is printed on a large rectangular piece of fabric with diminutive room for anything else to be communicated.

Figure 2.1 below shows what is often accredited to be the very first banner ad used on the World Wide Web. The advertisement in this figure is an archetypal example of the very simple banner-like advertisements that were once frequently used on the Web. This type of advertisement is becoming less common today and is not to be studied here.



Figure 2.1 Depicted is the first banner ad used on the World Wide Web by AT&T in the on-line magazine Hot Wired in 1994. The advertisement is reprinted with AT&T's kind permission (2006).

Concurrent with the development of the Web banners, an entire industry of search engine generated keywords or “AdWords”² have surfaced on the World Wide Web. These are clickable words in a text or small “AdWords” next to search results on a search engine. Albeit a majority of these “text advertisements” can qualify and be defined as advertisements, they are not of focal interest in this study. Instead, the following depiction may serve as a final guideline of what is meant by a “Web advertisement” here:

The Web advertisements of today, contrary to the early Web banners, often have some basic properties such as an image or description of a product, a brand name, copy text and a headline put together into an advertisement entity – the Web advertisement. Visually, the Web advertisements are similar to print advertisements and they are both intended to convey advertising messages. However, dissimilar to print advertisements, the Web advertisements are frequently published on Web pages on the World Wide Web. Web advertisements

² See for instance Google.



Figure 2.2. Depicted are two contemporary Web advertisements next to each other. On the left in the figure, an image advertisement by British Petroleum is presented. Both advertisements are in fact animated using multiple messages that cannot be seen here. On the right in the figure, an advertisement by Avis is presented. The advertisements are reprinted by kind permission of British Petroleum Corporation, Great Britain and Avis, a wholly owned subsidiary of Cendant Corporation USA (2006).

can be static (like print ads) but can also be animated or use a pop-up function. In figure 2.2, an example of a contemporary Web advertisement is reprinted.

As is apparent, the two advertisements in figure 2.2 do not have a great deal in common with the old banners of the nineties depicted in figure 2.1. These types of advertisements are also especially dissimilar to “AdWords” and clickable text from search engines such as Google or the like. Instead, these advertisements are not very different from print advertisements that are being used in newspapers and magazines. It is this type of advertisement that is of focal interest in this study.

One question that can be raised at this point is where to draw the line between simple animation and full streaming video. The answer is not uncomplicated especially considering the fact that more and more animation is being used in Web advertisements and there are a number of techniques for producing motion or animation on the Web. Only a few years previously, most animated Web advertisements were alternating between two or three visual presentations of the advertisement. At present, the advertisement designer is free to choose, from static to full motion picture, making the distinction between simple animation and full motion picture (advanced animation) irrelevant or arbitrary. To confuse things even further, there are Web advertisements that occasionally use both simple animation and streaming video. Considering that animation means moving picture, it is perhaps more relevant to discuss in terms of more or less animation employed and leave it at that³.

³ The exact animation frequency used in the experiments in this dissertation is described in detail in the method chapter.

The Web is growing important

Traditional media like TV, Radio, billboards, newspapers, magazines et cetera are well-established channels for advertising. The Web, conversely, has appeared more recently yet is increasing in importance for advertisers as well as publishers. Figures are pointing at a rapid growth of the Web (IWS) and advertisers are also expecting the Web's importance as a media channel to increase⁴

Dréze & Zufryden (1997) stated a decade ago that one of the reasons for the increased importance of the Internet is the “tremendous growth” that it has undergone in recent years. The growth after 1997, when Dréze and Zufryden made their remark, has indeed been rapid with an astonishing 1086 million users in the World in October 2006 (Internet World Stats). Hoffman and Novak (1996), who often are considered as forerunners in the area, argued that research in this area is still in its infancy and that there is a lot of research to do to map the terrain. Ducoffe (1996) and Ducoffe et al (1996) declared early that, “continuing developments in the area of new media technology represent the most important influence on the future of the advertising industry over the next 10 to 15 years”.

Zhou and Bao (2002) argue that it is not merely the Internet's tremendous growth that makes it interesting among researchers, but furthermore its “distinctive characteristics”. These distinctive characteristics of the Internet, sets it apart from other types of media channels since it is a type of media with hybrid properties (Dréze & Zufryden, 1997). The distinctive characteristics that are being referred to are for instance the ability to use animation, pop-up features, radio, streaming video, TV, interactivity and the like in one and the same media and all at the same time, if one so wishes. Coupey (1999) expresses the possibilities with the Internet and the Web, stating, “The unique features of the media can provide a focus to extend or to create theory, methodologies, and the discovery of new phenomena.” Altogether, there seem to be reasons to believe, that the World Wide Web is an important type of media to study and that research in advertising connected to the World Wide Web is in a state of renaissance.

Advertising is taking place in a setting

Marketing activities such as advertising are taking place in a social setting. These are in actual fact taking place ubiquitously in society, between companies and consumers. For instance, when an individual is starting the day by reading the morning paper she will be exposed to a number of advertisements. These advertisements are placed in a certain setting. Consumers are constantly exposed to brand names, company names and window displays affecting them in various ways.

⁴ At an industry seminar with representatives of the top advertising agencies in Sweden all participants unanimously expected the Web and the Internet to increase in importance at the expense of other media channels. No one expected TV or any of the other traditional media to have a similar development. Industry seminar (Stockholm, autumn 2005)

The number of potential encounters with advertising and other marketing activities are too numerous to describe.

To the long line of traditional encounters, the digital ones are now also added. A typical “digital encounter” is when an individual is surfing the Web and being exposed to a Web advertisement that may be part of an even greater advertising campaign. This encounter is taking place in a setting that may or may not influence the effect of the advertisement. Kakkar and Lutz (1981) have elaborated on how the situation and environmental aspects may affect consumer behavior. According to their view, the situation can have a great deal of impact on how people receive process and make sense of communication.

The significance of situational variables has also been considered important by Ward and Robertson (1973, p. 26) who argue that it is likely that situational variables account for more variance than what actor related variables do. For instance, many buyer behaviors are only exhibited under specific conditions, in specific situations (Lavidge 1966). According to Belk (1975, p. 157), a situation is a point in time and space and furthermore all those factors observable “that do not follow from a knowledge of personal (intra-individual) and stimulus (choice alternative) attributes and which have a demonstrable and systematic effect on current behavior” (Belk, 1974a).

To identify the boundaries of what constitutes a situation, Belk (1975, p. 159) puts forward five groups of situational characteristics representing general features.

Physical Surroundings – the most apparent features of a situation. The physical surrounding includes such aspects as geographical and institutional location, décor, sounds, aromas, lighting, visible configurations of merchandise or “other material surrounding the stimulus object” (Belk (1975, p. 159)).

Social Surroundings – which provide additional depth to the situation such as other persons present, their properties and roles, interpersonal interactions going on and the like.

Temporal Perspective – a dimension of situations specified in time units and related to some other entity.

Task Definition – “features of a situation include an intent or requirement to select, shop for, or obtain information about a general or specific purchase. In addition, task may reflect different buyer and user roles anticipated by the individual” (Belk (1975, p. 159)).

Antecedent States – is another group of factors that can characterize a situation. These are moods or short termed conditions immediately antecedent to a situation. They are states that the individual brings into the situation and not the result from being in a certain situation.

Albeit Belk's characterization of a situation is not targeting the Web case per se, it is apparent that there are similarities. The previously mentioned individual in the "digital encounter" who is reading the news on a Web page will be exposed to the "physical surrounding" of the Web site with its distinct features. It is naturally also relevant to consider the social surrounding as there may be other individuals present. When visiting a Web site, it is applicable to see the event in terms of a defined task. The Web surfer who is visiting a Web page has the intention to do something – to solve a task. This task solving can, in more common words, take the form of reading an article, find the weather information for the following day or to purchase something. To define and regard the Web interaction as a task is an appealing way to describe the user – Web engagement. This notion will be further elaborated in the attention section of this chapter and used as an instrument to describe the advertising setting.

In a number of studies (see f.i. Lavidge, 1966; Ward & Robertson, 1973; Belk 1974a, 1975; and Kakkar & Lutz, 1981) the significance of situational factors has been deemed imperative. Extending these notions to the advertising area would mean that advertising surrounding us and reaching our minds through our senses, is taking place in a setting where situational or contextual factors evidently are at play. This means that the design of a Web site, the colors, the framing of various areas and, in particular, the complexity of the Web site may have an impact on how people attend to, receive, process and make sense of communication. One setting may be more effective, from an advertising point of view, than another setting. In figure 2.3 below it is illustrated how the "total" environment, in which a Web advertisement may be inserted, is built up by external factors outside the screen; the Web environment, the focal area and other surrounding areas on the screen.

If the screen environment is described in detail, the following components can be found; the screen frame and the screen. The visual part of the screen comprises of the task bar, which is part of the operating system that is being used. The Web browser is also visible including the navigation toolbar and other toolbars that can be customized. When a Web page is loaded, the Web page and the information presented on the Web page will be covering most of the screen. The Web page itself can be seen as an environment which can be altered in an infinite number of ways. It is this environment that is being referred to, when stating "Web environment", in this study. Using the terminology that has been discussed hitherto it is appropriate to state that the Web environment can be seen as a task environment in which a task (for instance to read the Web news) is being solved.

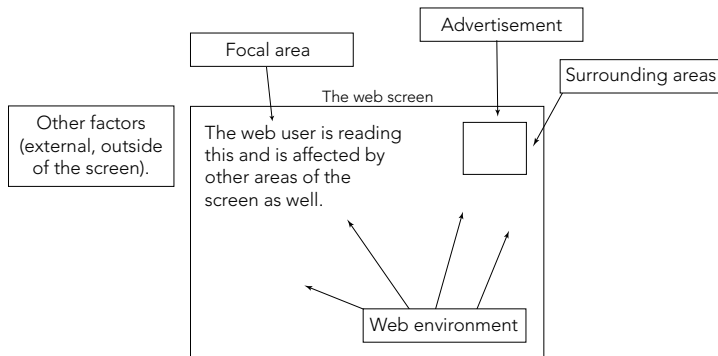


Figure 2.3 The environment in which the advertising is presented.

In figure 2.3 the various parts that is building up the setting is put together. It is in this context that Web advertising is taking place. This setting is divergent to other settings as it includes new elements that may or may not influence the effects of advertising. It is a computer mediated communication situation with a different kind of format as opposed to for instance the print media. It is a different kind of interaction since the user is not turning pages in a paper but instead clicking on links leading to additional information and additional possibilities to present the advertisements – for instance by using animation, pop-ups and the like. This model will be elaborated on at a later stage in this chapter in order to describe its various components in theoretical terms.

Outcomes of Advertising

Hitherto, it has been discussed how advertising is defined, that the World Wide Web is a different kind of environment and that advertising is taking place in a setting. Equally important is to add the outcomes of advertising. Companies, governments, non-profit organizations, political parties, and other entities employ advertising because they want specific outcomes from it.

An advertising campaign is generally undertaken in order to pursue certain goals. The goals that are pursued are often formulated by the organization or an external partner, which is designing the advertising. The reason why an organization does advertising varies but it is often done to achieve some basic effect. It can for instance be to inform (Keller, 2001) the public or a target market about services available, or to change the attitudes (Petty & Cacioppo, 1984) towards some object or activity, for example, to not drink alcohol and drive. Other examples of desirable effects are to create interest (Smith & Swinyard, 1982) towards the product that a company is promoting or to motivate or persuade (Richards & Curran, 2002) the consumers to choose offer A before offer B. For companies that are striving to make profit it is important to achieve action or an actual purchase (Lavidge & Steiner 1961) which frequently is the ultimate goal in a chain of events. However, before

coming to the very end of the purchase process it is imperative, as a first step in this chain, to capture the attention (Janiszewski and Bickart, 1994) of the audience targeted. From a communication perspective, the organization ought to start by assuring that it has the consumers' attention. Only then it can be effective in its endeavor to transfer information or to present an offer in a favorable and appealing way.

If the advertiser does not capture the attention of the consumer, then the opportunity to communicate with her is lost. With an ever-increasing number of advertisements, competing for existence the consumers' attention has become a scarce resource (Adler & Firestone, 1997; Davenport & Beck, 2001; Pieters & Wedel, 2004). From an individual advertiser's perspective, the task is to break through the clutter of advertising messages and other kinds of information that is calling for the consumers' attention.

Krugman, one of the researchers who have focused quite some effort on attention in marketing communication and advertising, has argued that consumers are screening "[...] the advertising and distributing their attention selectively" (Krugman, p. 48, 1988), with closer attention to some advertisements and with less to others. Krugman has also emphasized the role of capturing the audience's attention and pointed it out as particularly important. Janiszewski and Bickart (1994, p. 329) are also pointing out the initial phase of effects, attention, as important. Horace Schwerin (1967, p. 56-57) states, in line with Krugman, that "The opening sequence of any commercial is of key importance, since advertisers must capture and hold the attention of viewers to retard them from mentally or physically tuning out". Krugman has in his research also studied how to measure attention effects adequately using measures such as recall and recognition.

Unfortunate for organizations using advertising to communicate with their target audiences, there are not only desired effects that occur but every now and then also non-effects or even worse, undesired effects. To this category of unwanted effects belong, for instance, mistakes on the part of the advertiser (messages out of tune) so that the audience does not recognize the organization, its offer or brand. It can also be mistakes on the part of the media-planning agency or others involved in the process of bringing the message to the audience. Among all potential errors, and error sources, is an additional error that has been highlighted as the World Wide Web has grown and developed to become a part of everyday life. It is connected with the advertisers' ambition or over-ambition to get the attention of the audience. On the Web, it can be termed the "pop-up effect", which is when Web advertisements are calling for too much attention and thereby become intrusive or annoying to the user surfing on the Web site where the advertising is presented. As mentioned in the previous chapter, Brackett, Benjamin and Carr (2001) found examples where the Web surfers considered advertising on the Internet being irritating, annoying, and even insulting to people's intelligence.

This kind of negative effect is not what organizations generally want to be connected with, since it may instill negative⁵ attitudes in the audience.

Attitudes are central when discussing around both positive and negative outcomes of advertising. An attitude is a latent variable that cannot be directly observed. The attitude refers to a tendency of psychological nature that is expressed by evaluating a certain entity with some degree of favorability or unfavorability (Eagly & Chaiken, 1992). The entity referred to, often called an attitude object, can be virtually anything that can be discriminated by an individual. Hence, an individual can have favorable or unfavorable responses towards an attitude object. The responses are generally characterized as being cognitive, affective or conative. These variables, cognition, affection and conation are measurable. Therefore, the researcher is observing these variables in order to state what attitude an individual has. Cognition refers to thinking, affection to emotions and feelings while conation refers to actual behavior towards an attitude object.

Using the attitude terminology, it is adequate to state that a company can use advertising to initiate, alter or reinforce a consumer's thoughts -cognition- around a particular product or product attribute. Furthermore, it is at times desirable for advertisers to create certain emotions or feelings -affection- towards a product or its attributes. The last part is to make the consumers take action -conation- in relation to the attitude object, for instance to purchase the product and to use certain product attributes.

Even though it may seem obvious that attention getting can produce negative attitudes, other effects can work in the opposite direction. Part of the attention getting will produce brief exposures that have the potential to create an effect in the opposite direction. For instance, a Web advertisement is perceived as annoying, due to aggressive attention getting, while the brief exposure takes place. On the other hand, the consumer may forget about how annoying the advertisement was when recognizing the product and brand in the store. Since the consumer has been exposed to the brand a number of times, the brand will have a greater "familiarity" than other unfamiliar brands. Mandler, Nakamura and van Zandt (1987) suggest that mere exposures can have the potential to produce a kind of vague feeling of familiarity that later could be interpreted as liking. In a recent study, Monahan, Murphy and Zajonc (2000) arrived at the conclusion that "enhancement of one's mood state can occur by virtue of repetition of exposure" (Monahan et al., p 465). This would indicate that repetition alone has the potential to influence liking.

In a specific Web advertising case, the effects mentioned above are working in two directions. On one hand, too aggressive attention getting may evoke negative attitudes and on the other hand repeating the message may influence liking.

⁵ There are of course also cases where the advertiser wants to evoke negative attitudes towards an attitude object. This can, for instance, occur when a political party is portraying its opponents in a negative way.

In addition, when the consumer is in fact about to do the purchase the aggressive attention getting may be forgotten whereas the familiarity and liking may persist, in line with Monahan, Murphy and Zajonc's findings. There is nevertheless, the risk that aggressive attention getting in the advertising will affect the Web site where the advertising is presented in such a way that users may avoid the Web site or dislike it. These mentioned effects are important when interpreting the results of the studies to be conducted and especially when transferring the findings into a real world situation. In this research, subjects will be exposed only at one occasion whereas in real world situations repetition is obviously a dimension to consider. At the same time, it is also worth to bring to mind that there are significant methodological differences between Monahan et al's study and the one presented in this study.

Putting the parts together

To summarize what has been discussed this far and to tie various parts together the following can be stated; Advertising is part of marketing communication and has, in recent years, come to be used on the World Wide Web. Initially, a certain kind of very simple "banner ads" were used but they have been developed into a "contemporary Web advertisement" that is described as:

The Web advertisements of today, contrary to the early Web banners, often have some basic properties such as an image or description of a product, a brand name, copy text and a headline put together into an advertisement entity – the Web advertisement. Visually, the Web advertisements are similar to print advertisements and they are both intended to convey advertising messages. However, dissimilar to print advertisements, the Web advertisements are frequently published on Web pages on the World Wide Web.

Moreover, all types of advertising are taking place in a setting. Web advertising is taking place in a World Wide Web setting, which has, as has been argued around, somewhat different features than for instance print advertising. The Web advertisement and the setting in which it is presented are part of what can be seen as advertising input to the consumer. The last piece to this puzzle is the outcome of this advertising input and in particular certain aspects of this outcome, namely attention and attitudes related to attention getting.

Attention, being a construct primarily originating from and connected to psychology, is frequently used to describe the initial phase of advertising effect. In advertising models, this is often visualized when a consumer is exposed to an advertising message. Learning from experimental psychology, this way of describing attention in advertising can be elaborated and extended. It is thereby possible to increase the understanding of attention processes and how attention operates in an advertising setting. Especially when the advertising is presented in a parallel way as it is for instance on the World Wide Web, which is the case here. The parallel way of presenting information can be framed in the same way as is frequently done in research in experimental psychology. A setting where an individual, the consumer, is exposed to an advertising

message can be reinterpreted using an alternative terminology. The setting can be described as a task environment where the individual is engaged in some kind of activity, for instance reading or the like, when an advertisement is presented at the same time. Even though most consumers presumably do not see this situation as a task, it can be framed as a task, where there are two or more objects calling for attention. In focus is, from the Web user's perspective, the text and pictures that the user wants to read and look at. Outside of this focus is the advertisement that is calling for attention. The advertisement is a peripheral and secondary object struggling to catch the user's attention.

The next section will focus on how attention is modeled in advertising models. The concepts that are mentioned hitherto will be further elaborated on in detail in order to get a clear understanding of how attention to advertising in Web environments is influenced by various factors.

Central concepts in advertising

Mainstream advertising research originates from the very end of the nineteenth century. It evolved from personal selling in general and from the AIDA model in particular, which in fact was a model of personal selling. It was adapted by researchers in advertising and became a foundation for further research within the area (Strong, 1925, p.76). According to Coolson (1947) E. St. Elmo Lewis was one of the pioneers in advertising, publishing his book *Financial Advertising* already in 1908. Lewis argues in his work that good copy ought to attract attention, awaken interest and create conviction. Preston (1982) writes that Lewis actually formulated what was to become the AIDA model already back in 1898. The AIDA construct (Attention - Interest - Desire - Action) was the first formal advertising model (Preston, 1982). From this model emerged the class of persuasive hierarchy models. This model and other hierarchy of effects models have had quite an influence in the advertising field.

In a study of how advertising works (Vakratsas & Ambler, 1999) the authors are using a model framing some central concepts in advertising, as can be seen below.

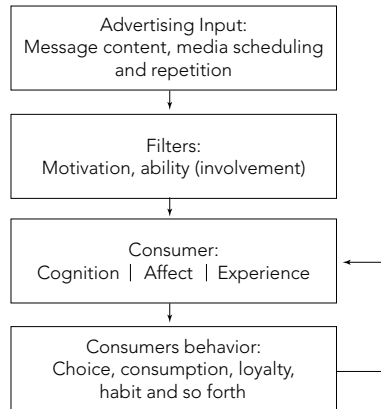


Figure 2.4 How advertising works (Vakratsas & Ambler, 1999).

In the model in figure 2.4, the starting point is the advertising input comprising of the message content i.e. the advertisement. Part of the input is the media scheduling and repetition, which together determines the reach and frequency with which the message content will find its way to the consumer. Intermediate factors that affect the consumer response are filters such as motivation and ability (involvement) to process information. Part of the model is also cognition, affect and experience where experience represents memories of prior experiences of the advertised product or other products similar in function. Common for many studies in the advertising area is that they often focus on one or a few of the concepts presented in the model above. Also common is that authors tend to use some kind of hierarchical model even though for instance Vakratsas and Ambler claim to find little support for a sequential effect in their study. Two of the early proponents of the hierarchy-of-effects model, Lavidge and Steiner (1961), were elaborating on the functions of advertising. They meant that the effects of advertising actually are long-term but if something will have a long-term effect “...something must be happening in the short run, something that will ultimately lead to eventual sales results” (Lavidge and Steiner, 1961, p. 59). Lavidge and Steiner also argued that this effect should or could be measured in order to evaluate advertising effectiveness.

According to their view, advertising could be thought of as a “force”, which is guiding people through a number of stages. The first stage would be potential customers who are unaware of the product or the product offer. The second stage is consumers aware of the product’s existence but is still far from buying. The next stage consists of consumers who know about the product and the offer. The fourth stage in the sequence comprise of those who like the product in question, i.e. having a favorable attitude toward the product. At the fifth stage, people prefer the product to other alternatives. At the following stage, consumers are not only preferring the product but also convinced that this is the best option and finally the last stage is where all previous stages are translated

into a purchase. This model described is rather known to marketers as a way to determine what communication objectives that might be appropriate in different stages. Lavidge and Steiner (1961) elaborated further and meant that these stages were an indication of three main functions of advertising namely the cognitive function – the intellectual, “thinking” part, the affective function – the emotional and feeling factor and finally the conative function – the action oriented component. Their view was that these three components were crucial to advertising and that the aim of advertising would be to move consumers through these stages, ultimately leading to a purchase.

Since Lavidge and Steiner’s article there has been a tremendous development within the advertising area and various models have been proposed, hierarchical and non-hierarchical, focusing on different aspects of advertising and taking into account some concepts while leaving out others. In the next section, a few models that are relevant to this study will be discussed and highlighted.

Models describing advertising

Not surprisingly, there is not just one model used by researchers that describes advertising. On the contrary, there are many and they tend to focus on different aspects of the advertising phenomena depending upon what the author of a particular model has chosen to focus on. The advertising models have similarities and dissimilarities and a few of these models will be looked upon in detail. Since the focal interest is the concept of attention, extra attention will be given to what the models are contributing in that particular respect.

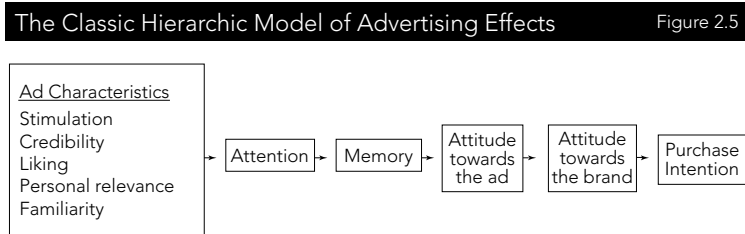


Figure 2.5 The Classic Hierarchic Model of Advertising Effects (Attention, Memory, Attitude and Conation: A Test of the Advertising Hierarchy, Thorson, Chi and Leavitt, 1992)

The model presented above is a typical hierarchic model of advertising effects. The sequential process starts on the left in the model where the characteristics of the advertisement are presented. Stimulation refers to the advertisement’s ability to stimulate the modalities of the consumer such as vision, hearing or more uncommonly, smell, taste as well as touch. The purpose with an advertisement is to stimulate and that is also why advertisements are sometimes referred to as stimuli. Credibility relates to how credible the message is perceived. This is of course subjective since different individuals will have different opinions about whether the advertisement is credible or not. Furthermore, personal relevance, liking and familiarity are important variables that have an impact on advertising effect.

The next step in the model is attention, which is part of the consumer and is described as the amount of attention distributed to the advertisement by the consumer. After that comes memory, which is a measure of how well the consumer remembers the advertisement. From the advertiser's perspective it is naturally preferable if the target group remembers the advertisement. Next, is attitude towards the ad (A.ad.) and attitude towards the brand (A.br.) leading to the final stage namely, purchase intention (P.I.). Purchase intention is the conative component where the consumer acts upon the advertisement and initiates a purchase of the advertised product.

The model presented above gives a quite good overview of what has been considered important concepts in advertising. When discussing advertising effects, it is often a matter of measuring variation in these constructs and their relation to each other. As we can see, the model is sequential in nature and it is thought that there is no or limited interaction or feedback between the different stages. In the literature of advertising theory, this model or derivatives of it, has been widely used (Thorson et al. 1992). Despite its wide use it has been criticized and many studies have found little or no support for its design (Thorson et al. 1992). In a study by Thorson et al (1992) it was found that advertisement characteristics did indeed affect purchase intention but the effects were both direct and partially mediated. This mediation did, however, not flow through attention and memory to attitudinal and conative responses. Instead, some characteristics such as credibility and liking operate through (A.ad) attitude towards the advertisement and (A.br) attitude towards the brand on purchase intention. Furthermore, it was found that attention affects neither purchase intention nor attitude towards the advertisement. Consequently, conative responses are not driven by attention. In addition, they found that the measure recall was not a good index of persuasion. Their result provided evidence that attending to an advertisement makes viewers remember it better but it had no influence on whether viewers would like the advertisement or brand. These conclusions seem to follow a general kind of logic since mere attention to an advertisement can hardly have an impact on liking⁶. Gibson (1983) has, in line with this logic, criticized the use of recall measures to evaluate advertisements since recall can only have little or no correlation with consumer choices in the market. Interesting still, is Thorson's finding that none of the five advertisement characteristics drive attention or memory despite the fact that they drive attitude towards the advertisement, attitude towards the brand and purchase intention.

The impact of advertisement characteristics on attitude towards the ad and attitude towards the brand is an important research area that often has been debated among researchers (Brown & Stayman, 1992). This, since the purpose of advertising often is meant to influence attitudes. Attitude has in advertising contexts generally been described as "a learned predisposition to respond in

⁶ Just the fact that a viewer watches and attend to a commercial should have little effect on liking since there are numerous

the consistently favorable or unfavorable manner to advertising in general” (Lutz, 1985). In the classical model above attitude towards the advertisement and attitude towards the brand is, not surprisingly, part of the sequence and has also been subjected to extensive research (Brown & Stayman, 1992). Attitude towards the ad and attitude towards the brand are two measures that are being studied on the dimension favorable/unfavorable or as a composite of other belief items such as informational value, entertainment and the like (Mehta, 2000, Bauer and Greyser, 1968).

Millar (1987) has studied how thought prior to an attitude assessment influences the correlation between attitude and behavior. In brief, it can be said that thoughts (prior to an attitude assessment) can both increase and decrease the correlation between attitude and behavior. In a study by Wilson et al (1984, in Millar, 1987) one experiment group had a correlation of 0,17 and the other test group a correlation of 0.54 for attitude correlation depending on whether they had been involved in cognitive effort or not prior to the attitude assessment. In Thorson’s study (Thorson et al, 1992) they concluded that stimulation and credibility drive attitude towards the advertisement, credibility, liking and familiarity drive attitude toward the brand and credibility and personal relevance drive purchase intention.

Next, two other advertising models, which are slightly different compared to the previous model will be examined. These two models are derived from the classical model but instead of having one single route from advertisement characteristics to purchase intention they have two routes. They are also focusing on advertising from an emotional/non-emotional perspective.

The Two-Route Hierarchic Model for Emotional Commercials Figure 2.6a

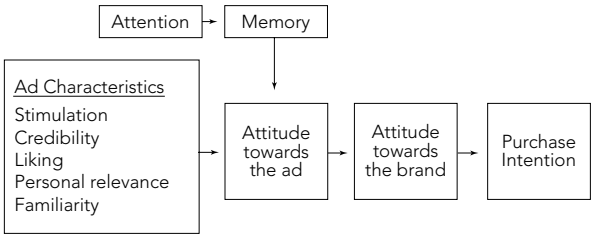


Figure A, The Two-Route Hierarchic Model for Emotional Commercials

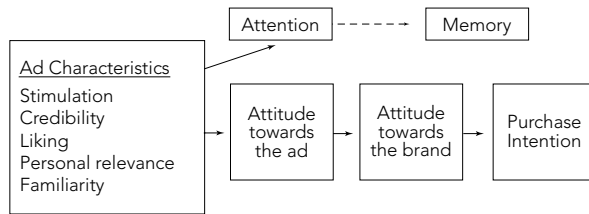


Figure B, The Two-Route Hierarchic Model for Non-emotional Commercials

Figure 2.6 The Two-Route Hierarchic Model of Advertising Effects: Emotional vs. Non-emotional commercials. (Attention, Memory, Attitude and Conation: A Test of the Advertising Hierarchy, Thorson, Chi and Leavitt, 1992)

In the above figure, the two-route hierarchic model of advertising effects is displayed. As can be observed, these two models differ from the classical model in the sense that they have two separate routes. In the first model, figure A, it can be observed that there is one route that is influenced by the advertisement characteristics and a second route that is not influenced by the advertisement characteristics. In the second model, figure B, both routes are influenced by the advertisement characteristics. These two models have in common the “main route” comprising of the attitude towards the advertisement, attitude towards the brand and purchase intention.

The attention – memory sequence in the models is treated differently for emotional commercials compared to non-emotional commercials. The reason for this is that an advertisement that elicits emotional response in the viewer is supposed to create a memory engram that is enhanced as opposed to non-emotional conditions (Squires, 1986). It is more likely that there is a direct link between memory and attitudes for emotional advertisements than for non-emotional advertisements (Thorson, Chi and Leavitt, 1992). In the non-emotional version of the advertising model there is no link between memory and other constructs, except for its input from attention.

It is rather interesting when examining these two models (and other similar models) from an attention point of view in the sense that the attention and memory constructs seem to fall outside of the model. In figure A, the first model, the attention construct does not correlate with the advertisement characteristics and in the second model, figure B, the memory construct does not correlate with the attitude towards the advertisement construct. Hence, no unified model can be reached. Instead, different models apply to different kinds of stimuli i.e. commercials. Here, the question can be raised whether it is possible to separate attention and memory from attitude formation in such a way as in these models above. Without any kind of attention to an object and without short-term, long-term, verbal or pictorial memory it becomes hard for the subject to have any knowledge or attitude towards a specific advertisement and its characteristics.

In the models above attention and memory have, to some extent, been described as processes not intrinsically related to the “Aad, Abr and P.I.”-sequence. At the same time, data have not supported the classic hierarchy of advertising effect model where attention and memory is part of the main sequence.

Considering that attention is a construct that is inherently connected with whether input will reach the central nervous system or not, it is indeed disturbing that the attention and memory constructs have a subordinate route or sequence such as can be seen from the models A and B in figure 2.6. At the same time, data in some studies do not support the classic hierarchic advertising model. The reason why attention and memory are modeled aside of the main route is because data have not shown to have any correlation between attention and memory and the other constructs.

Before going any further into this potential contradiction, an additional model will be introduced. A fourth model which is relevant in this context and which has been widely used, namely, The Elaboration Likelihood Model of Persuasion will be discussed.

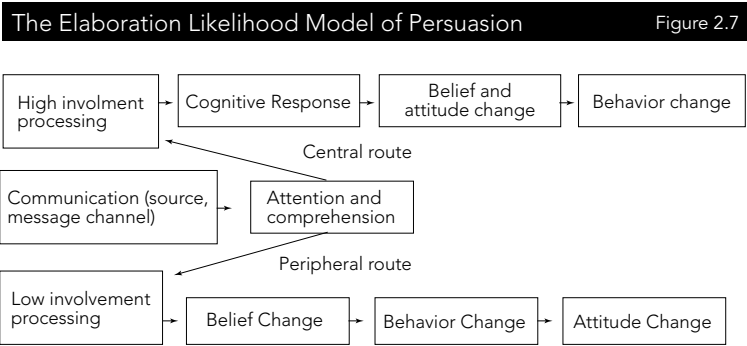


Figure 2.7 The Elaboration Likelihood Model of Persuasion.

The Elaboration Likelihood Model of persuasion, ELM, has dual routes depending upon whether the subject will be engaged in a low or high involvement processing. The low involvement processing comprises of a peripheral route starting with belief change, behavior change and finally attitude change. The high involvement processing takes the central route comprising of cognitive responses, belief and attitude change followed by behavior change. The ELM is a model that is describing attitude formation under different levels of involvement and processing. Authors such as Karson and Korgaonkar (2001) are describing the ELM as one of the leading models for how involvement influences communication effects.

Despite the wide use of the ELM even the inventors of the model, Petty and Cacioppo, later criticized the model since they had found that research on persuasion and involvement indicated that neither the central nor the peripheral approach alone could account for the multiplicity of attitude change

that has been observed (Bitner and Obermiller, 1985). Bitner and Obermiller also criticized the Elaboration Likelihood Model mainly by pointing at the following five perceived problems with the model:

- 1) Central cues – peripheral cues which are which?
- 2) How does peripheral processing influence affect?
- 3) Are there differences in the strength of peripherally and centrally processed attitudes?
- 4) Are central and peripheral processing interactive?
- 5) Can the central processor make do with peripheral cues?

The model has also been targeted by Vakratsas and Ambler (1999) criticizing the ELM model together with other persuasive hierarchy models (the AIDA group) chiefly because: this category of models assumes that the “[...] brain works through a series of stages, as if it were a primitive serial computer. The brain actually works in parallel” (Ambler, 2000, p. 305). And also because: “these models ignore the consumer’s experience of previous product usage” (Ambler, 2000, p. 305). Ambler is a critic of the strong theory (as the main theory) stating that the notion that advertising equals persuasion is an ingrained belief and that most advertising “does not persuade consumers to change their minds but strengthens new behavior once changed” (Ambler 2000, p. 300). Instead he is pointing at the advantages of the weak theory (reinforcement) brought forward by Ehrenberg (1974) which has, according to Ambler, received less attention, even though the weak theory is perhaps more applicable to real world situations (Ambler, 2000).

Without going further into the complexities of the Elaboration Likelihood Model, we will instead shift focus and look at the Elaboration Likelihood Model of persuasion and examine what it and the other models have to say about attention and comprehension. In figure 2.7 we can observe that the attention and comprehension construct precedes the two routes independently of whether it is a low or high level of involvement. Intuitively, this is a more appealing situation and solution as opposed to what was seen in the two previous models. The treatment of the concept of attention in the Elaboration Likelihood Model is rather similar to how it is treated in the model in figure 2.5.

What have been witnessed this far in the discussed models, is an attention construct that was downplayed in figure 2.6 A since attention was considered as having an indirect path leading to memory and attitude towards the advertisement in the end. In figure 2.6 B attention and memory was separated from the main route. As stated earlier, it is rather paradoxical when observing that neither attention nor memory has any impact on the other constructs in the model. Consequently, attention and memory is of limited importance in forming attitudes and a purchase intention, if this would be assumed to be correct. This feature of the model in figure 2.6 B does not coincide with, for instance, Mack and Rock’s (1998, p. 14) notion that there is no perception without attention. Mack and Rock are stating that if there is a

reduced attention, there will be a reduced perception, which in turn will lead to less attitude change or attitude reinforcement. Neurophysiologic evidence is supporting this last position suggesting that there is a reduced processing of unattended stimuli, that is to say, stimuli that a subject has not been attending to (Eysenck & Keane, 2000). Tulving and Thomson (1973) are stating “Only that can be retrieved that has been stored, and ... how it can be retrieved depends on how it was stored.” (Tulving and Thomson, 1973, p. 359). Hence, recall as well as recognition will suffer if the stimulus was unattended. Taken together, it becomes problematic with hierarchical models where the attention construct is detached from the attitude formation part and does not precede the attitude formation⁷.

As a result, it seems commonsensical to state that, first of all, an input in the form of a message has to be attended to, at least at some basic level, in order to be perceived. Moreover, the message or parts of it has to be placed in memory in the form of, for instance, an attitude towards an advertisement and an attitude towards a brand. If there is no kind of memory of this (unattended) stimulus, it becomes difficult to comprehend how the consumer will be able to recall or recognize a brand. A model that does not include attention in the initiation of a communicative process does not follow the logic of attention to a great extent and it becomes even more problematic when memory is set aside.

When studying the two models in figure 2.5 and 2.7 it is apparent that these models do have a serial perspective and an attention construct placed in a serial route. The attention construct is placed before memory, as in the case in the classical hierarchical model, or before the central and peripheral routes as in the case with the Elaboration Likelihood Model. From these two models it can be deduced that the process stops if there is no attention. This is logical.

When recapitulating the above discussions and in particular when taking into account Belk's notion, there are factors in the surrounding, the environment or in the situation that has the potential to affect the communication and the attention to the communication. Since there are no constructs in the classical hierarchical model or the Elaboration Likelihood Model that are considering this, a general model where this construct can be found will be discussed.

⁷ It is at this point also relevant to mention that an attitude comprises of the cognitive, affective and conative components (Tesser and Schaffer, 1990) and is a predisposition that is expressed by evaluating for instance a product with some degree of favor or disfavor. Furthermore attitudes are considered as being rather stable over time.

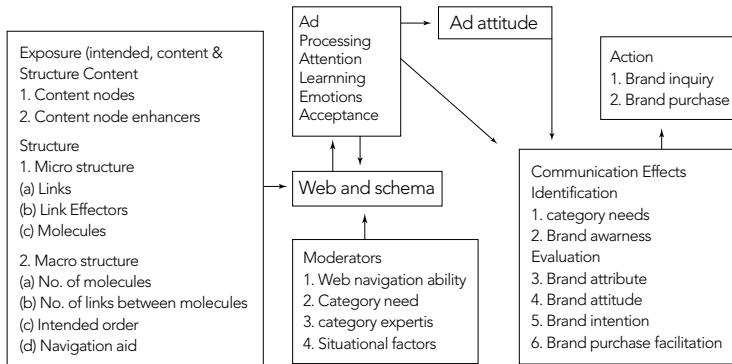


Figure 2.8 Summary model of web ad effects. (From John R. Rossiter and Steven Bellman, 1999)

The model in figure 2.8 is indeed detailed and takes into consideration additional aspects of the advertising phenomena, as opposed to the previously discussed models. The model is in fact an adaptation of a general advertising model that Rossiter and Percy presented in 1997 (1997). This model is dissimilar to the previously studied models in the sense that it is specifically designed to model Web advertising. Rossiter and Bellman are stating in their article that Web advertising has different characteristics than other kinds of advertising. Mainly, since the consumer is “actively skipping about searching for interesting items of information, often pausing to be entertained and perhaps missing or deliberately bypassing content that the advertiser thinks is important.” (Rossiter and Bellman, 1999, p. 15) This is an exquisite observation capturing a general picture of Web behavior among Web surfers. What they are describing in essence, is the attentional system in action, which is constantly engaged in selecting, including and excluding information when guiding through the environment – the Web site, where advertisers are competing for attention. This behavior is not unique for the World Wide Web. In fact it is very similar⁸ to the behavior when “surfing” through print material, such as newspapers, magazines and the like.

In the model by Rossiter and Bellman above, the situational factors are taken into consideration. The situational factors are moderators affecting the Web ad schema and the advertisement processing where the concept of attention can be identified. Even though the model is mentioning these constructs it is not specifically targeting the interrelation between attention and context represented as a task environment.

⁸ There are of course differences in the interactive possibilities though.

Moreover, it is not stressed in any of the other models either. Rossiter and Bellman's model is the only one, of those examined here⁹, where situational factors are taken into account. Following the ideas of Belk, situational factors may have an impact on the process of attending to different stimuli and ought to be examined further.

Prior to elaborating on the relation between attention and situational factors, it is important to discuss around advertising and the World Wide Web.

The World Wide Web as an advertising vehicle

The development of marketing communication on the Internet has been rapid, driven by a variety of companies exploring the possibilities on the Web. According to Hoffman and Novak (1997b) the Internet is a new "marketscape" that calls for a new marketing paradigm. This, since consumers are more active on the Internet than is the case with other media (Hoffman and Novak, 1996). That a new marketing paradigm is needed as a consequence of the emerging use of the Internet and the World Wide Web is perhaps to stretch matters too far. Nevertheless, the development of the Web poses a challenge to companies in a variety of industries and in particular to organizational functions related to marketing communication and advertising. An opposite stance that some are taking, compared to for instance Hoffman and Novak, is that the Internet and the World Wide Web is not very unique; it is just another communication channel among a number of channels. This stance is, on the other hand, perhaps not quite acknowledging the versatile nature of the Web or the radical impact that it has had in most parts of society.

With the Internet, companies have gained a new platform to communicate to and with their target audience. This is possible through various means such as e-mail, chats, instant messaging, discussion groups, news groups, on-line gaming, hypertext links, short message services through gateways to GSM networks, ip-phone communication and the like. One of the most important and current possibilities with the Internet is to use it for advertising on Web sites and Web pages.

Advertising on the World Wide Web has increased the last few years giving new opportunities for marketers to reach their customers. Advertising can be conducted in different ways on the Web ranging from static banners and advertisements, click through banners, traditional as well as interactive commercials "broadcasted" with streaming video, pop up advertisements (interstitials), triggered advertisements, or a combination of two or more of these advertising tools. The variation and combination of different kinds of advertisements are greater on the World Wide Web in comparison to any other type of media.

⁹ Rossiter and Bellman's model is not the only model in marketing communication and advertising that have situational factors present, see for instance Belk.

Advertising on the Web has both differences as well as similarities when comparing to established advertising media such as TV, radio or print. A salient property distinguishing Web advertising from other kinds of advertising is that it has hybrid characteristics combining properties from print, broadcast, outdoor, and direct response media (Dréze and Zufryden, 1997). As a whole, these properties give Web advertising designers room for creativity and development of new combined types of advertising. However, advertising on the Web can be distinguished from other broadcasting media (television & radio) since the advertising message is integrated within the editorial material in the same manner as in print media (Chandon, Chtourou and Fortin, 2003). In television and radio, advertising messages and program content is presented sequentially. That is, program content is presented in a separated block which is interrupted by a block of commercials and subsequently a new block of program content is followed by a block of commercials and so on. Thus, the commercial block creates a “pause” in the program content that can be used for various activities¹⁰ by the consumers. The pause represents a possibility to divert the attention from the media and thereby the advertising as well. On the Web, advertisements are competing with the Web page content for the consumers’ attention in a parallel way. The consumers’ attention is thereby continuously directed to an area close to the presented advertising material.

In the case of parallel presentation Web advertising is similar to print where advertisements are presented together with program content or the editorial environment. Nonetheless, the dissimilarities between Web and print that are often pointed at are most of all that the Web has a greater interactivity, greater complexity and a high level of flexibility (Bruner & Kumar, 2000, Karson and Korgaonkar, 2001). There are of course differences in the visual appearance as well.

Web advertisements are placed on the World Wide Web

How to place and where to place a banner or an advertisement on a Web page has been studied by many researchers (see for instance Bruner; Shamdasani, Stanaland and Tan; Dréze and Zufryden; Novak, Hoffman and Yung) with the aim to obtain an understanding of how to gain the best effect out of an advertisement. The complexity of a Website has been a concern since prior research has suggested that increased complexity could reduce the effect of an advertisement (Stevenson, Bruner, and Kumar, 2000). Since the developments in Web design has been racing towards greater complexity with competing sights and sounds found on Web pages (Bruner G., 2000) it is crucial to understand how this affects advertising. One of the main reasons why Web design is heading towards greater complexity is because of the possibility to transfer larger amounts of data per time unit.

¹⁰ To fetch some snacks, go to the restroom, watch another program or the like.

This development of hardware infrastructure speeding up data networks has given Web designers new opportunities to improve Web design as well as Web advertisements. As a result, advertising on the Web today offers greater possibilities than it did just a few years ago.

Increased complexity on Web sites (Bruner G., 2000) is created by using more graphic images, more text (even blinking or the like), more hyperlinks, more sound, more animation and also more full-motion video. The added complexity on Web sites makes them more attractive and enhances the perceived entertainment value and exclusivity. Still, as Web designers add these features to attract users, some studies from psychology and advertising suggest that interest may grow with complexity but not necessarily pleasantness. Already early research (Berlyne, 1960) has shown that pleasantness is optimal at some low to moderate level of complexity. Thus, the new way of designing and presenting Web sites may have negative consequences for the users' perception and attitude towards the Web site (Bruner G., 2000). Berlyne (1960), was furthermore stating that people, in general, are more motivated to explore complex stimuli when they appear in a setting of simpler stimuli which is in line with the idea that increased complexity may affect the impact of advertising in a negative way.

The Web sites and their various environments that is referred to here is to some extent a mirror image of the editorial environment which is the term often used for print media (Appel, 2000). Advertisements in print media are placed into the editorial environment and the editorial material surrounding an advertisement has been considered important as a factor influencing the effectiveness of the advertisement. Appel has elaborated around this issue and he is arguing that there is a strong relationship between editorial environment and advertising effectiveness. In Appel's article he is arguing that when the credibility of editorial material in a magazine was low, it also affected the effectiveness of an advertisement in a negative way. When the editorial environment on the other hand was credible, the advertisement also scored higher on perceived credibility. Appel attributed this effect to composition of audience partly but mainly to the editorial environment. It is plausible that this "editorial environment" effect that Appel is discussing around is present in a Web setting as well as in print.

In line with Appel's findings, there are studies showing that the same source delivering the same message to the same audience can produce different effects depending on the editorial context in which the message was presented (Chaiken and Stangor, 1987; Cooper and Croyle, 1984; Collins, and Miller, 1969). Context has also been shown to be important since it can affect recipients' judgments of advertised products (Puto, 1987; Smith 1996; Woodside and Singer, 1994)

Shamdasani et al (2001) has studied the vehicle source as a variable affecting the effects of an ad. They are stating that "source variables ... essentially moderate

the impact of a persuasive message by influencing the audience's confidence in the message endorsed by the source" (Shamdasani et al 2001, p. 8). There are in other words variables that are connected to the source and not the message that affect the impact of the message. Source credibility is important since when credibility is high, consumers counter-argue less with advertising claims and are therefore more influenced by the message (Grewal, Gotlieb, and Marmorstein, 1994). When source credibility is low, conversely, consumers discount the arguments made in the message. Thus, messages presented by a highly credible source are more readily accepted and induce greater attitude change in consumers than a source with low credibility (Harmon and Coney, 1982; Sternthal, Dholakia, and Leavitt, 1978).

In a study of Web advertising recall and recognition (Mullarkey and Danaher, 2003) the authors found that factors such as duration of page viewing, Web page context factors and viewing mode to be crucial and part of the determinants of advertising effect. The impact of the duration of Web page viewing is consistent with studies conducted of televised advertising. Researchers (Krugman D., Cameron and White, 1995, and Krugman H., 1986) showed that the more time spent viewing and attending to an advertising media, the more advertising content respondents tended to remember. The connection between attention to advertising and viewing duration is tied to the information processing that the consumer is occupied with. A greater opportunity (reinforced by time) to attend to an advertisement and to process information result in a positive effect on recognition. This is also being supported by studies using neuro-imaging (Rossiter, Silberstein, Harris and Nield, 2001).

The viewing mode in the study by Mullarkey and Danaher (2003) is described in a similar manner as in the study to be conducted here. Mullarkey and Danaher considered it reasonable to divide Web surfers into two categories representing two different modes, i.e. "goal directed" and "surfing". Their terminology is brought in to the advertising area by Janiszewski (1998) who is arguing that there are two broad types of behavior namely, goal directed search and exploratory search. Goal directed visual search behavior has been shown to reduce attention to peripheral stimuli, whereas exploratory search behavior gives peripheral stimuli a chance to be processed. Mullarkey and Danaher argue in line with Janiszewski's findings stating that when consumer viewing or use is directed toward a particular task there would be a reduction of the impact of advertising. A less goal directed and exploratory surfing behavior would on the other hand result in more browsing of media content, including peripheral content such as advertisements. However, a limitation of their study was nonetheless that the respondents never engaged in real Web surfing activities since the experiments were designed, and limited, in such a way that the respondents merely watched Websites that were automatically switched every 20, 40 or 60 seconds. Thus, the real hands-on surfing never occurred in that study. Since there was no hands-on surfing there were no interaction, clicking or surfing either which are the hallmarks of Web – user interaction.

Web page context factors were also addressed in the Mullarkey and Danaher's study and in line with other authors (see for instance Bruner G., 2000) the context factor was described as the design and layout of the Web site. The main context effect taken into consideration was how design of the Web page and how competing stimuli "...and potential page cluttering or excessive complexity could affect reception of advertising" (Mullarkey and Danaher, p. 255, 2003). Similar studies of Web context effects have been focusing on Web page background complexity (Bruner and Kumar, 2000, Stevenson, Bruner and Kumar 2000), and also the Web page complexity's impact on page access (Dreze and Zufryden, 1997).

In summary it is adequate to say that Web advertisements are placed in a Web setting. The Web setting is essentially very similar to its print counter part "the editorial environment". The general development on Web sites the last few years has been towards greater complexity and more competing stimuli resulting in a developed Web setting. The added complexity on Web sites makes them more attractive and enhances the perceived entertainment value and exclusivity. This is an evolution that can on the one hand increase pleasantness but on the other hand reduce overview and access. Simultaneously, being a context variable, complexity is affecting the task environment moderating how attention is distributed towards advertisements. Thus, changes in complexity and environment have occurred and are occurring that may have disadvantageous influence on advertising.

The advertisement

Another obvious factor influencing the total advertising effect is naturally the advertisement itself. Hitherto, we have not been dedicating much attention to the advertisement itself other than factors surrounding it and affecting the advertising effect indirectly. Next, focus will be on the advertisement and the properties of an advertisement that affect attention, among other effects that can be measured.

One of the main principles with advertising is to attract attention (Pieters & Wedel, 2004), in order to get the opportunity to present the company offer to the consumer. However, it is becoming increasingly difficult to attract attention because of increased clutter and noise. For advertisers the quest to reach customers is more demanding today when, for instance, half of the material in a typical magazine consists of advertisements. Consequently, the inability to capture consumers' attention has become more important and prioritized (Adler & Firestone, 1997; Davenport & Beck 2001; Pieters & Wedel, 2004). Some are even claiming that "the power of marketing is eroding ... from lack of attention" (Sacharin 2001, p 3. in Pieters & Wedel, 2004).

The pursuit to attract attention is a complex one and has many paths. Part of it is the message that is being transferred to the consumer and in particular the properties of the advertisement. That size plays a major role and has a positive correlation with attention is a general notion in advertising (Finn,

1988; Abernethy & Laband, 2004) and has recently also been supported by research on Web site advertising (Baltas, 2003). Except for size, there are many other characteristics of an advertisement that have been studied by researchers. In the work of Finn, other characteristics (for print ads) have been shown as in the figure below.

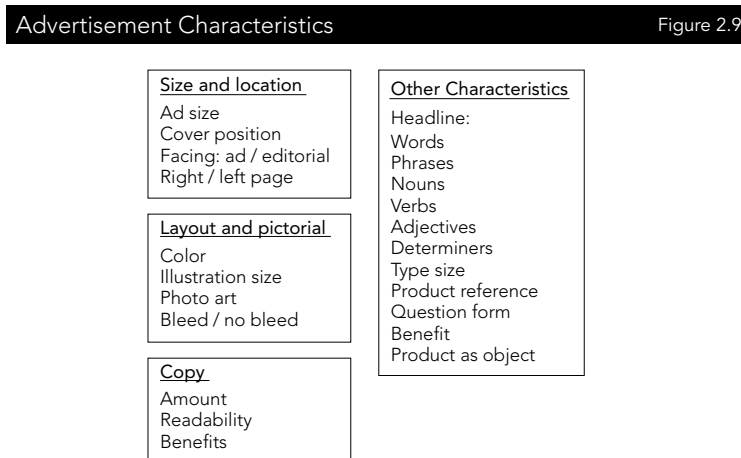


Figure 2.9 Advertisement characteristics. Adapted from Finn (1988).

Of the characteristics listed in figure 2.9, not unexpectedly, advertisement size was in fact the property that had shown a significant effect most frequently in the material that Finn reviewed. However, aside of the characteristics stated above later researchers have pointed at a few central characteristics of an advertisement that are important to take into consideration. According to Pieters and Wedel (2004) there are three key elements that can be identified in an advertisement, the brand, the picture and the text. Their position is that these three elements have distinct effects on attention.

In Pieters' and Wedel's study they found that the pictorial was superior in attracting attention, independently of its size. Other researchers are also reporting that the pictorial is by far the "most important structural element in magazine advertising" (Rossiter & Percy, p. 295, 1997) and studies (with eye movement tracker) are in fact showing that around 90% of the viewers fixate the main picture in an advertisement before they start focusing on the copy text (Kroeber-Riel, 1984). The enduring effect after viewing the advertisement is the formation of a visual memory of the advertisement that enables subsequent recognition (Finn, 1988). These findings presented here should lead us to convert to the standpoint that advertisements should seldom be designed without adding a pictorial element to it. In that case (without picture) we would suffer the benefit of base line attention to the pictorial element. Furthermore, the pictorial element is also supposed to lead the reader or viewer to the other elements of the advertisement. The purpose is not only to attract attention but to propel readers to engage in reading the brand and text elements.

Not only the pictorial elements but also the text elements are considered as being important and even assumed to be able to capture attention. Text elements are usually divided into two main categories namely, the headline and the copy text. The headline is supposed to be an eye catcher capturing the readers' attention and being interesting enough to get the reader to continue with the copy text in the advertisement. One of the proponents of the importance of headlines is David Ogilvy. One of the more well-known statements in advertising originates actually from Ogilvy saying that "The wickedest of all sins is to run an advertisement without a headline" (Ogilvy, 1963, p. 130, author's italics). Some advertisers hold the view that the headline is often perceived as the most vital advertisement component (Pieters & Wedel, 2004). This position among practitioners is however challenged by researchers such as Kroeber-Riel who is pointing out that respondents have a preference for attending to pictorial elements and that they in fact avoided, if possible, "the cognitive effort of reading the verbal elements when skimming ads" (Kroeber-Riel, 1984, p. 593). The text elements are though important in that they can communicate specific information about the product offer that is more complex and that cannot be conveyed by the pictorial element.

The final element, the brand, comprises of the brand name, trademark and logo (Pieters & Wedel, 2004). The brand name is a potential carrier of image, value and status communicating this information in a subtle way to the audience. There are scholars arguing both for maximizing and minimizing the brand size in an advertisement. Those in favor for a brand that has a prominent position in an advertisement argue that the brand is important to remember and also that it should be easily identified. If the advertisement stands out in comparison to competitors it will attract more attention and generate favorable brand communication effects (Pieters & Wedel, 2004). These properties as a whole will for instance help the consumer recognize and choose the brand when entering a buying situation.

Those in favor of a less salient brand placement in an advertisement claim that the brand element signals that the message is an advertisement and since the consumers are not interested in advertising it will be counter-productive. Hence the brand strategist or the advertiser ought to downplay the size and location of the brand in the advertisement. It is worth to notice that it is commonly assumed that consumers are not interested in any advertising whatsoever. As a matter of fact it is assumed that consumers "hate" advertising (Aitchinson, 1999 p. 61. in Pieters & Wedel, 2004). This is a rather extreme position.

In a print advertisement context and potentially also in a Web context it is important to take these three key elements (the brand, the picture and the text elements mentioned previously) into consideration when designing an advertisement. Therefore, the three elements discussed have been taken into consideration when developing and designing the experimental advertisement so that the experimental advertisements have these generic elements. However, these elements will not be manipulated since they are not unique to Web

advertisements. Instead it is the specific Web dimension of advertisements that will be altered. In Web advertising there are additional properties than the brand, the pictorial and the text that may generate increased/decreased attention to the advertisement. A Web advertisement can have properties that reach beyond the list presented in figure 2.9, properties that are, to some extent, unique for Web advertising. It is these properties, animation and motion together with abrupt appearance that will be manipulated. In the following it will be elaborated around this extra dimension that Web advertisements have compared to for instance print advertisements.

The Web dimension of advertisements

When studying different World Wide Web advertisements and what various authors have written about Web advertising¹¹ one will soon discover a diversity of types of advertisements and also a general lack of classification. Most authors are referring to and studying the banner advertisement, hitherto few are describing its properties¹². Yet, development of the WWW has brought new advertisement tools, which in turn has made it evident that these tools have to be classified. Classifications have however been poor or at least not up to date with the rapid development in terms of advertisement design and also development of information technology infrastructure, making it possible with larger and more demanding advertisements on the Web.

Despite the rapid development in some parts of the world, researchers are still referring to the banner advertisements as, "...the most common form of advertising currently" (Danaher and Mullarkey, 2003, p. 253), which is a small billboard-like graphic that appears on a Website that is clickable (Hoffman and Novak, 2000), and furthermore, "...is a rectangular shaped image typically located at the top of a Web page" (Chandon, Chtourou and Fortin, 2003, p.217).

¹¹ There is a wide variety of advertisements and advertisement formats that is being used on the Web. The more frequently used advertisements will be discussed with a main focus on those types of advertisements that are the most relevant for this study.

¹² A reason why few authors bother defining web advertisements might be the fact that the banner advertisement was the first kind of advertisement that was used on a larger scale and they are now taken for granted. However, development of the WWW has brought new advertisement tools making it inappropriate to classify all web advertisements as banner advertisements. Banners were the first commercial form of online advertising and were created by the staff of the magazine 'Wired'. Banners quickly became adopted as an advertising standard generating revenues for publishing and content sites (www.rightonthespot.com).

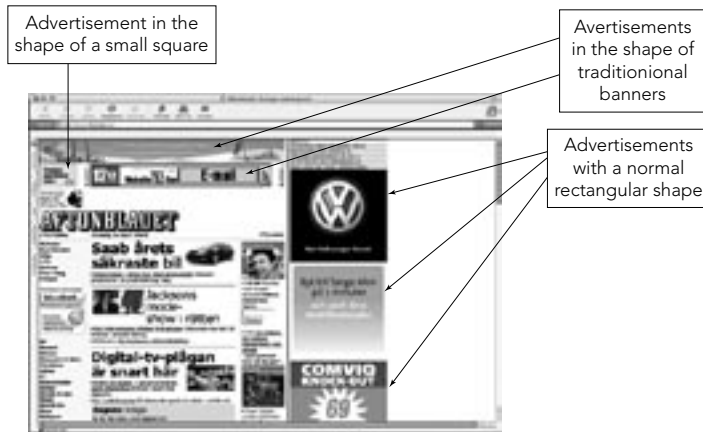


Figure 2.10 Web advertisements in different sizes and shapes.

The notion that a banner advertisement is a rectangular, small billboard-like graphic and also the most common form of advertising currently, does not fit well with the kind of advertisements that is frequently being used on many north-European Web pages as well as international ones. Pilot study number two pointed in the direction that Web advertisements nowadays have little or no resemblance of their banner counterparts¹³ from the mid-nineties. The one-colored, static banners that were being used at that time are infrequently used on today's Web pages. Since modern Web advertisements are becoming increasingly similar to print advertisements as opposed to banners, one could argue that it is about time to rename these modern Web advertisements. In addition, when taking into consideration the fact that banner advertisements have the purpose to evoke click-through at least for high-involvement and functional products (Dahlén, Ekborn, and Mörner, 2000; Dahlén and Bergendahl, 2001; Dahlén, 2002) and that the click-through rates have fallen to below 1 ‰ (or 1 in 1000), it seems as if banner advertisement's prime time has reached its peak. Still, there are banner advertisements that are being used and that will be used although new sizes and formats are also appearing. Even though many researchers are still holding on to the banner advertisement, the Interactive Advertising Bureau - IAB, is leading the way forward and have presented a new system for categorization of advertisements, which include more updated formats¹⁴.

¹³ The first banners employed on the WWW were often one colored with just a simple text with the brand name on.

¹⁴ The IAB is working to "...familiarize publishers, marketers, and agencies with Interactive advertising standards and guidelines formulated and developed by their peers in association with the IAB. Use of these standards and guidelines directly organize the industry so as to foster an environment in which the Interactive medium is implemented with ease, thus allowing the industry to buy more and capture value." (IAB Standards and Guidelines 2004).

The Interactive Advertising Bureau have developed general standards, classifying advertisements into two broad categories, the “In-page” advertisements and the “Out-of” page advertisements. An In-page advertisement is a Web advertisement presented directly on the Web page itself¹⁵. An Out-of page advertisement is an advertisement that is not presented directly on the Web page. An Out-of page advertisement could, for example, take the form of a pop-up advertisement that will appear as soon as one has clicked on a launching link or when entering a Web page or the like. Out-of page advertisements have furthermore been subcategorized into “Over the page advertisements” (pop-ups), “Between page advertisements” (transitional advertisements) and “In-stream advertisements” (Streaming video commercials, see Appendix E). The Out-of page advertisements have in common that they are advertisements presented in a separate window which is separated from the actual Web page that the user is using and visiting.

In-page advertisements can have different sizes, shapes and any property that can be presented on a Webpage. It is usually presented in conjunction with program content on the Web site and is thereby competing with the program content for the user’s attention (Chandon, Chtourou and Fortin, 2003). In-page advertisements are either static advertisements or animated advertisements. The use of static Web advertisements are declining and in Chandon’s study only 7.2 % of over 1200 advertisements studied were not animated. Their study, that measured click-through rates, indicated that animation is beneficial to advertisers since it appears to improve click-through rates. Kisielius and Sternthal (1984) found that vivid information attract user’s attention easier due to its sensory effects. On the Web this means that animation may increase the likeliness to attend to the advertisement (Zhou & Bao, 2002). Another study conducted by Lohtia, Donthu and Hershberger (2003) indicated that the animated advertisements increased the click-through frequency and the authors are strongly recommending the use of animation. In a study by Sundar and Kalyanaraman (2004) arousal and memory were studied as a function of animation speed. Sundar and Kalyanaraman’s findings are pointing in the same direction. That is, animation has an impact on measures such as arousal and recall with an increase when animation is speeded up. Their study deviates from the former studies since it is not based on click-through frequencies. Instead, their study used a physical measure, namely arousal which is measured via electrodes during the session, and also recall which is a measure often employed in advertising research. In these reported studies, recognition has not been used as a main measure, a measure that for instance Krugman is advocating when measuring advertising effects (Krugman, 1986).

An out-of-page advertisement is a group of advertisements comprising of “over-the-page” advertisements, “between-page” advertisements and “in-stream” advertisements. In-stream advertisements and between-page advertisements, on the other hand, will not be covered in this study.

¹⁵ A banner advertisement would of course belong to the category In-page ads.

An over-the-page advertisement is a category of advertisements with the characteristic that the advertisement will appear over the Web page that is being viewed by the user. The main advertisements in this category are the well-known pop-up advertisements (also called interstitials) and also the floating advertisements. Floating advertisements are advertisements that appear when one enters a Web page, and the advertisements “float” or “hover” over the page for a short period of time, typically 5-10 seconds. Depending upon the attention getting strategy chosen, the floating advertisement might be placed either in a peripheral position or in a more central position obscuring the view of the Web page (Pilot study 2). The second type of advertisements belonging to the over-the-page category is the pop-up advertisements. The characteristics of the pop-up advertisements are that they “[...] utilize a Web-browser initiated additional window to deliver an advertisement impression either directly above or below the existing browser experience”¹⁶ (IAB report, 2004).

The pop-up advertisements have two features that distinguish them from their static counterparts, namely some degree of surprise since they tend to appear from nowhere when the Web user enters a Web page or clicks on a certain hyperlink or some similar event. These features contribute to enhance the attention getting effect. The pop-up advertisement also adds motion or visual disturbance to the Web page area where it pops up. This is equivalent to the effect of animation even though the pop-up itself might not even be animated.

According to Beard (2001), the pop-under advertisement has become widely used in the industry. The reason for this is that the pop-under is a salient piece of stimulus since it appears on the screen in an unexpected manner and without the user’s consent. In doing so, it is more effective compared to traditional banner advertisements. The attention getting features of the pop-under advertisements are equally relevant for pop-up advertisements as they appear on the screen in an unexpected manner and without the user’s permission.

One of very few systematic studies on pop-up advertisements, by Diao and Sundar (2004) found that pop-up advertisements were superior in achieving ad-recall. At the same time they did not observe this effect for ad-recognition, contrary to their own hypothesis. On the other hand, they used a somewhat different methodology in comparison to this study. They used for instance heart rate in beats per minute to measure the response of the respondents. Furthermore, they relied on data that could be confounded. For example, they did not take into consideration differences in size between advertisements that were compared. Such a procedure is risking the validity of the results.

¹⁶ When presented under the existing browser it is usually called a pop-under advertisement.

Research on basic forms of animation found that moving or flashing objects could be useful in attracting attention from one area of the screen to another as a consequence of its visual distinctiveness (Cropper and Evans, 1968, Smith and Goodwin, 1971). An alarming negative finding regarding animation was that it could be “distracting”, “obtrusive”, “disruptive” and “fatiguing” (McCormick 1970, Stewart 1976). Later research has, to some extent, supported these findings stating that the effect of animation at times can be “annoying”, “irritating” and even “evil” (McGalliard 1998, Nielsen 1996, 1997, Spool et al. 1999). Hong, Thong and Tam (2004) have studied the phenomena of animation from an information systems approach and found that flash indeed is a salient feature that has the potential to capture attention. A negative aspect (from the perspective of an advertiser or a Web site publisher) is that this attention getting technique can, under certain conditions, lower users attitudes’ towards using the Web site in question (Hong, Thong and Tam, 2004).

Another problem less focused upon is the aggregate effect of attention getting techniques on the users of the World Wide Web as a whole. The more attention getting techniques used, the more mental effort that will be used to avoid advertisements, and in particular advertisements that are non-relevant from the user’s perspective. One should not simply assume that there are no counter-measures against attention getting techniques. The users’ attention system will use more resources to screen out advertisements. This could then result in what Cho and Cheon (2004) call “Banner Blindness”, which is a negative development for Web advertising in general.

Regarding the pop-up advertisement, which is one of the most attention getting advertisements, there is the possibility to close them by clicking on the small “x” in the upper right corner on the pop-up window. According to one study, a majority of Web users are closing down the pop-up window within 3 seconds (Eyetrack, 2004). Another strategy is to not close the pop-up down but rather to avoid looking at it and after about 25 seconds to click somewhere else, which will cause the pop-up to disappear (Eyetrack, 2004). The pop-up advertisements are not only becoming a victim to Web users that are clicking them away. There are other initiatives taken by organizations where the purpose is to avoid advertisements (in this case pop-ups). Software producers developing Web browsers have sometimes added functions that are screening out pop-up advertisements. In Windows XP, for instance, the pop-up suppressing function is on, in default mode. This has of course been counter balanced by new versions of pop-ups that are passing these filters.

It was indicated earlier that practitioners are in favour of animated advertisements compared to static or non-animated advertisements. The non-animated advertisements’ share of all Web placed advertisements have decreased and was about 7,2 % in 2003 when Chandon et al conducted their study. It is believed that the static advertisements are less effective as opposed to animated in-page advertisements and pop-up advertisements. The pop-up

advertisement is in fact a special case of an animated advertisement (no matter whether the content in the pop-up window is animated or not) since it “uses” motion in the area where it appears, but is different compared to its in-page counterpart as it can be moved around or clicked away. Advertisers are eager to use attention getting techniques to attract users to their advertisements yet there are risks connected with this as well. It seems that the advertiser has to walk the fine line between getting attention and evoking fury, at worst.

In summary, Web advertisements have additional features, compared to for instance print, that can be used to attract attention. These attention getting techniques brought up here is: a static advertisement – where no technique is being used, an animated advertisement – where some kind of motion picture is being used and finally pop-up – where the advertisement is being abruptly presented somewhere on the Web browser creating disturbance and motion. The purpose with these attention getting techniques is to attract the attention of the audience.

In the previous it has been discussed around the attention construct to quite some extent without going very deep into the area. Next, a deeper review of the attention construct will be done in order to gain further insight into this imperative aspect of advertising.

The concept of Attention

The concept of attention is central to advertising. In order for the consumer to perceive an advertising message she will have to distribute at least some attention to it. Otherwise the message will go by unnoticed; an unwished event by most advertisers. Therefore, attention is important for advertisers and their aim is that the audience attends to the commercial messages that they are communicating. Thus, advertisers commonly use attention getting techniques such as animation, pop-up, flash or other means in order to attract attention. With this said it is appropriate to examine further what attention is and how attention can be related to advertising.

What is attention? And how is attention defined and described? William James once wrote:

“Everyone knows what attention is. It is the taking possession of the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalization, concentration, of consciousness are of its essence.” (William James, 1890, pp. 403 – 404 in Eysenck and Keane, 2000).

James description of attention is a rather early one nevertheless like others of more recent date he is pointing at selection as a core feature and also at the bringing into consciousness. Mack and Rock (1998, p. 25) are defining attention as a “process that brings a stimulus into consciousness. It is in other words, the process that permits us to notice something.” This view and description of

attention is the one used further in this study and is also in line with the notion that has been expressed when discussing the advertising models previously. A stimulus can for instance be an advertisement or any other event that can be brought into consciousness. The fact that Mack and Rock are stating “the process that permits us to notice something” implicates that a reduction of the process of attention will at the same time also reduce what is being noticed and brought into consciousness.

The major conclusion of Mack and Rock’s very extensive research in the area of attention is that there is no perception without attention. Perception in turn is the means “by which information acquired via the sense organs is transformed into experiences of objects, events, sounds, tastes etc” (I. Roth 1986 in Eysenck and Keane, 2000). In order for information to enter the internal system of a subject this individual will first have to distribute attention to the information so that it can be perceived and thereby be further processed. From an advertising perspective this would clearly mean that subjects ought to attend to an advertisement, at least at some minimal level, if we are to expect them to be able to recognize an advertisement or product at a later stage. Consequently, we have to capture the audience attention so that they can perceive what we are communicating. However, what means do we use to capture the audience’ attention?

Earlier in this chapter it was highlighted that advertising researchers have found that advertisement properties such as picture and headline are said to capture attention. The pictorial in particular seemed to be an important means in attracting attention and Kroeber-Riel’s study indicated that subjects actually tried to avoid the text part in favor for the picture part. It was also discussed that size had been reported to have a positive correlation with the capture of attention. Furthermore, motion, flicker and flash have also been identified as properties that can capture a subject’s attention. The properties of objects that can capture attention have been studied extensively within the theoretical realm of visual search.

In the area of visual search quite some research has been conducted in regards to investigate what a basic feature is and how humans are performing visual search tasks. A stimulus that supports both effortless texture segmentation and efficient search is usually perceived as being a basic feature. Effortless texture segmentation can, for instance, be described as when a region of green spots in a field of red spots is instantly segmented from the background or when spots at one stereoscopic depth among spots at another stereoscopic depth are immediately identified (Wolfe, 1999). Efficient search, on the other hand, is when an increase in set size (set size is the number of distracting objects in a visual search task) does not produce an increase in reaction time.

When looking closer at the various stimuli and their properties it can be observed that color is a typical example of a basic feature and is one of the best ways to make a stimulus “pop out” (Bundesen & Pedersen, 1983).

Generally, a greater difference between colors will make it easier to discriminate between targets and distracters (Nagy and Sanchez, 1990). Orientation is another basic feature and refers to, for instance, the orientation of multiple lines, where one line deviates in orientation from the other lines (Foster and Ward, 1991a). Curvature and vernier offsets are also considered as basic properties and refer to a curve among straight lines and a broken line among straight lines respectively (Treisman and Gormican, 1988; Levi et al., 1985). Size, is yet another basic feature that has been extensively studied in various ways and shown to possess the properties to be easily identified (Bilsky, Wolfe and Friedman-Hill, 1994). Motion, is an uncontroversial basic feature as it is easy to find a moving stimulus among static ones whereas the opposite, to find a static among moving spots, is more difficult (Dick, Ullman and Sagi, 1987). Other basic features are depth and gloss since both produce efficient search times (Enns and Rensink, 1991; Nakayama and Silverman, 1986; Wolfe and Franzel, 1988).

These basic features can be used to guide the subsequent deployment of attention (Pashler, 1998). The deployment of attention can in turn be stimulus driven (also called bottom-up) or user driven (top-down). Stimulus driven, means basically, that the external target is sufficiently different from its distracters so that the stimuli “pops-out”. User driven, means, that we deploy the attention to a stimuli that we have decided being worthy of our attention (Pashler, 1998). Information from top-down and bottom up analysis of stimuli is used for attentional prioritization where attention will be directed to the item with highest priority (Wolfe, 1994). Braun has studied the bottom-up and top-down distinction by designing an experiment with a demanding task at fixation to see what attributes of a peripheral stimulus could be identified. Many of the basic features described above could withstand this test (Braun 1993; Braun 1994; Braun and Sagi, 1990). This is taken as evidence that attention can be seen as active for the central task while it is passive for any peripheral task (Braun and Julesz, 1994). It could also be argued that this means that pre-attentive processing continues across the visual field while attention is busy somewhere else (Wolfe, 1998).

The basic features have also been of interest in regards to attention capture and the properties that attract attention have been under scrutiny in experimental psychology and debated elaborately (see for instance Yantis, 1993 a & b, Yantis and Jonides, 1996, Gibson, 1996, Turatto, Galfano, Gardini and Mascetti 2004, Franconeri, Hollingworth and Simons, 2005). The perspective has been somewhat different and much of the interest has been directed at understanding basic properties and their influence on attention. Some of these basic features that have been studied are color, numerosity, motion, flicker, shape, location and texture segregation (Mack and Rock, 1998). An early notion was that some of these properties were pre-attentive, perceived without attention, but was reinterpreted to mean that “numerosity, location, color and motion were properties that could capture attention” (Mack and Rock, 1998, p. 14). However, later research with more sophisticated methods, under an

inattentional paradigm, showed that not even these properties were able to capture attention. Instead, Mack and Rock argued that among a long array of features it seemed as meaningfulness and size were the properties that could capture attention. Other researchers in the area like Yantis (1993a) and Yantis and Jonides (1996), have argued that what is really capturing attention is the appearance of a new visual object in the visual field. What is already in the visual field will be part of the stable visual setting and only new visual objects will have the capacity to capture attention. Yantis and Jonides are however stating that abrupt visual onsets may not be unique in capturing attention.

When studying the experimental research done in psychology, it is important to remember that the experiments are conducted with visual searches for stimuli with basic features. Yet, in the real world most people are rarely looking for a “T” among “X’s” or a “red dot” among “orange dots”. Moreover, we also have to keep in mind that these studies that have been referred to often use very short duration times of the stimulus presentation. Typical duration times are well below 1000 milliseconds. Despite this obvious dissimilarity between how attention capture is described and studied in experimental psychology, it is of importance to have an understanding of the basic features that are considered to have the power to capture attention. Remarkable, typical properties that are believed to capture attention, such as motion, flicker or color were not found (for instance in Mack and Rock’s work) to attract attention at a 200 millisecond exposure. Instead, size together with meaningfulness was found to be decisive.

Meaningfulness was for instance measured in an experiment where the respondents’ names were exposed and compared to other names. A particularly surprising finding was that subjects did not observe a “word”, presented for 200 milliseconds, almost indistinguishable from their own name; i.e. if a person’s name was Jack and it was changed into Jeck then the subjects were largely blind to the stimulus. This strongly indicates that a stimuli with a high level of meaning has the capacity to break through and capture attention (Mack and Rock, 1998).

On the other hand, one should have a somewhat flexible view when considering these results since a typical advertising exposure can last for much longer than 200 milliseconds. It is not uncommon that an advertising exposure will last for minutes and under these circumstances properties such as motion, flicker and color may have a different impression on subjects. Presumably, because a longer time period will significantly increase the chance a person distributes some degree of attention to a certain area. That is, the area where the advertisement is presented. In addition, interesting in this context is the fact that Mack, in Mack & Rock’s study of approximately 5000 respondents, never found any gender differences. The belief is that if the critical stimulus is equally salient and meaningful for women as for men, attention capture will be equal for women and men.

Following is a discussion into the area of how attention works when screening the world around us. It will be explored how attention works when conducting everyday tasks, such as reading some news on a Website while being exposed to an advertising message.

How the attention system operates

The world around us fills our senses with information, but only a small fraction of it is relevant to our goal-driven thought and behavior (Milliken and Tipper 1998, p. 191). As a consequence, we have to process information selectively since we otherwise would be overloaded with inputs. An intelligent behavior demands selectivity and that we direct our attention to certain targets that sometimes are external objects and at other times internal thoughts. This selectivity appears to be an enhancement of processing of relevant information and seem to dominate our mental activity (Milliken and Tipper, 1998).

In recent years, consensus seems to have been reached that inhibitory processes play a vital role in selective attention. Broadbent's (1958) filter theory, Walley & Weiden's concept of lateral inhibition (1973) and Moran & Desimone's (1985) single cell recordings share the view that a crucial function of the attention system is to prevent central mechanisms from interference and overload due to irrelevant input (Milliken & Tipper, 1998 p. 195). This means that the processing of unattended information is impeded and conversely that the processing of attended information is enhanced.

Mack & Rock (1998) have also studied the phenomena of inhibition in detail. As has been discussed earlier, in order to achieve a deeper processing of information to take place, the subject ought to attend to an object. Merely looking at an object does not guarantee the fact that the subject is attending to it. As a matter of fact, they found that inhibition has the potential to be the greatest for stimuli presented at fixation. They are also stating that since evidence of inattention blindness¹⁷ is greater at fixation, "attention can actively be inhibited from operating on input from some particular spatial location, and this was confirmed in a series of experiments".

¹⁷ A related phenomena that Mack & Rock were studying at the time. Subjects failed to detect a suprathreshold stimulus presented at fovea and this phenomena was named inattention blindness.

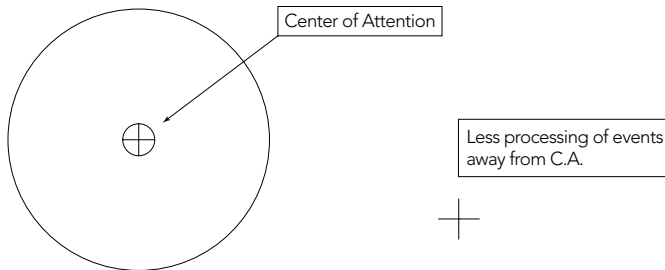


Figure 2.11 When attention is directed to the cross within the circle then mental effort and processing will be impeded outside of this area. Less focus will be directed to events that are taking place for instance at the vertical line on the right of the circle.

Not only can attention be inhibited, Milliken and Tipper (1998) argue that attention can be used to generate expectation, to concentrate on ongoing processing demands of a primary task or used to direct behavior selectively toward an event among competing events. Still, trying to perform too many tasks at once in a certain task environment will have a negative impact on how these tasks are being performed. The best performance is achieved when the tasks are done one at the time. Attention researchers are often studying this kind of phenomena by presenting a primary task to the subjects to solve and then measuring the performance on a secondary task that overlaps temporally with the primary task (Milliken and Tipper, 1998). Of interest is to study to what extent the response to the secondary task suffers (Pashler, 1984). Kahneman (1973) states that attention refers to the mental effort or cognitive capacity allocated to a task. In this case a limited pool of resources is used by cognitive processes to perform tasks. The more demanding a task, the more cognitive resources is needed for the task. Therefore, performance of a secondary task will be constrained by the resources needed for the primary task.

Another view of the phenomenon is that inefficient performance in dual-task situations is due to an attentional bottleneck that is inherently serial in nature (Milliken & Tipper, 1998). The poor performance on a secondary task would thereby be explained by the fact that the primary task is blocking the serial stage (the bottleneck) forcing the secondary task to be delayed. This kind of explanation would suggest that individuals are not quite capable of diverting mental capacity to two or more tasks at the same time. Instead, it is in fact a matter of sequential processing.

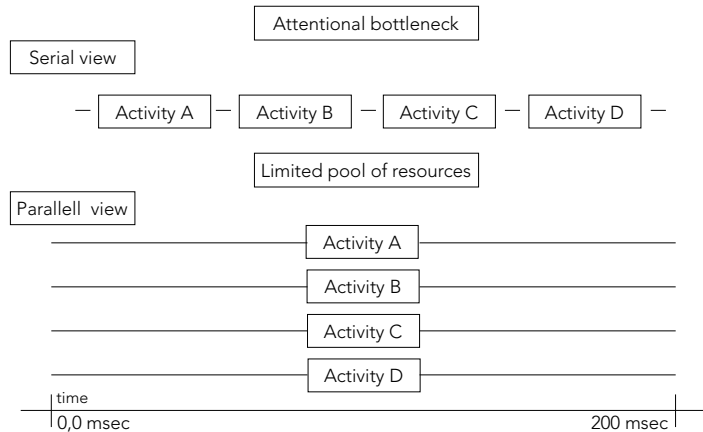


Figure 2.12 The limited pool and attentional bottleneck concepts contrasted. Note that this is just a schematic view to describe the different perspectives.

Common for the limited pool and attentional bottleneck view is that a certain task environment may constitute of a primary task, setting the stage for any other task in that environment. A secondary task will be affected by the demand structure of the primary task in such a way that a more demanding primary task will reduce performance on the secondary problem and other events calling for attention.

Many researchers (see for instance Broadbent, 1958, Deutsch & Deutsch, 1963, Treisman, 1964, Walley & Weiden, 1973, Kahneman, 1973, Moran & Desimone, 1985) have modeled attention elaborately. Among these theories on attention Treisman's model seem to be more appreciated and adequate as opposed to other models (Johnston & Heinz, 1978). Treisman's view on attention is that there is a sensory register that allows stimulus input to pass, an attenuator that reduces or attenuates processing of information outside focal attention. As a result, there is a limited amount of information that can reach short-term memory where information is stored temporarily and used for different mental processes (Treisman, 1960, Eysenck and Keane, 2000). The components of Treisman's attenuation theory are sketched in figure 2.13 below.

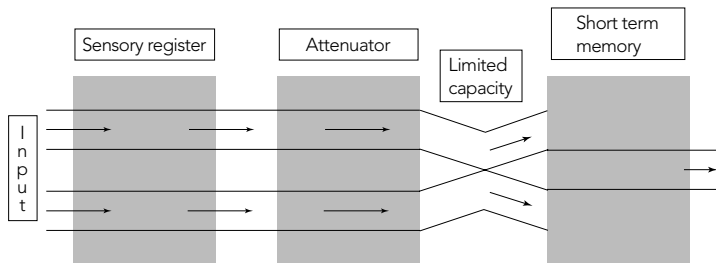


Figure 2.13 Treisman's Attenuation theory. (Eysenck and Keane, 2000)

Treisman's model is different from Broadbent's selective 'filter' model. Broadbent's idea was that non-attended input was mechanically screened out (Eysenck and Keane, 2000), which was shown to be incorrect by Treisman (1960). The point with Treisman's notion is that there is some kind of a barrier that is allowing attended input to pass through whereas non-attended input is attenuated.

In her article from 1960 Treisman refers to, as mentioned above, an 'attenuating' mechanism. In her view this mechanism may significantly reduce the incoming input, but not necessarily block information in the same way as in Broadbent's filter (Treisman, 1964, 1960). In a more recent work, Pashler refers to the filter or attenuator (if using Broadbent and Treisman's terms) as a "filtering mechanism" (1998). This term, "filtering mechanism", will be used in the following since it is straightforward.

From an advertising model perspective it is adequate to state that the model in the figure above is opening up the box of attention and giving an elaborate description of how incoming stimuli is being processed. This kind of detailed explanation and modeling infused into an advertising frame can provide greater insights and understanding about how attention operates in advertising.

In addition to the descriptions of attention that has been presented, it is also important to consider the different impact of intentional and unintentional attention to an advertisement. From an advertising point of view the best case is, most often, when the individual is intentionally distributing attention to the advertising message. In that case, the individual will have time to read, see and comprehend the entire message communicated. There are of course different levels of intentional attention. One individual may explicitly direct the attention to the advertisement and study it in detail, whereas another individual may briefly, and intentionally, glance at it. In the case of intentional attention, the advertisement is in the center of attention and not a peripheral object. This means that there is a much greater chance for processing the advertising message.

Unfortunately for advertisers, this type of intentional and high level of attention to a message is rarer and increasingly less common in advertising. Instead, the majority of encounters with advertising are brief exposures (Krugman, 1986). These exposures may be unintentional and the individual may not even be aware of the fact that she has seen or perhaps even deny having seen (Krugman, 2000). Brief or involuntary exposures can take place, for instance, when screening a page with a number of advertisements placed together with program content. In this screening process, the individual is trying to localize where the program content is in order to direct focal attention to this area. When engaged in this screening the individual will, simultaneously, be exposed to advertising content when the gaze is wandering over the surface to be screened. In relation to the phenomena of brief exposures Krugman is stating that;

“Thus, to some small but measurable degree, one must note, perceive, or identify what one will not attend to in order to reject it. I suggest that this “pre-attentive process” leaves some trace of the rejected material, certainly not enough to be recalled, but perhaps enough, with repetition of the process and repeated rejections, to be recognized later on.” (Krugman, 2000, p. 53)

From this quotation there are two points that can be made. First, not attending to or avoiding, through rejection, an advertising message will generate an effect. Secondly, to measure this effect the researcher ought to use an observation method that is sensitive enough to capture this effect, i.e. recognition. In Krugman’s argumentation on this issue he is also pointing at that it only takes a very short look to effectively convey the advertising message (Krugman, 2000). As a consequence, the unintentional attention will generate an advertising effect through brief or partial exposures (Krugman, 1986).

Janiszewski is arguing in the same way by stating that pre-attentive mere exposures can encourage an individual to have more favorable attitudes even though she cannot recall the initial exposure (Janiszewski, 1993). According to Janiszewski the pre-attentive mere exposures belong to the category of incidental exposures. This is synonymous to the unintentional exposures that have been discussed. The pre-attentive processing of information can be seen as a parallel processing system that is parsing the environment into units that are meaningful, selecting adequate subgroups of units to receive additional attention (Janiszewski, 1993). Wolfe (1998) is describing pre-attentive information as something that is there to be used and in particular, that pre-attentive processing can be used for the subsequent deployment of attention. The pre-attentive information could therefore be considered as a basic processing of the environment which takes place prior to attending to a particular area.

Transferring this discussion into an advertising context would mean that the entire setting is pre-attentively processed at a basic level. This pre-attentive

processing includes advertising present in the setting. The individual thereafter selects an area where to deploy the attention, for example the headline of an interesting article in the program content. When brand names and product offers (in the shape of advertising) are included in the secondary information in an environment, they are processed in a pre-attentive manner (Janiszewski, 1993).

Extending Treisman's, Kahneman's, Mack and Rock's, Krugman's and others' notions of attention to an advertising context gives a richer theoretical picture of the scene presented in the starting point model in figure 2.3. The context or media where an advertisement is presented can be seen as a task environment where the primary task is the program content transmitted to the receiver. The receiver is most often interested in the program content and is intentionally directing her attention to this material. There will also be other events, – tasks –, calling for the attention of a subject. Advertising can clearly be seen as one of these tasks that the subject can either attend to or inhibit. Attending to stimuli means more processing of the information whereas inhibition means limited processing of the same stimuli. The individual can also attend to the advertisement/s, which is becoming increasingly less common. Yet, even when the individual is not explicitly attending to an advertisement, brief, partial or mere exposures can have an impact. These unintentional exposures are also important and are making up the bulk of advertising exposure as Krugman states (1986).

Advertising, Attention and Media

A number of media, for instance TV and Radio, that are routinely being used for information transfer of advertising messages are most often being used in such a manner where the program content is interrupted (a break for advertising) and then the advertising messages are being sent. In this case the message stream is serial in nature¹⁸. In other media such as newspapers, magazines or the World Wide Web, advertising messages are being presented in connection to the program content. To the viewer or reader, the program content present is calling for the attention of the subject. At the same time, the advertising material is competing with the program content for the attention of the subject. In the latter case, but not in the former, stimuli are presented in a parallel way. This constitutes a setting very much similar to the one in figure 2.3. By describing the setting in this way a task environment has been defined from an attentional point of view comprising of the media, its program content and the advertisement, see figure 2.14.

¹⁸ There are however also situations where there are advertisements or logos present within the program content, for instance when it comes to football games, ice hockey or the like.

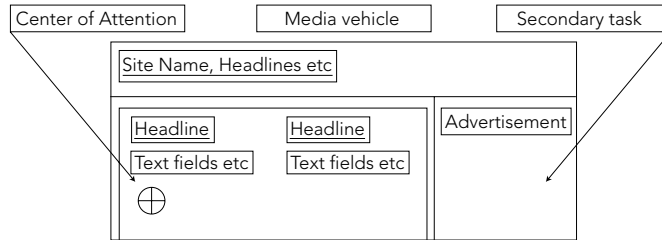


Figure 2.14 Viewing the media as a task environment with a primary and a secondary task.

Part of the complete task environment and also valuable to take into consideration is the user activity mode or task mode of the subject being exposed to the stimuli. As mentioned before, attention can be either externally or internally driven. The task environment described in figure 2.14 comprises mostly¹⁹ of the external task environment. However, a second ingredient, the internally driven aspects have to be considered as well. A user's activity mode can be set by the mood, time of the day, etc (see for instance Belk 1975) or an intention (Milliken & Tipper, 1998). An intention to solve a given task in a particular way is thereby also part of the task environment and sets the subject in a certain mode when interacting with the media vehicle.

When visiting a Web site (a task environment) a person may be in different modes (just as one reader is reading 'The Times' to educate herself, another one is reading it to kill time and a third is searching for a specific information to quote) and different modes in turn affects the perception of presented stimuli in different ways. The mode a certain Web surfer is in, is dependent on what intention the user has. The user mode can also be altered or triggered by the functions or tasks that the subject encounters on the Web site or as a consequence of the way information is presented. A less goal directed mode might be to just surf around without any specific goal, perhaps solely for fun and pleasure, allowing the subject to wander from one place to the other in the media. It is plausible to assume that a user activity mode of this latter kind would make it more likely that attention, to a greater extent also will be directed to the secondary task. In other words; a user activity mode that is highly focused on the primary task, may direct less attention to the secondary task. A user activity mode, which does not require such a focus on the primary task, may open up for more attention to the secondary task.

¹⁹ An external environment can however evoke a certain, internally driven, mode.

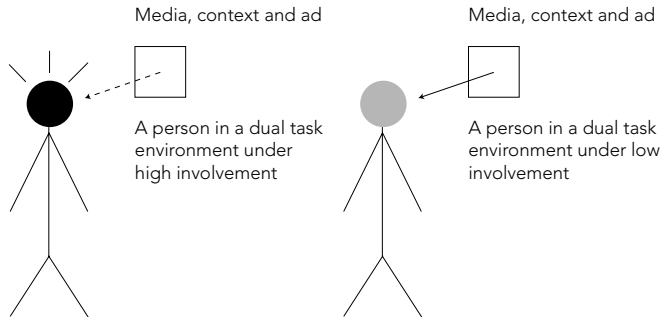


Figure 2.15 Influence on advertising effect as a consequence of different user activity modes. The user is engaged in activities connected to the web page.

Janiszewski (1998) has studied differences in goal-directed search tasks and exploratory search tasks. He notes that goal-directed search is a process involving selective attention and that the “demands of the search task, organization of the information in the search environment, and the task-relevant experiences of the searcher determine the ease/difficulty of the search activity” (Janiszewski, 1998, p. 291). In addition, he is stating that exploratory search routines are used to “monitor the environment when a person is not actively searching for a piece of information” (Janiszewski, 1998, p. 291). Moreover, it can be a screening process on the look out for targets that can be subjected to goal directed search. In this screening process, the exploratory search have procedures to evaluate to what extent attention will be directed to a certain location in the field of view before going to another location.

Janiszewski’s view has characteristics that are similar to the view that Web users are either activated in a mode where they are actively looking or searching for some piece of information or just screening, surfing, the Web environment to see whether there is something appealing that they can direct their attention to. Sheehan (2002) has in his typology of Internet users, described users in the same way as here. Sheehan argues that there are Web users that have “a specific goal in mind; for example, an online session spent searching for specific information...” (Sheehan, 2002, p. 63) and also that there are users that “use the Internet for diversion, escape, and/or relaxation”(Sheehan, 2002, p. 63). The first case quoted above coincides with the search concept whereas the second case quoted coincides with the surf concept. Sheehan is developing the typology and describes even more refined categories that will not be further developed in this study.

Other researchers have identified similar categories as those discussed above and common to them is that they have searching and surfing as broad categories in one way or the other (Korgaonkar and Wolin, 1999, Rodgers and Sheldon, 1999, Stafford and Stafford, 2001). Taken together, this reinforces the argumentation that searching and surfing indeed can be seen as broad and

separated behaviours exhibited by users when using the World Wide Web. Worth to note is that in general there is interplay between the external task environment and what activity mode the user will be set to. When visiting a search engine it is more probable that one is in a search mode. When visiting a Web site for general entertainment, on the other hand, it is plausible to assume that the visitors to a greater extent are surfing around for amusement, enjoyment, entertainment or the like. Multi-mode environments are naturally also possible and common, as well as environments used for other purposes.

Measuring Advertising - Click-through and Pricing

Before ending the chapter we will study how Web advertising is measured and how it is being priced. The various advertising means, mentioned earlier, have different purposes as well as effects. The old Web banners, for instance, that recently were much appreciated among Web advertisers had the purpose to generate click-through and bring the user to a target Web site. These kind of Web banners have witnessed click-through rates drop the last few years reaching frequencies below 0.1 % (Kharmouch and Lowry 2001). Despite this, click-through rates have been and still are widely used as the main measurement of the effect of Web advertising.

While the focus on click-through banner advertisements may not disappear, it is likely that advertisements, including animation and video, will be used to a greater extent in a near future to come (Weaver, 2000). This is in fact already taking place. In one of the pilot studies conducted, findings suggest that static banner advertisements are being replaced with more vivid banners on Web sites. Furthermore, since fewer users are actually clicking on the banners, the promotional content has to be presented straight on the host page as an advertisement and not on the page where the hyperlink leads to. Consequently, the decreasing click through rates and other developments,²⁰ have driven the industry to develop advertisements that are more similar to what is being used in print media. There is also empirical evidence suggesting that click-through measures are likely to undervalue the Web as an advertising medium (Briggs and Hollis, 1997). Furthermore, the Interactive Advertising Bureau (Interactive Advertising Bureau, 1997) found that the use of simple involuntary exposure to a banner advertisement without click-through generates an increase in advertisement awareness. There are therefore reasons to believe that there is indeed an effect of advertising beyond the click. At the same time, click-through frequency has been, and still is, widely used as a method for pricing in Web advertising.

The click-through measure has been a starting point for the development of the pay per click method (PPC). Except for the pay per click method there are also other pricing methods such as pay per view (PPV) or pay per time

²⁰ And also due to technological development such as greater bandwidth, new methods of delivering digital content and the like.

unit (PPTU). Pay per time unit is in essence an agreement between the Web publisher²¹ and the advertiser to use a certain space during a certain time. This might for instance connote that the advertiser buys the upper right corner of a Web site for a period of one month or any other time period. Pay per time unit can also be a package of different locations on the Web site during a predefined time period, where some of the locations are prominent and others being less salient.

Pay per view or sometimes called “CPM” (Cost per thousand, Hoffman & Novak, 2000) is a pricing method based on impressions or exposures (Mangani, 2003). In the same way as with conventional broadcast and print advertising the pay per view method is taking into account “[...] the amount of advertising delivered” (Hoffman & Novak, p. 180, 2000). The “amount of advertising delivered” is sometimes used for broadcast as well meaning that the advertiser buys airtime at a certain time when a certain number of individuals are supposed to be reached. The “delivered amount” is however a more accurate measure in the Web case compared to broadcast. An example can reveal the difference. If an advertiser buys airtime the publisher will ask a certain price that depends on for instance the duration of the commercial, the time of the day and whether the spot is to be aired in connection with a certain program or the like. After taking these aspects into consideration the publisher will calculate and present a final price.²² This price will on the other hand not (usually) take into consideration whether it has only been 13.8 million individuals that watched the show and the subsequent commercial instead of the expected 15.8 millions that normally watches the show. The pay per view pricing method on the other hand is taking each and every visitor into account since the pay per view measure, like the pay per click, is with a high degree of precision counting every exposure. There are not only “pure” pricing methods like those described here but also hybrids that combine different aspects to suit the needs of clients, publishers or both.

Using the pay per click method as a means for pricing does not appear to be the most rational choice when the click-through frequency measure has an additional communication effect as measured by, for instance, recognition or recall, that is not accounted for by the pay per click method. This has the inherent consequence that those buying advertising space on Websites are receiving a service at constant discount, a discount that we do not know the magnitude of. From a Web publishers’ perspective this is a state that ought to be rectified. It is, however, perchance explicable that there may be a widespread malpractice in pricing matters considering that research in the area has not been able to keep even pace with the development. Hence, practitioners have been left to finding their own way.

²¹ From the perspective of those selling advertising space or the like.

²² There may also be other factors taken into consideration such as first time discount, bulk discount, repetition and the like.

In this framework it is worth to mention that for example the search engine industry is using the pay per click pricing method to a larger degree. The industry is also increasingly successful in their endeavor to generate revenue. In the case of the search engine industry the pay per click method is tied to the number of clicks on keywords or Adwords that are presented as search results.

In connection to the issue on what pricing methods are relevant to use, it is appropriate to also include how advertising is being measured and how it has been measured historically. Click-through has never before (before the World Wide Web came in to being) been a means to measure advertising effect. To measure clicks was a possibility that came along with the inherent properties of the information technology used for the World Wide Web. The click measure was first and foremost a means to register activity on a Web site. When using links connecting a banner to a target Web site it became possible to measure how many users that clicked on the banner and were redirected to the target site. Soon it became a widespread practice to count the number of clicks as a measure of advertising effect. However, the perhaps most prominent researcher in the area of how to measure advertising is advocating other means than the click. Krugman has elaborately studied the use of recognition and recall as measures of advertising effectiveness. He is suggesting that recall and recognition are actually measuring two different things. Recall, which is when an individual is being asked if she can recall seeing an advertisement in a certain media and tell what brand name it was, is part of measuring verbal memory. Memory for words is though relatively low with a high level of forgetting (Krugman, 1985). Recognition on the other hand is measuring pictorial memory. When measuring recognition, an individual who has been exposed to an advertisement (the target ad) is presented with a number of irrelevant or phony advertisements of which one is the target ad. The main purpose is to see if the subject recognizes the target advertisement. This, is an “easier task” as opposed to when testing recall since right-hemisphere memory for pictures and images is exceptionally high with very little forgetting (Krugman, 1986, Krugman 1985).

Even though both recall and recognition can be used for measuring advertising, Krugman is most of all arguing in favor of recognition as the main measure. Krugman is stating:

“Advertising researchers have argued about the relative merits of using recognition or recall as measures of advertising effect. Because the criterion of recognition is much more easily achieved than that of recall, it has been criticized as being less sensitive. Underlying this “technical” controversy, however, is the fact that the use of recognition justifies modest advertising expenditures. I would reposition the recognition versus recall problem with this proposed addition to the theory of involvement – i.e., the nature of effective impact of communication or advertising on low-involvement topics, objects, or products consists of the building or strengthening of picture-image memory potential. Such potential is properly measured by recognition, not by recall. The use of recall obscures or hides already existing impact.” (Krugman, 2000, p. 53)

When using the click-through to measure advertising effect neither recall nor recognition is measured; only those who have clicked are accounted for. This may severely underrate the effect of an advertisement. Consequently, when a publisher uses click-through as a basis for pricing, the entire advertising message delivery will not be taken into account. A more sensitive measure ought to be used, i.e. recognition. It is therefore the pay per view method that is argued for at the expense of pay per click method. The pay per view method is closer related to actual exposures and to measure recognition is an appropriate way to measure exposures.

Since the industry is frequently using the click-through measure, it is pressing to make known that there may be more adequate means when advertising effect is to be measured. It is always good to remember that “The practice of evaluating Web advertising on the basis of click-through is like evaluating TV-ads for automobiles on the basis of how many people visit the showroom the next day” (Briggs and Hollis, 1997, p. 33).

This chapter

This chapter set off by identifying the origin of advertising with the broader concept of marketing communication and marketing in general. Afterwards, it was elaborated around the essence of advertising and how advertising has developed into the World Wide Web.

A number of issues that has bearing on the research questions that were formulated in the introduction chapter have been covered, placing attention to advertising on the World Wide Web into a theoretical context. Theories from disciplines other than advertising have been brought in to the theoretical framework to complement and develop the knowledge at hand. In the next chapter the different parts of the framework will be integrated in order to formulate relevant hypotheses taking as a starting point the research questions.

Chapter Three

Formulating Hypotheses

With the research problems as a starting point and the theoretical chapter as a guiding tool, parts of the theory that are relevant will be integrated and used for the formulation of the hypotheses for this study.

First section - Attention effects of context

In the theoretical chapter it has been elaborated on how the setting or the context in which the advertising resides can influence the impact of advertising. It is important to study this contextual dimension to understand how it affects advertising and whether it is powerful or can be neglected. Extending Kahneman, Janiszewski, Milliken, Tipper and Treisman's theories of attention to a advertising context may provide insight to how attention is affected by context and activity mode. In the theory section, the Web environment was described as a task environment where the primary task is the program content transmitted to the receiver. The secondary task in this context is then the advertisement. Furthermore, a secondary task will be affected by the demand structure of the primary task in such a way that a more demanding primary task will reduce performance on the secondary task and all other events calling for attention. Therefore;

H1: A situation where respondents are exhibiting a less goal oriented surfing behavior will elicit more attention to an advertisement than what a more goal oriented surfing behavior will.

To be rejected...

[H0H1 A situation where respondents are exhibiting a less goal oriented surfing behavior will elicit equal or less attention to an advertisement than what a more goal oriented surfing behavior will.]

If H1 is correct, we can conclude that individuals set to search mode, pay less attention to an advertisement than what a respondent in a surf mode does.

Another contextual dimension that has been elaborated on is the physical appearance of the environment where an advertisement is presented. This physical environment that was described as a task environment may also influence advertising. One aspect of this task environment is its inherent complexity which can be manifested in a number of ways. One such way is the complexity of the search system on a Web site and the search depth that it has. Given what has been learned in the theory it is plausible to state that; as complexity increases, the demand on the primary task will increase and thereby reducing the attention to the secondary task. Hence:

H2: A Web environment that is less complex, with regard to its search depth, will elicit more attention to an advertisement than what a more complex Web environment does.

To be rejected...

[H0H2: A Web environment that is less complex, with regard to its search depth, will elicit equal or less attention to an advertisement than what a more complex Web environment does]

If hypothesis H1 and H2 will be supported then there is reason to consider an alteration of the advertising models displayed in the theoretical chapter. If H1 and H2 are correct then the models studied can be elaborated. More specifically, the attention construct should be described more in detail taking into account what is happening between the advertisement, context, attention getting etc and the attention construct. What is lacking in the models is a more elaborate description of the attention construct. If Thorson's models are taken as an example to compare with, it can be said that what is lacking is an environment or setting construct that takes into account the environment's effect on an individual's attention. There is also a lack of a construct that can impede the incoming stimuli.

These issues that have been pointed at in the previous paragraph will be further addressed under the section "Modeling attention to advertising".

Second section - Advertisements and their respective attention effect

In the previous chapter it was argued around different attention getting techniques and that one and the same advertisement using different attention getting may receive different amounts of attention from individuals. Chandon's study indicated that animation gave a greater response measured as click-through frequency compared to non-animated advertisements. He also recognized that many advertisers had stopped using non-animated advertisements. Lohtia, Donthu and Hershberger received results that pointed in the same direction and they strongly recommended the use of animation as a means to attract attention to the advertisement. Sundar and Kalyanaraman's findings were also in favor of animation. Common for the studies above is that none of them used recognition or even recall when measuring results, instead they used click-through frequency as a measure.

In the attention section a number of features were shown to have the ability to attract attention. Mack and Rock had studied how color, numerosity, motion, flicker, shape, location and texture segregation were performing when attracting attention. After a great number of experiments Mack and Rock concluded that properties such as meaningfulness and size indeed could attract attention. Yantis and Yantis & Jonides were arguing that in particular new objects presented in the visual field had the capability to attract attention. These studies referred to here were studying the phenomena of attracting attention on a very basic level where these basic features were studied. In advertising these basic features are put together on a greater scale and the exposure times are much longer. It is therefore important to understand how attention getting works on a "macro" level.

An animated advertisement is actually using some of the basic features that our experimental psychologists have studied in attention experiments. An animated advertisement will by nature have the possibility to present new objects in the visual field since the animation itself is not stationary. It also has motion or flicker since animation is adding motion to an object that otherwise would be static.

Taken together it seems plausible that animation will evoke greater attention than what a non-animated advertisement will. Hence:

H3: An animated advertisement will elicit more attention than a static advertisement.

To be rejected...

[H0H3: An animated advertisement will elicit equal or less attention than a static advertisement]

As was stated already in the theoretical framework, a pop-up advertisement is merely a special case of an animated advertisement from a visual perspective. When the pop-up advertisement appears in a certain location it creates “motion” where it appears. This could be seen as an “abrupt onset” as Yantis described it theoretically, since the pop-up appears in an empty area (sometimes also in other areas than empty areas). Cropper & Evans and Smith & Goodwin found in their study support for animation as a means to attract attention from one area of the screen to another area because of the “visual distinctiveness”.

Relevant in the case of pop-up advertisements, since it can be perceived as a special case of an animated advertisement, is of course all the arguments presented in favour of animation in hypothesis 3. With this said:

H4: A pop-up (traditional pop-up, over-the-page) advertisement will elicit more attention than a static advertisement.

To be rejected...

[H0H4: A pop-up (traditional over-the-page pop-up) advertisement will elicit equal or less attention than a static advertisement.]

It is also expected that that a pop-up advertisement will elicit more attention than an advertisement that is just animated. The reason for this is that the pop-up advertisement is not only animated but also that it appears in an empty area creating extra “motion” in the area where it appears compared to its animated counterpart that is just animated and staying in the same area the whole time. It is expected to be easier to inhibit the animated advertisement than what it is inhibiting a pop-up advertisement that is unexpectedly popping-up in the viewers’ visual field. Therefore:

H5: A pop-up advertisement will elicit more attention than an animated advertisement.

To be rejected...

[H0H5: A pop-up advertisement will elicit equal or less attention than an animated advertisement]

The Second Section Extended

During pre-analysis of hypothesis 5 that was conducted during the data collection, a few interesting ideas surfaced that ultimately lead to extend the study somewhat. This part was mostly driven by a few theorems that originated from Yantis, Jonides, Mack and Rock.

When analyzing hypothesis 5 it seemed obvious that the pop-up advertisement would be more effective than the animated advertisement, and so it was. And the result would clearly follow Yantis and Jonides idea that a new element in the visual field would attract more attention. However, before jumping to premature conclusions there was though, one additional aspect that could be taken into consideration, namely the frame. The frame of a pop-up advertisement is an additional element to consider which was not considered in isolation initially, since previous studies have not taken this into account. The frame on the pop-up advertisements that were used in the treatments added 50 pixels on the height and 25 pixels on the breadth. This means that the pop-up advertisement in fact comes with a frame that makes it 21 075 pixels or 29.2% larger than the animated advertisement. At the same time we have to remember that it is not the advertisement itself that is larger, they are of the same size, however the difference is just in the frame.

The difference in effect that was observed in both the pre-analysis and the final analysis of hypothesis 5 may (or may not) originate from the frame around the advertisement in the pop-up and not because of the “abrupt presentation” of the advertisement. It could of course be that there is an effect from both of these factors – the abrupt presentation and the frame.

These ideas were considered of such an importance that a 6th hypothesis was formulated based on the reasoning in the two paragraphs above. In order to study the effects of the frame separately, a new set of experiments had to be designed and conducted. This hypothesis demanded the study to be extended with 292 more respondents and the hypothesis is an extension complementing the original hypotheses. It complements the 5th hypothesis in such a way that we may obtain an answer to the “frame effect versus the abrupt presentation effect controversy”.

What we will in fact do here is to put in an advertisement that is animated, but “popping up” only as an in-page advertisement and not as an over-the-page advertisement like traditional pop-ups. By doing, so we will have a pop-up advertisement that does not have a frame. Thereby we can compare the effect between a pop-up with a frame with a pop-up without a frame. By using this procedure we will perhaps be able to resolve the controversy.

This can be formulated into hypothesis number 6a) and 6b).

H6a: A traditional pop-up advertisement will elicit more attention to the advertisement than a FL¹ pop-up (in-page) advertisement.

To be rejected...

[H0H6a: A traditional pop-up advertisement will elicit equal or less attention to than a FL pop-up advertisement.]

And furthermore:

H6b: A static advertisement will elicit more attention to the advertisement than a FL pop-up (in-page) advertisement.

To be rejected...

[H0H6b: A static advertisement will elicit equal or less attention to the advertisement than a FL pop-up advertisement.]

A result that would be in line with hypothesis 6a) and 6b) can give some information about the “abrupt presentation effect” and the “frame effect” so that we perhaps can resolve the controversy.

However, there will still be obstacles in our way if we want to attribute effects to the right construct. The point is that not even an answer to the “abrupt presentation – frame” construct pair will be sufficient for a comprehensive understanding. The problem is the dual property of the construct under examination here. Let us elaborate further in order to decipher what this means.

First, the abrupt presentation effect has to do with the popping up of the advertisement and will be measured in the hypotheses above. The frame effect has to do with the frame of the pop-up advertisement and can be divided into subordinate constructs that is building up the frame. One can of course measure and analyze the entire frame effect and get an answer of that effect and this will be measured in the hypotheses above. However, one can also analyze the subordinate constructs.

From a stimulus point of view an advertisement that is popping up with a frame has at least two properties that are relevant here. We can talk about the frame as having a size component and a “frame-meaning” component. The inherent properties of a pop-up advertisement (when it comes with a frame) will inevitably increase the size of the advertisement. Just the fact that this pop-up package is larger in size may have an effect when measuring the response from this stimulus. This has to be considered.

Furthermore, there may be a second effect originating from the frame that does not have to do with the size of it. This second “frame effect” might be connected to meaningfulness or formulated differently; the frame may represent a distinct meaning compared to an advertisement without a frame. The rationale for this is that a frame that is popping up represents an intrusion in the visual field of

¹ The special pop-up advertisement will hereafter be called FL (FrameLess) to make it easier to separate it from the traditional pop-up advertisement.

a Web user and this intrusion may have a certain meaning to the user and that could then be the reason why they attend to the advertisement. The meaning that it represents is most likely not a positive one, but a negative. So instead of applying Yantis idea of new objects in the visual field to the described situation it might be even more fruitful to lean towards Mack and Rock's notion of meaning, or perhaps both.

Following Mack and Rock's notion of meaning and late selection then a pop-up advertisement without a frame should carry "less meaning" from a user's perspective than what a pop-up advertisement with a frame carries. This would clearly mean that the frameless pop-up advertisement will elicit less attention to it than the pop-up advertisement with a frame. Nonetheless, as we may recall, Mack and Rock were discussing around what actually attracts attention and they were pointing at "meaning" as one factor. They also discussed around a late selection theory to explain why subjects for instance saw their names when spelled "Jack" but not when spelled "Jeck". Translating this to the advertising situation; can it be that they see the advertisement when they see the frame since it is a carrier of negative "meaning"?

Without carrying on any further we can already here say that we will obtain the effect of both size and frame-meaning at the same time² when we are measuring the frame and then we can not with certainty attribute the effect to the right construct. Though, the fact that we will not obtain an answer to the frame-meaning issue is however not a reason to not pursue this endeavor, on the contrary. As we have discussed earlier we may reach a greater understanding of the boundaries of the pop-up effect and to resolve the "frame effect"³ versus the "abrupt presentation effect" issue.

The assumption of hypothesis 6b is that if 6b is correct then the abrupt presentation for the FL pop-up advertisement plays a minor role when comparing it to the static advertisement. In this experiment the two tested advertisements have indeed equal size. The very reason why the static advertisement is expected to elicit more attention is because it has longer exposure duration. If the abrupt presentation, on the other hand, is strong this should more than well compensate for the shorter exposure time for the FL pop-up advertisement and the attention to the FL pop-up advertisement should be greater than that for the static advertisement.

Finally, we should be open for the fact that there may be other not yet known effects that may have an influence on the effects that we are

² What is clearly needed to potentially resolve this issue to the fullest and to be able to attribute the effect to the right "location" is a pop-up advertisement with a frame and where the size of the frame should not exceed the size of the advertisement X. Then the size effect would at least be equal but the advertisements would be unequal. A higher effect for the pop-up advertisement with the frame would then indicate that it is indeed the frame and not the size that is behind the increased effect. This could however not be tested in this study due to fund and time constraints.

³ With the sub constructs not separated.

observing. Nevertheless, here is an opportunity to reach a bit further in our understanding of this phenomenon, especially since no research has been done in this particular area.

Modelling attention to Web advertising

Vakratsas' and Ambler's model (see figure 2.4) is the most similar to the model and ideas to be presented here. However, there are some differences that are related to the influence of the environment/context dimension and also the attention getting techniques. Furthermore, from the theoretical description of attention in the previous we know that the attention system is an intrinsic part of cognition and the point here is to open up the cognition part of Vakratsas' and Ambler's box somewhat.

Drawing upon Treisman's attenuation theory and Vakratsas' schematic model it can be visualized what is taking place when taking into account the studied factors' (the ones in hypothesis H1 and H2 as well as H3 - H6b) interplay with attention. Based on this the model is to be built and tested.

Starting at the left (in figure 3.1) there is a contextual dimension, the Web environment/mode (hypotheses H1-H2), in which the advertisement is placed in. Given that it is a question of a Web advertisement the advertising message has a potential "propellant", the extra attention getting technique, which can enhance attention (hypotheses H3-H6b). The environment/mode and the attention getting technique together with the advertising message constitute the input.

As we have seen in the theoretical chapter there are a number of terms that are being used for the construct that Broadbent initially called a "filter". Treisman has used the term filter too in her work but also pointed out that her "filter" is an attenuator which is attenuating the input. She has also used the term "barrier". Still other researchers have used the term bottle neck and of course also the limited pool that can be seen as a barrier. No matter what terminology that is being used one could say that there is a filtering mechanism, borrowed from Pashler, which is located between the input and attention.

The filtering mechanism is placed as a barrier in the center of the model. This construct is actually a part of the attention system so the separation is merely to visualize how the system works. The filtering mechanism can allow advertising messages to pass through to a greater or lesser extent depending upon how the contextual dimensions affect the mechanism.

On the right there is unintentional and intentional attention leading to memory. The two different kinds of attention are covering both the situation when an advertisement has been attended to in a peripheral unintentional manner and when it has been more intentionally attended to. If isolating and focusing closely on the critical constructs that have been discussed, it could take the following form;

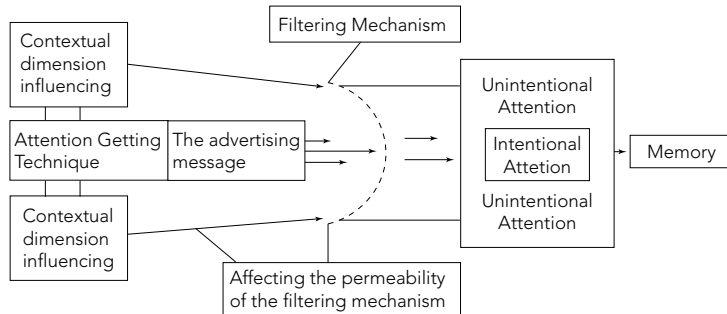


Figure 3.1 A model of attention in Web advertising.

A straightforward description may summarize the relationships between the various parts of the model. The advertising message, on the left in the figure above, is the source of stimuli input and may be propelled with an attention getting technique. The advertisement is placed into a context that may impact the advertisement's ability to penetrate the filtering mechanism in order to be attended to, intentionally or unintentionally. The advertising message will at the end be delivered to memory.

From the author's point of view the proposed model in figure 3.1 is a plausible translation of relations between concepts, given that the hypotheses are supported. That is, that support is generated for hypotheses H1, H2 and the general notion⁴ expressed in H3-H6b.

Third Section – measurement and pricing

This third section of the hypotheses is targeting how advertising on the Web is being measured and can be tested directly with hypotheses. The second area is not being tested directly with hypotheses but the results from the first area will have implications for the second area since they are intrinsically tied together.

In one of the pilot studies that were conducted, findings suggested that banner advertisements, with the sole purpose to redirect users to their own Web sites, have to quite some extent been replaced by advertisements containing a complete message on the advertisement itself. This result is supported by other studies conducted, which has been reported in the theoretical chapter. Furthermore, since fewer users are in fact clicking on the banners, the promotional content has to be presented straight on the host page as an advertisement and not on the page where the hyperlink leads to. In recent years this is actually what has happened and recent studies are indicating that Web advertisements are increasingly designed for this purpose as well.

⁴ That there are attention getting techniques in Web advertising, as described, that enhances attention to an advertising message

However, despite this development, advertising effect is still being measured as click-through frequency. Krugman, one of the prominent researchers of advertising effects, have advocated the use of recall and most of all recognition in order to better account for the effects of advertising. This is in contrast to a widespread practice in the Web advertising industry. In order to investigate whether it is a correct practice or not to use click-through as a measure of advertising effect, the following hypothesis is formulated.

H7: A Web advertisement will generate more respondents being aware of the advertisement as measured by the recognition measure than it will generate clicks on it.

To be rejected...

[H0H7: A Web advertisement will generate equal or less respondents being aware of the advertisement as measured by the recognition measure than it will generate clicks on it.]

If H7 is correct it would imply that there is an advertising effect taking place that is not accounted for if only the numbers of clicks are measured. Adequate measures ought to be used in order to really know the effect of advertising on the Web. This would be in line with for instance Krugman's view on how to measure advertising effect and contrary to a widespread practice among contemporary practitioners only measuring click through frequencies. It would also have implications on models for pricing in the area of Web advertising. This would indicate that the basis for the pay per click- pricing method (PPC) is inadequate and should be altered or dropped in favor of pay per view (PPV) models.

Other effects regarding Web advertising

In the theoretical chapter it was pointed out that it is not entirely positive when advertisers are over ambitious in their striving to capture attention. In some cases there are of course individuals that gladly will look and spend time and attention on viewing an advertisement, perhaps even clicking on it. This is though not always the case. Research by for instance McGalliard, Nielsen, and Spool et al. show that some subjects do not appreciate advertising to such a great extent and that attention getting techniques can be perceived as "annoying", "irritating" and even "evil". Based on this it is reasonable to expect that the more attention getting techniques employed the more annoyance evoked.

In this experiment three different attention getting techniques will be tested against each other.

H8: The risk for an advertisement to be perceived as annoying will be greater when more attention getting techniques are employed in the advertisement. This would mean that a static advertisement will be the least annoying, an animated advertisement will evoke intermediate annoyance and a pop-up advertisement will be the most annoying.

To be rejected...
[H0H8:All other alternatives.]

A rejection of H0 will tell that there is a difference between the various treatments. This difference would indicate that attention getting comes at a “price”, the price of the advertisement being perceived as annoying by the audience. With further analysis, it may also tell what kind of attention getting that is perceived as more or less annoying by the respondents.

Summary

The hypotheses in this chapter are summarized in the following:

H1: A situation where respondents are exhibiting a less goal oriented surfing behavior will elicit more attention to an advertisement than what a more goal oriented surfing behavior will.

H2: A Web environment that is less complex, with regard to its search depth, will elicit more attention to an advertisement than what a more complex Web environment does.

H3: An animated advertisement will elicit more attention than a static advertisement.

H4: A pop-up (traditional pop-up, over-the-page) advertisement will elicit more attention than a static advertisement.

H5: A pop-up advertisement will elicit more attention than an animated advertisement.

H6a: A traditional pop-up advertisement will elicit more attention to the advertisement than a FL pop-up (in-page) advertisement.

H6b: A static advertisement will elicit more attention to the advertisement than a FL pop-up (in-page) advertisement.

H7: A Web advertisement will generate more respondents being aware of the advertisement as measured by the recognition measure than it will generate clicks on it.

H8: The risk for an advertisement to be perceived as annoying will be greater when more attention getting techniques are employed in the advertisement. This would mean that a static advertisement will be the least annoying, an animated advertisement will evoke intermediate annoyance and a pop-up advertisement will be the most annoying.

Chapter Four

Research Method

In order to answer the research problems an adequate method is needed that can develop the information required. In the following chapter the research method is outlined and elaborated in detail, showing the path of the studies conducted.

Approach

This study is in its essence a study of social activities. Social activities can be studied in a variety of ways employing different methods to achieve understanding and to capture and create knowledge or knowledge statements. Independently of the research strategy chosen, it can be seen as a map or a tool for the researcher on her way through the research process to fulfill the purpose of the study (Bengtsson, 1994, p. 41). The researcher is though not a blank sheet when initiating the research. Instead, she will have all prior knowledge and views as a luggage that may tilt the map in some way. While some researchers are more prone to view the world in a more objective way prioritizing certain kinds of knowledge, others on the other hand may be more interested in other more subjective aspects of the social world. My view is that there is a whole spectrum of possible views of the world and that they all can contribute with different kinds of understanding. Czarniawska (1999 p.9) states that different views contribute in their own respective ways, and it is reassuring that, many versions of the world are possible.

Johansson-Lindfors (1993 p.41), when reasoning around Morgan's views, is stating that objective as well as subjective views on reality can be relevant when studying different research problems in social science. Bonnedahl (1999, p.39) is arguing in line with this stating that knowledge about reality to a greater or lesser extent can be seen as either objective or subjective. Following Bonnedahl's eloquent phrasing, this study is not aiming at providing an objective truth but rather descriptions that can be inter-subjectively understood.

The research problem and the purpose of the research is also of importance in this context since they, to quite some extent, will be guiding the research process and also reveal what kind of knowledge the researcher is aiming at. The research problem is also to at least some extent narrowing down the potential approaches and methods that can be used (Yin, 1994 p.4). However, a given research problem can be approached by using either a qualitative or a quantitative approach, or a combination of the two. Furthermore, one might use a survey, case studies, interviews, experiments or some other strategy in order to answer the research problem and to extract information. These strategies have various advantages as well as disadvantages that would make a certain strategy very suitable in one case while perhaps completely inappropriate in another setting. Whether to choose one strategy, at the expense of another strategy, is a delicate decision that the researcher has to make. For instance, the qualitative approach is perceived to provide rich descriptions of the social world (Denzin & Lincoln, 2002 p. 10). According to Denzin (2002, p. 3) the qualitative research is a "situated activity that locates the observer in the world" and furthermore that "qualitative researchers study things in their natural settings". The quantitative approach, on the other hand, makes it manageable to study a larger selection of individuals and thereby provides, to a larger degree, knowledge statements that can be generalized to a larger population.

The research strategy chosen for this study has been based upon a few considerations that were taken into account. First, a quantitative approach is appropriate as one of the aims is to be able to identify differences between treatments in a selection and with the ambition to generalize to a greater population. A qualitative approach is not quite suitable for that task, a notion supported by Johansson Lindfors (1993, p. 61-65). Furthermore, theory suggested that some of the phenomena to be studied are assumed not to occur frequently in a population. When an infrequently occurring phenomenon is to be studied and compared with other occurrences then a quantitative approach with a fairly large sample is preferable. Another reason is that, in one part of the study the objective is to find (or not find) variation and rates of occurrence between groups and within groups, which makes the qualitative approach less suitable. Consequently, the research strategy chosen is quantitative in nature and includes a survey to extract information from a large number of subjects.

Considering that the primary aim of the study is to investigate differences in response between subgroups subjected to different treatments then some kind of test has to be conducted. In light of this ambition the experimental approach is a natural choice. In the words of Cook and Campbell;

“The word experiment denotes a test, as when one experiments with getting up two hours earlier to see if this makes one’s working day more productive.” (Cook and Campbell, 1979, p. 2)

This study is however not a matter of testing productivity but to test a number of specific advertising messages under some specific conditions. The purpose of the various experiments is to answer and highlight different aspects of the overarching research problem. A number of hypotheses have been formulated, originating from the research problem. These hypotheses are derived from theory and represent statements, which “specifies how two or more measurable variables are related” (Churchill and Iacobucci, 2002, p. 93). Formulated differently one can say that the hypotheses are a possible answer to the research question (Aaker, Kumar and Day, 2001, p.49).

Multiple experiments were designed and set up to arrive at a comprehensive understanding of the many facets of the research problem. How the experiments were conducted and how they were designed will be elaborately described in the following section.

The essence of an Experiment

Compared to other methods experiments demand rigorous planning in advance in order to avoid pitfalls and obstacles that may lead the researcher astray. An example will best explain the essence of an experiment.

For instance, Ivan Pavlov, a Nobel Laureate in 1904, conducted his well known experiments in such a way that he rung a bell and subsequently gave food to his research subjects, the dogs, for a period of time. After a short “learning”

period he could just ring the bell and afterward measure an increase in the saliva produced in the dogs' digestive glands. In that case Pavlov could with a degree of certainty say that the measured effect (increase of saliva) originated from the ring in the bell and no other occurring events. The reason for this was because Pavlov controlled the environment so that there were no other events that could explain the effects that were observed. Hence, Pavlov could rule out other potential "z-variables" (other variables that could have explained the event) as having any impact on the observed effect. Pavlov was "so concerned with isolating the cause of the dog's salivation that he constructed a 'Tower of Silence,' with eight soundproof rooms separated by spiral staircases" (Becker, 2003, p. 88). Pavlov had thereby shown, without the interference of other variables, the cause (ringing bell) and effect (salivation) of conditioned reflexes and at the same time paved the way for a more objective way of studying behavior.

In another rather well known experiment¹ a horse was claimed to have the capacity to perform some simple calculations. When asked by his master, Wilhelm von Osten, what is the sum of 3 plus 2, the horse tapped his hoof five times. This and other tests of the intelligence of the horse (which went by the name "Clever Hans") were taken as evidence of an understanding of human language as well as simple calculus. Albeit many researchers looked into the case it took quite some time before it was found that it was in fact another variable that had an effect on Clever Hans' counting skills.

Oskar Phungst, a psychology researcher, found that Hans was able to respond to subtle physical cues (more or less equivalent to body language) so he stopped "counting" when he reached the predestined number, not because Clever Hans could count, but because he could read the body language of the person who was asking the question (Fernald, 1996). When Clever Hans reached the right number the body language of the one asking the question was slightly altered and then Hans stopped. This unexpected variable "z" gave an explanation to the whole phenomena and at the same time disproved that the horse had an unprecedented intelligence².

In short, what is preferred is the situation of Pavlov and to avoid the situation with Clever Hans. It is for that reason imperative in experimentation to control the environment in order to be able to reach non-confounded conclusions. This and many other problems are the focus for the researcher's effort to ensure reliable and valid results.

When taking the discussion above and formulating it in a more formal way, then an experiment is, in its essence, a test of what the outcomes are under

¹ Actually the events started out as a show for the public but eventually led to tests conducted by researchers.

² Even though Clever Hans was not intelligent in calculus, he was very skilled and intelligent in reading subtle physical cues.

certain criteria. It is distinctly stated “certain criteria” for the reason that the researcher often controls the environment and wants to be assured that it was actually and solely due to the treatment X that the change of Y occurred and not for any other reasons. The researcher has a strong wish to be able to exclude other explanations Z which could interfere with the conclusion that Y happened because of X and nothing else than X. The general idea with an experiment is to observe the variation in one variable as a consequence of the manipulation of another variable, while other variables are being kept stable. If this endeavor is accomplished then the researcher may reach a state where she can say, with some degree of certainty, that X caused Y.

To conduct research in a natural setting is often what researchers aim for. It is though not always achievable. There are many reasons for this, for instance scarce resources such as time and money but also practical problems for instance how to study a phenomena and to have control over disturbing or distracting z-variables in a natural setting. Another way to conduct the study, which is often more manageable, is to conduct research in a laboratory setting where it is more uncomplicated to control variables. The strength with the laboratory rests on the possibilities it provides to keep the environment stable in the way the researcher wants it to be. It thereby becomes easier to be certain that the observed effect can be attributed to the right cause.

A typical experiment is often staged so that the researcher is first doing a pretest where the treatment group is being measured on the variable to be examined. Afterwards this group will receive a treatment followed by a posttest to see what effect the treatment had. Usually the researcher will have a control group as well where respondents are not receiving any treatment or receiving an irrelevant treatment, i.e. placebo. This will put the researcher in a position to compare the treatment group with the non-treatment group. In the posttest the researcher can notice whether there is a difference between the groups and if so, how big the difference is. When properly conducted, the researcher can then conclude that the effect observed in the posttest is caused by the treatment. In this study, this strategy described was, however, not used. Instead, a slightly different kind of experimental design was employed; a design which is very frequently used in advertising research as well as and in other areas.

The design included multiple treatments since the overall idea was to do multiple comparisons. This experimental strategy is sometimes called “planned variations” (Cook and Campbell, 1979, p.349) or more commonly “factorial design”. Compared to the “traditional” experiment described in the above paragraph the multiple treatments experiment does not include a no-cause baseline “making it difficult to test hypotheses about “absolute” cause as opposed to hypotheses about differential impact” (Cook and Campbell). This is in line with the purpose of the study, which is to investigate differences between treatments, rather than to state the amount of the absolute level of a certain treatment in comparison with the placebo group. A non-treatment group would therefore not have contributed to the interpretation of the

results. Albeit the lacking of an explicit or separate control group, it should be kept in mind that each of the treatments “acts as a control for the others” (Aaker, Kumar and Day, p. 345, 2001) making a traditional control group redundant. This procedure is adequate since, as noted earlier, the purpose of the experiments is to compare differences between multiple treatments.

However, a non-treatment group could have provided some information about the level or how many of the respondents that falsely claimed to have seen an advertisement in a treatment when they actually did not see one. This problem was however overcome by using an alternative procedure. The respondents were not simply asked whether or not they had seen advertisement “X” but instead they had to point out which one out of five different alternatives they had seen. Rothschild and Singh (1983) are stating that response bias may be eliminated by using multiple alternatives when the stimulus item in the recognition test is presented together with one or more distracter items. By doing so, the respondents could not falsely claim to have seen an advertisement they had not seen. If the respondents guessed which advertisement had been presented their responses would have been evenly distributed between the five alternatives making it possible to calculate the effect of the guessing and to subtract this from the results. However, this never became a problem indicating that the five alternatives was an adequate means for deterring the respondents from guessing.

Another noticeable difference, compared to traditional experiments, is that there were no pretests in order to measure the level of the dependent variable or any other variable. Since the treatments were fictitious innovations then we know with certainty that all respondents in all treatments were equivalent to “zero”³ before they received a treatment. Consequently, any pretests would have been superfluous.

³ They were “zero” in that respect that no one had ever seen or attended to the treatments before. The attention to the advertisements in the various treatments was the variable to be measured. A pre-test would not provide additional information and would also be logically inconsistent to implement.

Overall design

The research design comprise of a pre study phase, which is followed by the main study. Due to the nature of the research problem and also because the area of Web advertising is a fairly new one, pilot studies were undertaken in order to get the required pre-knowledge to do the main study. The studies, which vary in their width and time span, were conducted in the beginning of the project. The studies can be described as here below:

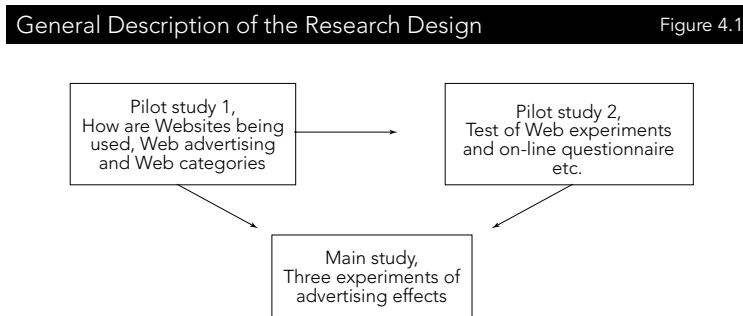


Figure 4.1 General description of the research design.

The pilot studies were targeting different areas of the subject. The purpose of pilot study I was to obtain an overview of different kinds of Websites, advertising and advertising means on the Web. The intention was to identify frequently used Web functions and design elements. This provided basic data for an elementary Website categorization on how Websites are being used by Web users. Pilot study II was a test of the developed experiments, the various treatments and the on-line questionnaire. It was a live test on a group of 30 respondents with the purpose of revealing problems with questions, concepts, inconsistencies or any other flaws with the research instrument. Findings from pilot study I was used to develop and to design the experiment and the questionnaire whereas pilot study II had the purpose to refine and fine tune the main study.

The main study comprised of three separate experiments. The experiments were however conducted more or less simultaneously in order to save time. The experiments were followed by a survey to measure the effects of the different treatments. These both parts, the experiment and the survey, were integrated into one single HTML design that was presented sequentially to the respondents.

The three experiments in the main study can be portrayed as in figure 4.3.

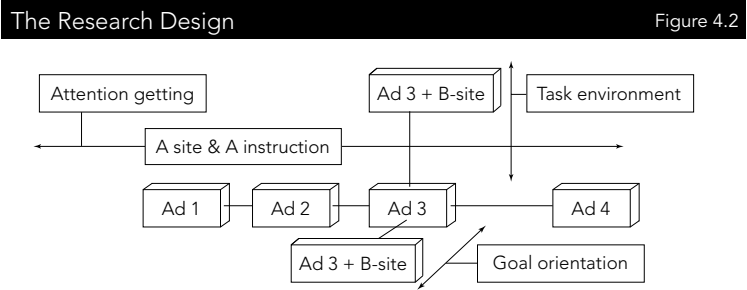


Figure 4.2 The research design with its treatments in three dimensions.

Figure 4.2 is visualizing and providing a schematic overview of the dimensions studied in the experiments. The horizontal dimension in the figure is targeting the attention getting effects between various advertisements, i.e. ad 1 through 4. Initially this experiment comprised of ad 1 through 3 but was extended with ad 4 (treatment 6), the “frameless ad”. This experiment used Web site “A” and instruction “A”.

The vertical dimension in figure 4.2 is aiming at the impact of the setting or task environment in which the advertisement is presented. In this experiment the advertisement variable, Ad3, was kept stable and instead the Web environment was altered.

In the last dimension, which is diagonal in the figure, goal orientation or mode was the main issue. In this experiment the advertisement variable, Ad3, was kept stable as well. At the same time the task environment was kept stable. The experiment was to test different levels of goal orientation manifested through two separate instructions given as treatments.

The design of the experiments

The three experiments in the main study were conducted in order to answer the research questions posed. The reason why experiments were employed was to investigate if any differences between advertisements and Website environments could be found. The expectation of differences is natural when doing experiments. Graziano and Raulin (1993) are stating that the expectation of variation is logical when using experiments – if there is no variation there are no differences to test.

Four different Web advertisements and two complete Web sites were set up. The Websites were designed⁴ in line with how a typical Web site in that particular

⁴ The Websites were designed by the author together with Web designer Magnus Lindgren and two computer engineers who were solving some specific problems.

category is designed. The design of the two Websites was guided by information collected in pilot study I. In the same way, the advertisements were designed⁵ in line with the appearance of a typical Web advertisement. The design of the advertisements was guided by information collected in pilot study I.

The experimental Web site was a complete news Web site with the same breadth and scope as an average national Swedish news Web site. The Web site had more than 130 individual Web pages that could be accessed by the respondents. Mullarkey and Danaher (2003) did a study that was similar in some respects as the study at hand. However, in their study the respondents could not surf as one normally does when visiting a Web site. Instead the respondents were restrained to merely watching a Web site that was changing pages automatically with different time intervals. In the experiments conducted here the respondents were able to actually interact and surf in any way they wanted. Thereby this experimental design is an improvement that makes the situation for the respondents more realistic and comparable to a real world situation.

The experiment Web site design included one Web version (hereafter called the “A-site”) that could be seen as representative for Swedish news Web sites and a second Web site (hereafter called the “B-site”), actually a derivation of the first one, which was less complex with respect to the search depth. Both Web sites had exactly the same content, news, headlines, name and visual appearance. The only difference was that the B-site had a shallower search depth and was, consequently, less complex.

If we take a look at the outside world we can see that the A-site is similar, when it comes to the search depth structure, to for instance the Swedish Web sites “DN.se”, “HD.se” and “SVD.se”, to mention a few. The B-site is more similar to the search depth structure of “Aftonbladet.se” and “Expressen.se”. The search depth system employed in the experiments was thus not arbitrary but an imitation of what is commonly used in real.

The Web sites were designed so that they would look similar to real Websites and this was achieved by using the same kind of links, subjects, concepts and general structure as can be expected in a traditional news Web site. The two Web sites had the same color theme, the same background color, the same frame colors and text fonts. Furthermore the same system for links and buttons were used. The Websites were specifically designed in such a way that there would be as small differences between them as possible except for the search system and search depth. The search depth was an operational variable to be tested and used as a measure of the complexity construct.

⁵ The advertisements were designed by the advertising agency

In the advertisement experiment, targeting attention getting effects, four different advertisements were used. The advertisements were exhibiting brands, products and offers that were entirely fictitious so that there would not be any problems with bias (for instance, that some respondents would recall or recognize the advertisement beforehand while other respondents would not recall or recognize the advertisement). All advertisements had in common that they had the same brand name, picture, headline and copy text. This general advertisement was then used in different ways. Here is a short description of the advertisement: the brand name was “Dentax”, there was an image of a female mouth covering the mid section of the advertisement, the headline stated “För en hälsosammare mun”⁶, the copy text stated “Nu finns den första tandkrämen som motverkar tandsten och samtidigt ger vitare tänder”⁷. The advertisements can be found in appendix A.

The first stimuli, Ad1, was a static version of the general advertisement placed to appear on the right upper part of the screen. The size of Ad1 was 283 times 250 pixels. The second stimuli, Ad2, was a dynamic animated banner advertisement based on the general advertisement. It was placed at the same location as Ad1. The size of Ad2 was 283 times 250 pixels. The difference between Ad1 and Ad2 comprised solely of the animated effect added to Ad2. The animated effect was accomplished by using a java script producing a “slideshow” where 5 images were presented for 3000 milliseconds each. The “slideshow” produced an animation that altered the mouth that was displayed on the advertisement. This created an effect so that it appeared as if the mouth was moving and forming into the shape of a “kiss”.

The third stimuli, Ad3, was a dynamic animated banner advertisement based on the general advertisement. The animation was equivalent to Ad2. Ad3 also had pop-up properties distinguishing it from Ad1 and Ad2. Ad3 was programmed to appear in the same area as Ad1 and Ad2. The size of Ad3 was the same size as Ad1 and Ad2, 283 times 250 pixels. Though, since Ad3 was a traditional pop-up advertisement it came with a standard Windows pop-up frame that added 50 pixels on the height and 25 pixels on the breadth. This meant that the pop-up advertisement in fact came with a frame that made it 21 075 pixels large or 29.2% larger than Ad1 and Ad2. This size difference was an unwanted but necessary difference in order to study advertisements of the same size.

To control for the size effect just mentioned there was also a fourth advertisement, Ad4, designed. This advertisement, Ad4, was similar to Ad3 since it was a pop-up advertisement. However, it did not have the frame that Ad3 had. The treatment with Ad4 was primarily designed to investigate the effect of abrupt presentation and the effect of the frame presentation.

⁶ In english: For a healthier mouth

⁷ In english: The first toothpaste that fights tartar and gives you whiter teeth at the same time.

The advertisements Ad1 and Ad2 were presented on the Web sites throughout the whole experiment session of 6 minutes. Ad3 was a pop-up advertisement and was launched after 15 seconds, 60 seconds and after 180 seconds. In the second round of experiments the average exposure time was recorded for the respondents subjected to Ad3 and was less than 90 seconds. The exposure time here is stated as “less than” 90 seconds and the reason for this is that the automatically set exposure time for Ad4 was 90 seconds. So as long as the time for Ad3 was less than these 90 seconds we can be sure that the average exposure time for Ad3 has not been in favor of Ad3 compared to Ad4. The hypothesis for the comparison between Ad3 and Ad4 expects Ad3 to be more effective and a longer exposure time for Ad3 would jeopardize the conclusions. An equivalent or shorter exposure time would on the other hand ensure us that exposure time is not a factor here. As a matter of fact, in a majority of cases the exposure time was considerably less than 60 seconds for Ad3 making the exposure time a less important factor in this case. This exposure duration fits well with for instance the study reported in the theory chapter where a majority of respondents clicked away pop-ups within 3 seconds after appearance or clicked on some other link or area within 25 seconds making the pop-up disappear.

Advertisement Ad4 was also a pop-up advertisement and was automatically launched after 15 seconds, 60 seconds and after 180 seconds, the same time intervals as Ad3. Ad4 was only used in the second round and gave the respondents a total exposure time of 90 seconds.

The first experiment aimed at testing the following treatments:

Treatment 1 comprised of Ad1 presented in Web site “A”. (static)

Treatment 2 comprised of Ad2 presented in Web site “A”. (animated)

Treatment 3 comprised of Ad3 presented in Web site “A”. (pop-up)

Treatment 6 comprised of Ad4 presented in Web site “A”. (ad without a frame)

The internal drive experiment was designed to study how internal drive or goal oriented behavior impacts the effect of attention to advertising. In order to test this hypothesis an experiment was created where the entire design actually was based on a difference in instructions. The respondents were given slightly altered instructions in order to induce an internal drive and to make them more goal oriented. This was accomplished with a few very simple questions that could be answered with a simple yes or no. The instructions that were given can be found in appendix B. The standard instruction that was given is called the “A-instruction” and the alternative, internal drive inducing, instruction is called the “B-instruction”. The group that got the B-instructions was treatment 4.

This experiment aimed at testing the following treatments:

Treatment 3 comprised of Ad3 presented in Web site “A” with the “A-instructions”.

Treatment 4 comprised of Ad3 presented in Web site “A”. (B-instructions, goal oriented behavior)

The Web environment experiment was designed to study how the physical task environment or the Web environment impacts the effect of attention to advertising. In order to test this hypothesis the experiment was designed so that two different Web environments, with respect to the search depth structure, were given as treatments to the respondents. The two task environments differed in their complexity and this was the variable to be studied. One environment was less complex, Web site “B”, than the other environment which was more complex, Web site “A”. Hence, the advertisement stimulus was placed in two different contexts.

The Web environment experiment aimed at testing the following treatments:

Treatment 3 comprised of Ad3 presented in Web site “A” with the “A-instructions”.

Treatment 5 comprised of Ad3 presented in Web site “B” (less complex environment) with the “A-instructions”.

In the first round of experiments treatment 1 through 5 were run and in the second and extended round of experiments treatment 1, 3, 5 and 6 were conducted.

The main measures used

In order to measure the effects of the various treatments a number of means to assess the effects of the stimuli were employed. The main measures that were used were recognition and recall. The adequacy of using these measures has been elaborated on in the theoretical chapter but in addition to those descriptions the following statement can be added:

“The difference between recall and recognition is that in a recall test a subject is given a set of information and is later given some minimal cue and asked to retrieve and reconstruct the original information, whereas in a recognition test the subject is confronted with the original material and asked whether it has been seen or heard before. Hence, for recall the individual must describe the stimulus which is not present; for recognition the stimulus must merely be identified as having been previously seen or heard” (Singh & Rothschild, 1983, p. 235).

In some sense it is “easier” to recognize than to recall and recognition is more important than previously thought (Bettman, 1979). Krugman has also commented on the issue:

“[...] the inability to recall something does not mean it is forgotten or that it has been erased from memory. The acid test of complete forgetting is if you can no longer recognize the object” (Krugman, 1972, p. 14)

The recognition measure is thereby a more sensitive measure that can detect effects where recall cannot. In connection to the experiments both recognition and recall was used to measure the effects but recognition was used as the main measure in the analysis of the data.

Recall was measured by asking respondents whether they could recall if they had seen any advertisement on the Web page that they had visited. If they answered yes they were presented with four additional questions where they could write the brand name, headline, copytext and/or describe what the advertisement had portrayed.

In order to measure recognition, those who could not recall (and also those who could recall) the advertisement were thereafter presented with images of the target advertisement and four distractor advertisements. The respondents were then asked to indicate if they could recognize any of the five advertisements presented.

An additional measure that was used was the click-through frequency. The click-through frequency was measured when a respondent indicated in the survey that she had actually tried to click. The reason why there was no possibility for actual click-through to a target Web site was that these respondents would have gotten a different stimulus treatment than the other respondents, had this possibility existed. However, it has been mentioned previously that the click-through measure has never been a legitimate measure of advertising effect, which is also one of the reasons why it is being included and studied.

In addition to these main measures described above attitude measures were used. These questions were asked using a 7 point likert scale where the respondents could indicate whether they had a positive or negative position towards the statement or question. These questions were carefully developed and fine tuned based on input from the tests of the questionnaire.

Selection

The procedure of selecting the respondents for the main study is mainly guided by an interest of targeting individuals with skills relevant for the study. Since the experiments require familiarity and skills in how to use the Web, the Internet and also knowledge of how to use computers, a younger selection was preferred. Even though computer literacy is fairly high in Sweden, younger individuals have greater skills than those who are older. Furthermore we also

know that students (compared to non-students) are forced to use computers on a day to day basis as part of the various educational programs. It is therefore more likely that students, as opposed to other groups, will satisfy the basic requirements for the experiments. Support for these notions can be found in other researchers' studies of the World Wide Web and the Internet. For instance, Gallagher, Parsons and Foster (2001) conducted a series of studies in laboratory environment as well as home environment and used student samples as well as random samples. They also replicated their studies. Their conclusions were that there sometimes are circumstances when a student sample is particularly suitable to use. They state that "...university student samples may provide the best available indicators of where the general population will be when the Web becomes as familiar as traditional media, such as print and television." With these above arguments at hand it was decided to do the study on a selection of students and in particular students at the Umeå University.

By selecting students, by definition a convenience sample, for the study there were also additional advantages achieved. A major problem that could be anticipated was a reluctance to participate, i.e. non-response. A random selection of individuals from the Umeå area could have resulted in a non-response level well above 90%⁸. It is not unreasonable to believe that it would have been perceived as quite an obstacle from the respondents' perspective to travel on average 5 kilometers and sometimes up to 30 kilometers just to participate in an experiment. The concern for a low response level was an additional consideration and concern when it was decided to use students for this study.

By targeting students the problem with travel and finding the location was assumed to be reduced since students know the locations and frequently visit the area where the experiments were being conducted.

Umeå University has around 28 000 students and is located in a community that has the highest Internet penetration in Sweden (Liljenäs and Öberg, 2001) and most likely also in the world. Already in 2001 there were more than 80% of the households that could access the Internet and were using the Internet on a regular basis (Liljenäs and Öberg, 2001), which is a fairly high percentage when comparing internationally. Of these 80% more than 50% of the households are connected to the Internet thru a broad band connection at a speed greater than 256 Kilo bits per second. Typically the transfer speed is 1.0 or 10 mega bit per second and sometimes even as high as 100 megabits per second. Taken together the use of Internet, with high capacity, in Umeå is thereby more widespread than what it is in any other place in Sweden. To study students in Umeå community was thereby a very suitable opportunity.

⁸ 40 phone interviews, with individuals randomly selected from Eniro's Umeå section, showed that less than 10% were willing to participate. The figure would most likely have been even lower if the request to participate would have been sent by letter, which was the initial intention.

In order to attract respondents to the experiments posters were put up on bulletin boards and the like at the University. On the posters students were asked to sign up for an experiment in “informatics and social science”. In addition to this a number of classes were approached and information was given to the students that they had a chance to participate in an experiment in “informatics and social science” and that they could sign up for participation. The classes that were approached were from all faculties at Umeå University - the faculty of science and technology, faculty of social sciences, faculty of arts, faculty of medicine and faculty of teacher education.

The selection comprised initially of 410 respondents but was extended with another 292 respondents. In summary, a total of 702 respondents (about 3% of the students at the University) were selected on the basis that they wanted to participate out of free will. The respondents were informed that they would receive 100 SEK as compensation⁹.

The experimental setting – the lab

The experiments were conducted in the A wing of the Naturvetarhuset at Umeå University (The building for science and technology)¹⁰. At my disposal for the experiments I had an entire corridor with seven identical offices and one board room. In five of these offices equipment for the experiments were installed. The equipment in every office comprised of 1 Dell stationary computer, 1 keyboard, 1 mouse, 1 mouse pad, 1 IBM 17” CRT screen and the necessary cables. Windows 2000 was installed on the computers as well as the internet browser Internet Explorer 6.0.

The interior of the offices were similar, a desk with a calendar, a plant in the window, a bookshelf and an office chair. The doors to the offices were kept open so that it was possible to observe the respondents. Though, they were not aware of that they were being observed.

The corridor where the experiments were conducted was defined as restricted area and unauthorized individuals were dismissed. The reason for this was to avoid any unwanted interference with the experiments¹¹.

In connection to the corridor with the lab rooms there was a waiting room where respondents could sit down and wait for their turn.

⁹ In the evaluation of the experiment and the questionnaire the respondents received 50, 70 or 100 SEK. The respondents did however not know that it was an evaluation.

¹⁰ The choice of location is perhaps even reducing bias since respondents will not build up expectations about social science and advertising in Naturvetarhuset's environment

¹¹ At only one occasion the experiments were interrupted. Some chemistry students refused to follow instructions and consequently the experiments were terminated and cancelled for that entire day. They were however resumed the following day. That particular class had been chosen to participate in the experiments but was replaced with another class in order to avoid any negative influence on the experiments.

Instructions and procedures

First the respondents were welcomed and asked to take a seat in the waiting room. When it was time to start the experiment they were called in from the waiting room and asked to stand in the door way to the office and experiment that they had been randomly assigned to. Thereafter the respondents received instructions that were read to them to them. The instructions were given to the respondents by either the author or by an assistant to the author. The instructions were read straight from a paper without deviation and with the same tone of voice. Since the respondents were Swedes the instructions were given in Swedish. However, the instructions have been translated into English and are reproduced in the appendix. The standard instruction to the respondents can be found in appendix B and is called the “A”-instructions. The goal oriented instruction given to the respondents can be found in appendix B and is called “B”-instructions.

After the respondents had gotten the instructions they were asked to take a seat next to the computer. They were asked if they were sitting comfortably. They were also not to do anything before they got the command from the instructor. At the command of the instructor they commenced the experiment. After the experiment they were asked to turn around on their chair so that they would not look at the Website anymore. Thereafter the respondents were given the on-line questionnaire so that they could fill it out.

When the respondents had filled out the questionnaire they submitted their answers to the database and were asked to come out of the lab. Some of the respondents were then chosen to participate in the “Exit poll”. Those who were not chosen for the exit poll went straight to the debriefing. All respondents were debriefed after the experiments and the exit poll; see appendix B “Debriefing”. The final activity was to give the respondents 100 sek for their participation and they also got to fill out some personal information to participate in a lottery and to receive information about the results of the study at a later occasion.

The respondents' journey through the experiment can be described as in the figure below.

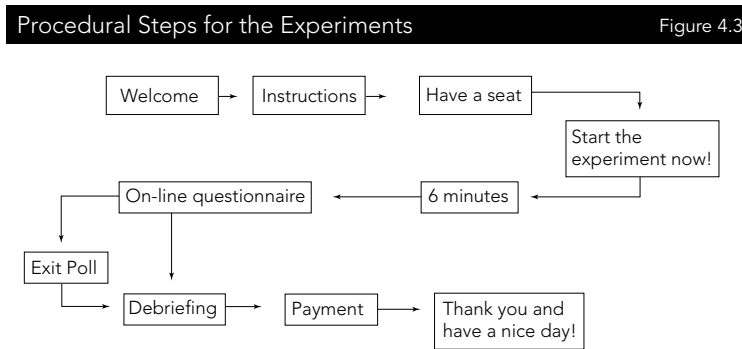


Figure 4.3 Schematic view of the procedural steps for the experiments

The survey

After conducting the experiment on the computer an on-line questionnaire immediately appeared on the screen for the respondents to fill out.

The on-line questionnaire comprised of a total of 60 questions¹². The questionnaire was designed in such a way that 5 to 10 questions appeared at the same time on the screen¹³. The respondents were to fill out these questions and could continue to the next 5 to 10 questions after clicking on a “continue” button. At the end of the questionnaire they pressed on a “submit” button to finish the on-line form.

The questionnaire took on average 13 and a half minute to complete. The questionnaire is enclosed in appendix H.

The “exit poll”

After the respondents had conducted the survey 100 of them were randomly chosen to participate in an “exit poll”. The reason for this was to follow up some issues of interest for the study. Considering that the advertisement in the experiments was about tooth paste it was of interest to find out to what extent the respondents could be considered as being in the target group. Only 2% answered that they had not bought tooth paste the last 12 months. These 2% stated that a parent was providing this product for them.

A second question was whether they perceived the entire Web surfing experience to be realistic or not on the scale unrealistic-neutral-realistic. 89 percent stated

¹² In the questionnaire the questions are numbered up to 63. Despite this fact there are only 60 questions.

¹³ See Appendix H for an example.

realistic, 7 percent stated neutral and 4 percent stated unrealistic. This figure corresponds fairly well with the results from the survey. Notice that the questions are slightly different.

A third question was asked to respondents that had not recognized the advertisement. These respondents were asked if they had had an intention to click on any advertisement on the Web site. Out of 42 respondents 0 respondents or 0% answered that they had had such an intention.

A fourth question was asked regarding how difficult or easy they thought it was to “do what they had been instructed to do on the Web site”. The respondents that got the A-instruction responded almost exclusively “very easy” whereas the respondents who got the B-instructions most often responded “easy”.

A fifth question that was asked was what kind of expectations that they had on the experiment and what they thought that it was all about before it started. 4 % thought that it had something to do with business administration and none (0%) expected something in marketing communication (remember the information given when students were invited to participate and also the location where the experiments were conducted).

A sixth and final question was asked to hear out the respondents whether or not it had worked out well to conduct the experiment and to fill out the questionnaire. All respondents stated that it had gone smooth and without problems.

Validity and Reliability

Validity comprises of a collection of subdivided concepts with the overall purpose to describe or ascribe quality to a study. Validity, in its different guises, are providing a set of instruments to evaluate whether or not the findings from a study can be stated to be valid and reliable in a number of respects.

Internal validity

Internal validity addresses to what extent we can infer that a relationship between two variables is causal or not (Cook & Campbell 1979 and Calder, Phillips & Tybout 1982). It should be further noticed that when we say “relationship” we are dealing with the relationship between the research operations “irrespective of what they theoretically represent (Cook & Campbell, p. 38, 1979). Thus, internal validity has to do with the relationship between X and Y and not the abstract constructs that X and Y may represent. Nevertheless, when the researcher is estimating the internal validity of a relationship the “investigator has to systematically think through how each of the internal validity threats may have influenced the data.” (Cook & Campbell, p. 55, 1979) The process is very much one of ruling out different threats to validity.

Among the many threats to internal validity we can immediately rule out a number of them as a consequence of how the experiment was designed and

conducted. History effects, Maturation effects, Testing effects, Instrumentation effects, Regression effects, Mortality effects, Ambiguity about the direction of causal influence effects, Selection effects, Selection maturation effects and the like are not posing any problems since the respondents were randomized in this study. That is to say that they were randomly assigned to the treatment they received. This position is supported by Cook & Campbell (1979). Randomization makes causal inference easier.

Randomization is however not ruling out all potentially harmful effects, for instance, imitation of treatments, compensatory equalization, compensatory rivalry and demoralization in groups receiving less desirable treatments. Demoralization can be ruled out because no one was in the position to know anything about potentially less desirable treatments and even if they would have known anything it is doubtful whether any of the treatments could be perceived as less desirable. Compensatory effects can also be ruled out since there were no reasons for respondents or a group of respondents to compensate in anyway for a treatment that they were subjected to. Actually it is hard to see how compensation in its normal form would take place in this case. The problem of one treatment imitating another treatment can also be ruled out in the same way as the compensatory effects. However, one risk that potentially could have impacted and negatively influenced the study is if the respondents violated the instructions and shared information between respondents. The potential effect of this information sharing could however be diminished since no one knew before hand in which treatment they belonged. Moreover, they were not informed of that even after the experiment either¹⁴. A specific point with the debriefing was to inculcate in the respondents the importance of not sharing information about the experiments with others (those who had not yet done the experiment) by stating the following in the last three sentences of the debriefing:

“Furthermore, please, do not talk about or tell about the content in this experiment to anyone during the next 4 weeks since more than 600 students at Umeå University will participate. It is preferable if those who will participate do not know in advance about the content of the experiment since this will in fact ruin the experiment. The cost for this study is more than 1 million Swedish crowns so it is good if this study can be conducted in a correct and undisturbed way”. (Instructions in the debriefing, translated into English)

Construct Validity

Construct validity is what researchers are concerned with when they are trying to evaluate if the results are confounded or not. Confounding refers to the possibility that “the operations which are meant to represent a particular cause or effect construct can be construed in terms of more than one construct” (Cook & Campbell, p. 59). The example we saw before with

¹⁴ The respondents were briefed in a general way what they had been subjected to.

Clever Hans highlighted the issue – are we measuring the right thing? What one investigator interprets as a causal relationship between A and B might be interpreted by another researcher as a relationship between X and B or perhaps even X and Y.

Measures to increase construct validity and to avoid confounding includes thorough planning and pre-experimental testing so that the constructs are clear and defined. Throughout the study this has been achieved by explicitly using constructs and their meanings that are commonly used in the theories used for this type of research. There are no deviations from the research main stream in that respect.

The dependent variable, attention, is inherently connected with memory when it is measured with for instance recognition. In fact, both attention and memory are measured at the same time when using recognition as a measure. However, in this case the focus was more on the former than on the latter since measurements were conducted immediately after exposure, making the memory construct less of an influencing factor. In advertising research where the focus is on memory the time between exposure and posttest is counted in weeks or months rather than seconds and minutes as it was here. In all attention research, whether it is in advertising, psychology or some other discipline, the researcher will always face the inherent problem with the attention – memory constructs when using recognition as a measure. What can be said is that the problem has been observed and was reduced to the point where no additional countermeasures could be undertaken, and still use recognition as a main measure. The reason why the experimental design was integrated into one solution was because of this issue. It was thereby possible to reduce the time between the exposure and the following recognition test to an absolute minimum.

When measuring the context's influence on attention, two versions of contexts are used, i.e. the internal drive and the Web environment. Both the internal drive and the Web environment are facets of the same context dimension but they are expected to impact cognitive resources in a similar way. That is, they may both use more or less cognitive resources depending upon how demanding the situation is. The results in the analysis are indeed showing that these two measures of the context dimension can use either more or less cognitive resources as expected. Using two or more dimensions that are targeting the same construct increases the likelihood of achieving adequate results, especially if the constructs are co-varying (Churchill, 1979). From the analysis we can see that the measures co-varied and that they also behaved as expected, criterions that are positive indicators of construct validity (Churchill).

In the case of studying attention getting techniques four advertisements are used for the study. These advertisements are supposed to reflect contemporary attention getting techniques on the World Wide Web. That these advertisements are good representations of and thereby also measuring various levels of

attention getting is merely based on the mimicking of the function and visual appearance of common advertisements used in the 100 Web sites that were studied in the first pilot study. Using these types of advertisements is in line with how attention getting has been researched in other studies.

External Validity

External validity is focusing on whether a causal relationship can be generalized to and across different persons, settings and times (Calder, Phillips and Tybout, 1982 and Cook & Campbell, 1979). Considering that a student sample is used it is appropriate to discuss how this may impact the findings.

Gallagher, Parsons and Foster (2001 A, 2001 B) conducted a series of studies in laboratory environment as well as home environment and used student samples as well as random samples. Their conclusions were that there sometimes are circumstances when a student sample is particularly suitable to use. They state that "...university student samples may provide the best available indicators of where the general population will be when the Web becomes as familiar as traditional media, such as print and television." and furthermore "In these cases student samples are superior to samples of the general population, even when researchers wish to generalize the results to the larger population." (Gallagher, Parsons and Foster, 2001 A, p. 81). Due to the fact that university students are experienced users make them more suitable for testing than those who are not familiar with handling computers, Web browsing etc. An additional argument in favor of the appropriateness of using university students is that, in Sweden where the study took place, about 50% (SvD, 2003) of the young population is continuing with academic studies. This means that "students" is not a small minority group that may deviate significantly in their behavior. On the contrary, half of the population is "represented" when using student samples.

Calder, Phillips and Tybout (1982) go one step further than Gallagher et al. when arguing in favor of using student samples. Their point is that if a homogeneous group is used for the study then there will be less variation in background variables within that group. They in fact state that "Random sampling ... may actually interfere with achieving a severe theory test. This is because it is likely to increase error variance" (Calder, Phillips and Tybout, 1983, p. 241). Using a more homogeneous sample will have the effect that whatever phenomena that is under study may be more protruding or at least not obscured due to increased variation within the sample. They are furthermore stating that controlling, rather than manipulating and examining the background factors should be encouraged.

Some proponents of the importance of external validity have argued that research that is weak in external validity is not considered being an adequate test of theory (Lynch, 1982). Cook and Campbell are though taking a different stance and in line with Calder et al. stating that:

“The priority among validity types varies with the kind of research being conducted. For persons interested in theory testing it is almost as important to show that the variables involved in the research are constructs A and B (construct validity) as it is to show that the relationship is causal and goes from one variable to the other (internal validity). Few theories specify crucial target settings, populations, or times to or across which generalization is desired. Consequently, external validity is of relatively little importance. In practice, it is often sacrificed for the greater statistical power that comes through having isolated settings, standardized procedures, and homogeneous respondent populations. For investigators with theoretical interests our estimate is that the types of validity, in order of importance, are probably internal, construct, statistical conclusion, and external validity.” (Cook and Campbell, 1979, p. 83):

Considering these convincing lines of argumentation a student sample was employed for the studies conducted in this research.

Transferability

Even though external validity was considered the least important to Cook and Campbell this did not discourage the author to put in considerable effort to reassure the transferability aspect. It was considered important that the experiments would be good representations of hands-on experiences in the out side world (outside of the lab). This meant that the experiments were constructed to be as realistic as possible. As a matter of fact, many of the respondents asked informally if it was a new news Web site that was used for the experiments and where they could find and use it at a later point in time. This kind of inquiry could perhaps be interpreted as a quality mark for the experiments’ realistic design.

Czarniawska (1999, p 7) argues that the transferability of an experiment to any other kind of social reality is a matter of whether the reality of the experiment have traits in common with these other realities. Hence, the issue is not whether the experiment is considered “unreal” since the experiment as a matter of fact constitutes a reality in itself, and thereby it is real. Instead it is a question of how many real situations that this tampered reality is a good representation of. That is though a question that can best be answered in relation to the properties of similar or dissimilar realities.

In order to get an understanding for the phenomena in question it was decided to include a measure of realism. The respondents were asked to give their subjective view of how realistic they subjectively perceived the experiment to be, as a representation of a real world Web site experience. Their responses to this measure was that 94.5% of the respondents thought that the Web sites used in the experiments had a high or very high resemblance of real Web sites. Another 4.8% thought that the resemblance was neutral or slightly dissimilar whereas merely 0.6% or 4 respondents thought that the experiment Web sites

had little resemblance with real Web sites. Not one single respondent, of the 702 that was included, ticked the alternative that the experiment Web sites had very little resemblance with their out side world counterparts. These figures are assuring a high level of transferability as discussed in the above.

Reliability

Reliability refers to how stable results are from one test to another. If results would differ between tests conducted at different times then the measures are unreliable or suffer from low reliability. Low reliability inflates standard errors and reduces statistical power, such as finding differences between means of different treatment groups (Cook & Campbell, p. 43).

Often it is difficult, when conducting research, to point at how reliable a certain study is or how stable it has been over a period of time. This issue can sometimes not be addressed since the appropriate measures are absent. Though, in the present study it was decided to run a second round of experiments, which gave an opportunity for a test – retest measurement. Instead of merely enlarging the study with the new parts, it was decided to include the old treatments as well. This made it possible to see whether the results were stable. In the first round treatments 1 through 5 were conducted and in the second round treatments 1, 3, 5 and 6 were conducted. Thereby the new results from treatment 1, 3 and 5 could be compared with the older results.

The findings from the analysis of reliability revealed that the measurements were indeed very stable since the differences within treatments were low. The difference in treatment 1 was 2.4% between test and retest, the difference for treatment 3 was 2.9% and the difference for treatment 5 was as low as 0.3% when measuring the dependent variable. These figures give an indication of high reliability and ensure stability over time. This also made it possible to merge the data into one data set in the analysis. The time between the test and the retest was 1 week.

Analysis

A major part of the work that was conducted in this study was the statistical analysis that took place after the data was collected. Data was collected through the on-line questionnaire and stored in a database. Data was then compiled into data files to be analyzed with the software package SPSS version 13.0. The software package is a sophisticated tool for statistical analysis in general and multivariate techniques in specific.

Three different means for statistical analysis were used; Chi-square, Logistic Regression and ANOVA. ANOVA and Logistic regression will be described in the following.

Logistic Regression Analysis

The classical linear regression model can be used as a starting point in deriving the logistic regression model. As we know the linear regression analysis is

aiming at predicting the dependent variable with one or more independent variables as predictors. In traditional linear regression the dependent variable is continuous in nature and the independent variables can be both continuous and dichotomous in nature. The ordinary linear regression model is typically written in the following way:

$$y = \alpha + \beta X + e$$

where y is the dependent variable to be predicted, α is the intercept, β is the regression coefficient and X is the independent variable. The term e is a random disturbance term with mean zero and variance σ^2 . This model can easily be extended to a multiple regression with the following formulae:

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + e$$

The multiple regression is adding additional independent variables and their respective betas. However, both the simple as well as the multiple regression are adequate when using continuous or metric variables, but they are less appropriate when the dependent variable only can assume either of two values like categorical variables.

In a logistic regression the dependent variable does not have to be continuous. Due to the underlying formulae the logistic regression is appropriate in particular when the dependent variable is dichotomous. For instance whether an individual owns stocks or not is a dichotomous variable. This can for instance be coded as 1 for individuals who own stocks and 0 for individuals who do not own stocks. Now, the dichotomous property is making it somewhat problematic to use either of the linear regression models above. The inherent problem with the dichotomous dependent variable, is that it can only vary between 1 and 0 when the classical linear regression model assumes a dependent variable that can vary between $-\infty$ and $+\infty$. To solve this problem a logarithmic link is used. This link is called the logit function and it is the most popular linking function (Sharma, 1996). The logit function is a nice solution where log of odds are used since log of odds can vary between $-\infty$ and $+\infty$ and are symmetric, contrary to odds that can only range from 0 to $+\infty$ or probabilities that range from 0 to 1. By using log of odds this link is added thereby forming a logistic regression.

The logistic regression expression takes the following form:

$$P(y=1) = 1/e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}$$

Another way to formulate the model is:

$$\log [P(1)/P(0)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

When running a logistic regression in SPSS a considerable amount of output can be produced but for the purposes in this study the main interest is the calculated odds for the events that have been studied. Since odds and also log of odds are the measures being used in logistic regression these measures will be used in the analysis and presentation of results. A small recap of odds and their relation to probabilities is perhaps in place since odds are not as frequently used in Sweden as for instance in the U.S.

Probabilities can range from 0 to 1. When stating that there is a “fifty-fifty” probability for the event Q to occur, then this means that the probability that the event Q will occur is 0.5 or 50% and the probability of non-occurrence is 0.5 or 50%. If this is transformed into odds it is adequate to say that the odds are 1:1 for the event Q to occur. This implies that the odds that the event Q will not occur are 1:1. A different probability, for example 0.66 or 66% for the occurrence of Q, will produce a different odds. Then the odds for the occurrence of Q are 2:1. A probability of 0.75 or 75% gives the odds 3:1 and so forth. A straightforward way to calculate the relationship between probabilities and odds can now be formulated: $O_i = P_i / (1 - P_i)$

When reading the diagrams, which essentially is output material produced by SPSS, in the analysis it is advisable to keep in mind that the logistic regressions are not primarily used for prediction. Instead, what are being aimed at are the differences in odds between treatment groups and whether this difference is significant or not.

Analysis of Variance - ANOVA

A second tool for analysis that was used in this study was analysis of variance. It is often desirable to measure differences between treatment groups. The researcher may for instance be interested to see if there is an effect of a certain treatment. One way to go about is to measure the difference in means between the treatment group and the control group. This can for instance be done with an independent samples t-test. A problem that will surface pretty soon is though if there are many groups to be compared. The independent samples t-test is suitable for situations where the researcher is interested in whether two means differ. If there are more than two groups the researcher would have to conduct multiple pair-wise tests since comparing three or more groups at the same time is not possible with the t-test (Howell, 1997, p. 299). At the same time, conducting multiple t-tests may result in an increased risk of incorrectly rejecting a null hypothesis of no difference among groups. The problem with multiple t-tests is that as the number of groups increases, so will the likelihood of finding a difference between any pair of groups, simply by chance, i.e. when no real difference exists. Hence, the risk for making this error (a type I error or α) increases as the number of comparisons made increases (Chu, 1999). One possible solution would be to use a Bonferroni correction, which means that the significance level is divided with the number of tests conducted (Chu).

An additional and more appropriate way to go about is to use analysis of variance, ANOVA. The Anova analysis is widely used and allows to measure whether three, four or k means differ (Howell, 1997). This kind of analysis makes it redundant to conduct multiple pair wise comparisons and is thereby reducing the risks for errors related to the increased numbers of comparisons.

When using the Anova to compare multiple means we are actually investigating whether there are no differences between the treatments or if there indeed are differences. If there is a difference in one or more means then we can state, with some degree of certainty, that this is a treatment effect. That is, an effect related to the various treatments distributed to the various groups. This is the exact way that this analysis technique is being used in the analysis section.

Operationalization of Hypotheses

In order to appropriately answer the research questions posed, the hypotheses generated in the previous chapter have to be examined in some way. The hypotheses do not say much about how they are going to be tested at an operational level. They are merely statements that are pointing in a certain direction. These statements have to be tied to specific measures and in particular to parameters that can be tested statistically.

The hypotheses are operationalized by transforming the statements into parameters that can be tested. In this case it is the exponential betas of the logistic regression that are being tested, Exp B. Recall the expression stated for logistic regression: $1/e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}$.

In the following the hypotheses H1 and H8 are operationalized and formulated in the way that they will be tested. Hypotheses H2 through H7 are operationalized following the same pattern as H1. The display of H2 – H7 is therefore redundant.

In the hypotheses chapter hypothesis H1 together with the null hypothesis for H1 was formulated in the following way:

H1: A situation where respondents are exhibiting a less goal oriented surfing behavior will elicit more attention to an advertisement than what a more goal oriented surfing behavior will.

To be rejected;

[H0H1 A situation where respondents are exhibiting a less goal oriented surfing behavior will elicit equal or less attention to an advertisement than what a more goal oriented surfing behavior will.]

In the statistical model to be tested in connection to hypothesis 1, attention is the dependent variable, the dichotomous y-variable. The independent x-variable is the treatments which are treatment 3 and 4 for hypothesis H1. In the statement in H1 it is expressed that in a “situation where respondents are

exhibiting a less goal oriented surfing behavior”, which they are expected to show in treatment 3, “will elicit more attention to an advertisement than what a more goal oriented surfing behavior will”, which they are expected to show in treatment 4. The Exp B - exponential beta - is expected to be greater than 1 if there is a larger effect in treatment 3 compared to treatment 4. The input data in the model is such that; the y-variable is either 0 (for non attention) or 1 (for attention) and the x-variable is 0 (for treatment 3) and 1 (for treatment 4). The model used in the statistical test is then; $\text{Logit}(P1/P0)=a+BX$.

When hypothesis H1 is operationalized it is expressed in the following way:

H1: $\text{Exp B} > 1$

H0H1 $\text{Exp B} = 1$

The reason why H0H1 is not expressed as $\text{Exp B} \leq 1$ is because when conducting the statistical test then H1 is in fact compared with a point in H0 where no difference between treatments is assumed, i.e. Exp B for the two treatments are equal¹⁵.

The test of hypothesis 8 is a test of multiple treatments means using analysis of variance. The variable to be tested is “annoyance” that is expected to increase as attention getting increases. It is this direction of the relationship that is expressed in the hypothesis.

H8: The risk for an advertisement to be perceived as annoying will be greater when more attention getting techniques are employed in the advertisement. This would mean that a static advertisement will be the least annoying, an animated advertisement will evoke intermediate annoyance and a pop-up advertisement will be the most annoying.

It would be preferable if hypothesis H8 could be operationalized in the following way: [H8: $\mu_s < \mu_a < \mu_p$ || H0H8: All other alternatives]
(Every μ [mju] denotes a treatment mean.)

Where the s represents “static”, the a represents “animated” and the p represents “pop-up”.

What is expected is the specific relationship expressed in H8 and all other alternative relationships do not fit into the assumption hypothesized. However, since H8 cannot be directed in the way expressed in the parentheses above, the null hypothesis is in fact tested against all other alternatives and H8 being one of them, so that:

H8: $\mu_s < \mu_a < \mu_p$

H0H8: $\mu_s = \mu_a = \mu_p$

¹⁵ Even though the research hypothesis that is to be rejected (H0) states “[...] equal or less [...]” the operationalized hypothesis is expressed as only “equal” using the =-sign.

Chapter Five

Results and Analysis

In this section the collected data from the 702 experiments will be analyzed, following the procedures outlined in the method chapter. A general structure will be used when presenting the analysis. This structure can best be described as: i) a presentation of the hypothesis in question ii) a short recap of the design of the experiment in question and the treatments involved, iii) presentation of statistical output and analysis of the results.

First section

Table 5.1 and table 5.2, exhibit frequencies for the main variables. These two tables are presented to obtain a quick overview of how the respondents scored on recognition, which was the main measure and used to study the effects of the various treatments. The tables are presenting the frequencies and percentages of the respondents that recognized or did not recognize the advertisements in the respective treatments.

Table 5.1 is related to hypotheses H1 and H2 that are targeting the context dimension.

Attention Frequencies						Table 5.1
Treatment 3:	Frequency	Percent	Treatment 4:	Frequency	Percent	H1
No recognition	19	23.7	No recognition	43	53.1	*
Recognition	61	76.3	Recognition	38	46.9	*
Total	80	100.0	Total	81	100.0	*
Treatment 3:			Treatment 5:			H2
No recognition	35	25.0	No recognition	19	13.5	*
Recognition	105	75.0	Recognition	122	86.5	*
Total	140	100.0	Total	141	100.0	*

Table 5.1 Descriptive statistics for treatment 3 & 4 connected with hypothesis 1 and treatment 3 & 5 connected with hypothesis 2.

The first hypothesis is a comparison between treatment 3 and treatment 4 for the first round of data that was collected. The hypothesis expects that a lower level of internal drive will demand less cognitive resources and thereby increase attention to the advertisement. It was thereby expected that treatment 4 would have less recognition than treatment 3. In table 5.1 the results are distributed into the various cells and the expectation expressed in hypothesis 1 is in line with the raw data.

Hypothesis two is a comparison between treatment 5 and treatment 3. In treatment 5 the advertisement was embedded in a less complex context compared to treatment 3. The context that is referred to here is the difference in complexity in the Web setting or Web environment between the two treatments. The direction of the hypothesis is such that treatment 5 is expected to have a higher level of recognition than treatment 3. The figures in table 5.1 are indeed pointing in this direction.

Table 5.2 exhibits the figures related to hypotheses H3, H4, H5, H6a and H6b that are the hypotheses connected to various attention getting techniques.

Attention Frequencies						Table 5.2	
Treatment:	Freq.	%	Treatment:	Freq.	%	Rond	Hyp.
T1:			T2:			1	H3
No recognition	44	53.7	No recognition	43	50.0		*
Recognition	38	46.3	Recognition	43	50.0		*
Total	82	100.0	Total	86	100.0		*
T1:			T3:			1&2	H4
No recognition	85	52.5	No recognition	35	25.0		*
Recognition	77	47.5	Recognition	105	75.0		*
Total	162	100.0	Total	140	100.0		*
T2:			T3:			1	H5
No recognition	43	50.0	No recognition	19	23.7		*
Recognition	43	50.0	Recognition	61	76.3		*
Total	86	100.0	Total	80	100.0		*
T3:			T6:			2	H6A
No recognition	16	26.7	No recognition	62	67.4		*
Recognition	44	73.3	Recognition	30	32.6		*
Total	60	100.0	Total	92	100.0		*
T1:			T6:			2	H6b
No recognition	41	51.3	No recognition	62	67.4		*
Recognition	39	48.7	Recognition	30	32.6		*
Total	80	100.0	Total	92	100.0		*

Table 5.2 Descriptive statistics for hypotheses 3 through 6. The next last column on the right indicates at what occasion the data was collected, in the first round of experiments, in the second or in both. The last column on the right indicates the relation between hypotheses and treatments.

Hypothesis number three, which is a comparison between the two treatments, expects there to be a greater recognition for the animated advertisement compared to the static advertisement. Table 5.2 above discloses that the

differences between treatments 1 and 2 are miniscule, hence, the notion expressed in hypothesis three seem to be unsupported.

The fourth hypothesis is expecting treatment 1, a static advertisement to be less effective than treatment 3, an expectation that is in line with the figures exhibited.

In hypothesis five it is expected that the pop-up advertisement will elicit more recognition than the animated advertisement, a position supported by the figures.

The last data presented in figure 5.2 is connected with treatments 3,1 and 6. Hypothesis 6a expected a traditional pop-up to elicit more attention than a pop-up without a frame. Hypothesis 6b expected a static advertisement to elicit more attention than a pop-up without a frame. The figures in table 5.2 seem to indicate that this notion is correct.

It is worth to point out that the figures in the tables above are merely telling the distribution of data and provides a brief overview of the treatments tested in the experiments. When summarizing table 5.1 and 5.2 it can be concluded that the data, at a basic level, is pointing in the direction that the hypotheses expressed. However, the actual testing of the hypotheses is yet to be done and the result from that will be disclosed in the following.

Second section

-Attention effects of context and mode

H1: A situation where respondents are exhibiting a less goal oriented surfing behavior will elicit more attention to an advertisement than what a more goal oriented surfing behavior will.

H1: $\text{Exp}(B) > 1$

H0H1 $\text{Exp}(B) = 1$

The analysis of hypothesis H1 was performed on the first collected data set comprising of 410 respondents since one of the treatments compared was only conducted in the first round of experiments. There were two groups with 80 and 81 respondents respectively that were subjected to the two different treatments. In the test of hypothesis H1 treatments number 3 and number 4 are compared.

In treatment 3 the situation was such that the respondents were free to surf around and look and read anything they wanted to and got interested in. This mode that they were in was described as a surf mode since the respondents could surf to any destination they wanted to, inside of the Website. Treatment 3 received the A-instructions (less goal oriented). The odds of attending to the advertisement in treatment 3 were 3.211:1.

	B	df	Exp (B)	
Odds to attend in T3 compared to T4	1.290	1	3.633**	
Odds to attend in Treatment 3			3.211	(61/19)
Odds to attend in Treatment 4			0.884	(38/43)
* The value is signification at the .05 level.				
** The value is signification at the .01 level.				

Table 5.3. Output from a binomial logistic regression comparing treatment 3 and 4. In the figure calculated odds for treatment 3 and 4 are presented.

Figure 5.3 shows that the likelihood of attending to the advertisement is considerably higher in treatment 3 compared to treatment 4. In the other treatment in this analysis, treatment 4, the respondents received the B-instructions (more goal oriented). The respondents were thereby set to a search mode. The odds for attending to the advertisement in treatment 4 were 0.884:1. This means that in treatment 4 the odds was slightly lower than 1:1 to attend to the advertisement. The respondents were clearly less attentive to the stimulus advertisement in treatment 4 compared to treatment 3. When the mode or internal drive is changed from surf to search, as is the case when switching from treatment 3 to treatment 4, a radical change in the attentiveness to the advertising occurs. When analyzing the data between the two treatments in a logistic regression there is in fact a 3.633:1 odds to attend to the advertisement in treatment 3 compared to treatment 4. This result is significant at a 99% confidence level, hence the null hypothesis can be rejected. Taken together, the results support hypothesis H1 and it is reasonable to attribute the effect observed to the change of mode or task environment.

The results that have been found are following the same pattern as those presented by researchers in experimental psychology. In the words of Kahneman one could say that the mental effort or cognitive capacity allocated to the task, to search for answers, limits the possibility to allocate cognitive capacity to another task such as attending to an advertisement that is presented in the same task environment. So, when more cognitive capacity is needed in order to solve the first task, less capacity will be left for performing any other task.

Milliken and Tipper argue that attention can be used to generate expectation and to concentrate on ongoing processing demands of a primary task. Attention can furthermore be used to direct behavior selectively toward an event among competing events. However, attempting to perform too many tasks simultaneously in a certain task environment will have a negative impact on how these tasks are being performed. This would then be the effect that can be observed when comparing treatment 3 and 4 with each other and everything else being equal. In treatment 4 the task is more demanding than in treatment 3 resulting in a reduced performance in recognizing the advertisement.

Unlike, for instance, Wolfe, Mack and Rock, Yantis and others have conducted their experiments in experimental psychology, the stimuli onset asynchrony in this experiment was considerably longer and can be seen as being on a macro level. In Mack and Rock's experiments (as well as in other studies in this category) the times were generally in the range of 10 - 100 milliseconds, under an inattentional paradigm, whereas in the experiments conducted in this study the times were potentially lasting up to 345 000 milliseconds and thereby to a greater extent resembling a natural setting.

Despite the differences in stimuli presentation time, the results here follow the general idea that an internal drive has an impact on attention. It is apparent that an increased goal orientation or focus will produce a greater inhibition of information presented outside of the focal area. In line with Kahneman's observations the performance of a secondary task will be constrained by the resources needed for the primary task. Thus, there are reasons to believe that findings in psychology, on a micro level have its macro counterpart as is observed in this study.

Impact of external context factors on attention

H2: A Web environment that is less complex, with regard to its search depth, will elicit more attention to an advertisement than what a more complex Web environment does.

An experiment with treatment 5 and treatment 3 was set up focusing on an external context factor. As in the previous experiment, treatment 5 was compared to treatment 3. Hence, treatment 3 is a reference point or baseline in this case as well.

A total of 281 respondents participated in this experiment with respectively 140 and 141 individuals in treatments 3 and 5. The respondents in Treatment 5 were exposed to a different physical Web environment. It was less complex with regard to its search depth structure.

The analysis of treatment 3 and 5, see figure 5.5, is revealing that the odds of attending to the advertisement in the more complex environment, treatment 3, is 3 to 1 and that the odds of attending to the advertisement in the less complex environment, treatment 5, is 6.421 to 1. When analyzing the data using logistic regression the difference between the two treatments are 2.140:1 to attend to the advertisement in treatment 5 compared to treatment 3. The results are significant at the .05 level.

	B	df	Exp (B)	
Odds to attend in T3 compared to T5	0.761	1	2.140*	
Odds to attend in Treatment 3			3.000	(105/35)
Odds to attend in Treatment 5			6.421	(122/19)
* The value is signification at the .05 level. ** The value is signification at the 0.01 level.				

Table 5.4 Output from a binomial logistic regression comparing treatment 3 and 4. In the figure calculated odds for treatment 3 and treatment 5 are presented.

The statistical analysis shows that a change in the complexity of an environment or setting has a great impact on the attention to an advertisement. Individuals that are using an environment that is less complex, in regards to the search depth, has a higher attentiveness to the advertisement as opposed to what they had in a more complex environment.

The difference in effect that has been measured is quite large for being a difference that originates from just an alteration of the search depth of the Web environment. However, the reduction of complexity releases cognitive resources that can be spent elsewhere and in this case the advertisement will receive more attention and this is observed as an increase in the advertising effect measured. These results are in line with Krugman's findings where he is arguing that a greater opportunity to attend to an advertisement and to process information results in a positive effect on recognition. It is also an example of Kahneman's notion on how cognitive resources are released and spent elsewhere, i.e. attending to the advertisement. The support for the hypothesis that has been found is an additional example in the same vein as the previous hypothesis.

In summary, the reduced complexity in the task environment or setting has clearly had an impact on the respondents' attentiveness to the advertisement. Differences in the physical appearance of a Web site environment have resulted in a 2.140:1 odds, to the advantage of the less complex environment. The result from the analysis supports hypothesis 2 and is significant at the .05 level.

Third Section

-Advertisements and their respective attention effect

In the theoretical chapter it was reviewed what factors have been found to be effective in gaining attention. This body of knowledge paved the way for the study that has been conducted. The study comprised of three experiments and was extended with a fourth experiment in order to study some additional effects that were deemed important. The experiments of interest in this section comprise of treatment 1, 2, 3 and 6. While treatment 1 consisted of a static

advertisement with neither motion nor pop-up effect, treatment 2 consisted of an animated advertisement with a motion effect and treatment 3 consisted of an advertisement that was automatically launched three times, a pop-up, and was animated as well. Treatment 6 consisted of an advertising that appeared and disappeared (popped-up) on the Web page three times but it was not a traditional pop-up advertisement. For more details on the treatments see the method chapter.

The first hypothesis to be analyzed in this section is hypothesis 3, which is a comparison of the attention getting effect between treatment 1 and 2.

H3: An animated advertisement will produce more attention than a static advertisement.

The analysis was performed based on the data set comprising of the first 410 respondents since the treatments (1 and 2) compared in this analysis were collected in the first round. Out of these 410 respondents 168 respondents were actually receiving the treatment and thus included in the final analysis

Analysis of Hypothesis Three				Table 5.5
	B	df	Exp (B)	
Odds to attend in T2 compared to T1	0.147	1	1.158	
Odds to attend in Treatment 1			0.864	(38/44)
Odds to attend in Treatment 2			1.000	(43/43)
* The value is signification at the .05 level. ** The value is signification at the 0.01 level.				

Table 5.5 Output from a binomial logistic regression comparing treatment 2 and 1. In the figure calculated odds for treatment 1 and treatment 2 are provided.

The result from the logistic regression is presented in figure 5.5 The figure shows that there is no significant difference between treatment 1 and treatment 2. This means that there is no statistical difference at the .05 level between an advertisement that is animated compared to an advertisement that is static. Hence, no support for hypothesis number 3 is found.

This result is quite interesting considering the fact that an animated advertisement where the animation effect is constantly active, the entire treatment duration did not have a more profound impact on the recognition. Expected was that there would be a greater difference than the one observed. Reasons for this lack of difference could originate from the moderate animation that was used in the advertisement. The advertisement did not use flash, blinking or abruptly appearing objects in the animation but rather a sober and morphed transformation of the animated images.

Considering the theoretical support for the effect that animation is presumed to have on advertising and also the fact that most practitioners, as we have seen, have abandoned the fixed advertisement in favour for the animated advertisement, it is perhaps premature to conclude that animation does not have any effect. Instead, it is perhaps more appropriate to assume that the lack of significant effect observed here has more to do with a moderately animated advertisement than anything else.

Sundar and Kalyanaraman's findings pointed in the direction that animation indeed has an impact on measures such as arousal and recall and they also found that the effect increased when animation was speeded up. Consequently, it is wise to not exclude the possibility that the animation in our experiment was too moderate in order to have an effect when comparing it with the fixed advertisement.

Albeit this experiment did not provide any significant result supporting animation it is advisable to remember that the animated advertisement elicited more attention than the static advertisement, see figure 5.2. This is in line with the direction of the hypotheses however the difference in effect between the two treatments was too small to produce significant results.

Nevertheless, the results from treatment 1 and 2, when analysed in a logistic regression, do not support hypothesis 3. Therefore, in this case we cannot state that an animated advertisement produces more attention as opposed to a fixed advertisement.

H4: A pop-up (traditional pop-up, over-the-page) advertisement will elicit more attention than a static advertisement.

The analysis of hypothesis 4 was conducted based on data from the entire data set. The data for the treatments (1 and 3) compared in the analysis were collected from the first round as well as from the second round and put together as there were no significant deviations between the collected data. As a matter of fact, the differences were minimal.

Out of the 702 respondents that were part of the study 302 respondents received either treatment 1 or treatment 3. While treatment 1 was a fixed advertisement, treatment 3 was a pop-up advertisement.

When comparing the respondents subjected to the fixed advertisement, it is quite apparent that those subjected to the pop-up advertisement could, to a greater extent, positively recognize and identify the correct advertisement in the line up.

In line with the standard procedure, a logistic regression was conducted that resulted in the output found in table 5.6.

	B	df	Exp (B)	
Odds to attend in T3 compared to T1	1.197	1	3.312**	
Odds to attend in Treatment 1			0.906	(77/85)
Odds to attend in Treatment 3			3.000	(105/35)
* The value is signification at the .05 level. ** The value is signification at the 0.01 level.				

Table 5.6 Output from a binomial logistic regression comparing treatment 3 and 1. In the figure calculated odds for treatment 1 and treatment 3 are provided.

The results exhibited in figure 5.6 show that there is a significant difference in effect between the two treatments. The difference in effect is significant at the .01 level. The effect is such that the odds are 3.312:1 to attend to a pop-up advertisement in comparison with a static advertisement. These results support the notion that a pop-up advertisement will generate more attention as opposed to a static advertisement.

In the theoretical chapter it was discussed that a pop-up advertisement is creating motion by appearing from nowhere while creating a visual “disturbance” in the area it appears. This is in line with Yantis and Yantis & Jonides arguing that objects already in the visual field, for instance a static advertisement, will be part of the stable visual setting. A pop-up advertisement, on the other hand, is a new visual object in the Web environment, or the visual field, that will have a greater capacity to attract attention. The result is furthermore in accordance with research by Cropper & Evans and Smith & Goodwin who have stated that animation¹ and also flash have the potential to attract attention from one area of the screen to another. In this case, the intention is to attract attention from the reading area of the screen to the advertisement area.

The difference in effect between the two treatments is rather large since the odds are more than 3:1 in favour of the pop-up advertisement. It is perhaps not implausible to assume that this sizeable difference in effect have driven advertisers to use pop-up advertisements to such an extent.

The results from this experiment provide strong support for hypothesis 4, showing that a pop-up advertisement will attract more attention than a static advertisement.

H5: A pop up advertisement will elicit more attention than an animated advertisement.

¹ Animation in the broad sense as it was also described in the theoretical chapter. A pop-up advertisement is actually an animated advertisement even if the advertisement itself on the pop-up is a fixed advertisement.

The analysis of hypothesis 5 was conducted on data from the first 410 respondents in the data set. The treatments (2 and 3) that were compared in this analysis were collected in the first round. Out of the 410 respondents in the data set a total of 166 respondents were subjected to treatment 2 and treatment 3. While treatment 2 was an animated advertisement presented throughout the entire duration of the experiment, treatment 3 was a pop-up advertisement which had the same animated properties as treatment 2 but with the pop-up feature added.

Following the same pattern as earlier, a binomial logistic regression was run on the data set in question. The results from the analysis are exhibited in figure 5.7.

Analysis of Hypothesis Five				Table 5.7
	B	df	Exp (B)	
Odds to attend in T3 compared to T2	1.166	1	3.211**	
Odds to attend in Treatment 2			1.000	(43/43)
Odds to attend in Treatment 3			3.211	(61/19)
* The value is signification at the .05 level. ** The value is signification at the 0.01 level.				

Table 5.7 Output from a binomial logistic regression comparing treatment 3 and 1. In the figure calculated odds for treatment 1 and treatment 3 are provided.

The results in figure 5.7 reveal that the odds for attending to treatment 2 was 1:1 and the odds for attending to treatment 3 was 3:1. Finally, the odds for attending to treatment 3 compared with treatment 2 are 3:1 and at a .01 level, it can be stated that the result is significant

Consequently and perhaps not unexpectedly, a pop-up advertisement elicits more attention than what an animated advertisement elicits.

When comparing treatment 2 and 3 it is relevant to take the exposure time into consideration since it may have an impact on the interpretation of the results. In the experiment conducted to test hypothesis H5 there was an animated advertisement that was present during the six minutes that the experiment lasted. The pop-up advertisement was present during a maximum of 5 minutes and 45 seconds if the respondent did not click anywhere after the initial 15 seconds². But, the average respondent was exposed to the pop-ups considerably less than 5 minutes and 45 seconds.

After the pop-up came into the visual field it was either removed by the respondent, by clicking it away, or when the respondent continued surfing by clicking on another link on the Web site, or by clicking on an empty area on the browser to “place” the pop-up underneath the current Web browser.

² The first pop-up appeared after 15 seconds. No one exhibited this behaviour.

As a consequence, the average respondent was exposed to the traditional pop-ups less than 90 seconds. This is four and half minutes shorter than the presentation time of the animated advertisement. Despite the shorter exposure time the odds are 3:1 in favour for the pop-up advertisement. This indicates that the pop up advertisement is much more effective as a means for eliciting attention. This would for instance support Yantis and Jonides notion – that new objects in the visual field will attract attention.

Following the argumentation of Yantis and Jonides, it is reasonable to believe that the observed effect originates from the pop-up factor which would then be an “abrupt presentation effect”.

Before drawing hasty conclusions there is though, one additional aspect to take into consideration, namely the frame. The frame of a pop-up advertisement is an additional element to consider and potentially the reason why we observed these results. The frame on the pop-up advertisements that were used in the treatments added 50 pixels on the height and 25 pixels on the breadth. This means that the pop-up advertisement in fact comes with a frame that makes it 21 075 pixels or 29.2% larger than the animated advertisement. This fact has the potential to generate a size effect. At the same time it is vital to remember the fact that it is merely the frame and not the advertisement itself that is larger; the advertisement itself has remained in its original size.

The phenomenon that is being observed here is that the difference in effect may or may not, originate from the frame around the advertisement in the pop-up and not from the “abrupt presentation”. There is also the possibility that there is an effect originated from both these factors – the abrupt presentation and the frame. In addition, it may be recalled that Mack and Rock were discussing around what actually attracts attention and they were pointing at “meaning” as one factor. Can it be so that the respondents attend to the advertisement when they see the frame since it is a carrier of “meaning”?

From a Web surfer’s point of view it may be argued that an advertisement with a frame that is popping up, has a distinct meaning compared to an advertisement without a frame. The frame represents an intrusion that has a certain meaning to the user and this could be the reason why they attend to the advertisement. The meaning that it represents is most likely not a positive one, but a negative. Instead of only applying Yantis’ idea of new objects in the visual field to the described situation, it might be fruitful to also lean towards Mack and Rock’s idea of meaning.

Though, it has to be pointed out that what has been stated in the last two paragraphs cannot be deduced from any of the results from hypothesis 5. In fact, hypothesis 5 and the results from it cannot give a decisive answer to this question. However, these ideas were deemed of such an importance that a 6th hypothesis was formulated based on the reasoning in the three paragraphs above. This hypothesis demanded the study to be extended with

292 more respondents and the hypothesis is an augmentation of hypothesis 5 complementing the original hypothesis.

Before leaving the 5th hypothesis it can be concluded that the pop-up advertisement produced a significantly higher attention effect where the odds of attending to treatment 3 were 3:1 compared to treatment 2. This supports hypothesis 5.

Extending hypothesis 5

The formulation of hypothesis 6a – b was the result of ideas that resulted from pre-analysis of hypothesis 5 and was developed in order to obtain a broader understanding as well as to provide answers to the “frame effect” versus the “abrupt presentation effect” issue.

H6a: A traditional pop-up advertisement will elicit more attention to the advertisement than a FL pop-up advertisement.

Hypothesis 6a was a comparison of treatment 3 and treatment 6. Treatment 3 comprised of a setting with a traditional pop-up advertisement presented to the respondents. Treatment 6 was a FL pop-up advertisement without the traditional frame around the advertisement. A total of 152 respondents were included in this experiment.

Analysis of Hypothesis Six A				Table 5.8
	B	df	Exp (B)	
Odds to attend in T3 compared to T6	1.738	1	5.683**	
Odds to attend in Treatment 3			2.750	(44/16)
Odds to attend in Treatment 6			0.484	(30/62)
* The value is signification at the .05 level.				
** The value is signification at the 0.01 level.				

Table 5.8 Output from a binomial logistic regression comparing treatment 3 and 6. In the figure calculated odds for treatment 3 and treatment 6 are provided.

In the analysis of treatments 3 and 6 there was finally a test of the two different pop-up advertisements in order to examine their respective effects. The result showed that in this particular experiment the greatest difference between two treatments had been identified. In figure 5.8 the odds of attending to the traditional pop-up advertisement are 5.683:1 compared with the FL pop-up advertisement. The measured effect is statistically significant at the .01 level and supports hypothesis 6a stating that a traditional pop-up will elicit more attention than a FL pop-up advertisement.

The measured difference in effect between the two treatments is rather large and reflects the difference in an advertisement with a frame compared to an advertisement without a frame. The presentation time³ for the FL-pop up

advertisement was in fact longer on average as opposed to the traditional pop-up advertisement. Hence, it can be stated with certainty that despite the fact that the traditional pop-up advertisement has a shorter presentation time than the FL pop-up advertisement it still generates a higher recognition effect.

Given the fact that there is such a difference in effect between the treatments and that both advertisements tested in this experiment were pop-up advertisements, the measured difference cannot originate from a “pop-up effect”, at least not to a pop-up effect that has to do with the core advertisement. In other words, if the main effect that is measured would originate mainly from a pop-up effect then there should not be such a great difference between the two treatments considering that they are both pop-ups. This is contrary to what many practitioners and researchers believe and it is common to attribute the higher effect of pop-ups to their pop-up properties, i.e. the abrupt presentation. A notion which is not supported by the results found here. Given the results, it seems as if this position has to be abandoned.

If it is not “abrupt presentation” that is producing the effect of pop-up advertisements, then what is? Usually, the entire effect in a pop-up advertisement is ascribed to the fact that it is popping up. If that is incorrect, then what is actually taking place?

The difference in effect between the two treatments must originate from something other than the popping up factor. The traditional pop-up advertisement has a frame. This frame can in fact be seen as potentially having at least two properties; a size related property, since it is larger and a frame-meaning related property, since the frame of a pop-up advertisement may carry a certain kind of meaning. This “meaning” is most probable a negative one as the majority of respondents, 91.6%, have indicated that they strongly dislike pop-up advertisements.

A problem when analyzing the data is that the size related property and the frame-meaning related property are intertwined in one and the same physical property. The frame is related to the increased size and vice versa. However, what is considered to be striking is that the two pop-up advertisements being compared were identical in size in regards to its message and image. Merely adding the frame to the advertisement in treatment 3 increased the attention. It was almost a 6 to 1 odds to attend to the advertisement! That is a very powerful frame. It seems highly unlikely that the entire effect increase measured would originate from the additional size of the advertisement’s frame in treatment 3. Merely increasing the size of an advertisement by 29% has not produced this kind of results in other studies.

³ The FL pop-up advertisement was presented for 90 seconds while the average presentation time for the traditional pop-up advertisement was less than 90 seconds. Despite an exposure time that was, on average, shorter for the traditional pop-up advertisement, it still was more effective than the FL pop-up advertisement.

There is one final aspect to control namely, the effect of clicking away the pop-up. This could perhaps provide an explanation of the power of the frame. An additional logistic regression was run to look into this question.

Control		Table 5.9	
	B	df	Exp (B)
Odds to attend in T3 compared to T6	-0.474	1	0.622
* The value is signification at the .05 level.			
** The value is signification at the 0.01 level.			

Table 5.9 Output from a binomial logistic regression comparing treatment 3 and 6. In the figure calculated odds for clicking away the advertisement in treatment 3 and treatment 6 are provided.

Adding the “Click away ad”-variable into the regression does not contribute with any additional explanation of the frame issue. Whether or not the respondent has clicked away the advertisement has not had any significant effect. This could instead be seen as support for the ideas discussed earlier namely, that the frame when coming into the visual field of the user is a carrier of meaning, signaling that an intrusion or breach is in progress and calling for the attention of the user. If the user is clicking away the pop-up advertisement this act does not necessarily result in an additional increase of the attention to the advertising message. Instead, this activity could be seen as a response to the visual breach in order to stop the intrusion. However, the frame and its meaning have already captured cognitive effort and visual attention that has been directed to the advertising message.

Summarizing these findings, it seems plausible to state that the adding of the frame has a very strong attention capturing effect and is considerably increasing the attention. Given the results, it seems also reasonable to abandon the idea that the abrupt presentation is the main factor behind the increase in attention to pop-up advertisements. This is however, not to state that it does not have any effect. Nevertheless, effort should be focused in finding an answer to the exact effect of the frame-meaning concept and control for the size factor.

Finally, the results from the experiment show that a traditional pop-up advertisement elicits considerably more attention than what a FL pop-up advertisement does. The results are significant and support hypothesis 6a.

The next hypothesis compared two advertisements of equal size. The assumption of hypothesis 6b was that if 6b is correct then the abrupt presentation for the FL pop-up advertisement plays a minor role when comparing it to the static advertisement. The reason why the static advertisement is expected to elicit more attention is because it has longer exposure duration. If the abrupt presentation, on the other hand, is strong it should compensate for the shorter exposure time for the FL pop-up advertisement and the attention to the FL pop-up advertisement should be greater than that for the static advertisement.

H6b: A static advertisement will elicit more attention to the advertisement than a FL pop-up advertisement.

Hypothesis H6b was a comparison of treatment 1 and treatment 6. Treatment 1 comprised of a setting with a static advertisement presented to the respondents. Treatment 6 was a FL pop-up advertisement without the traditional frame around the advertisement.

In the experiment a total of 172 respondents were distributed in the two treatments. 92 respondents were subjected to treatment 6 and 80 respondents were subjected to treatment 1. These 172 subjects were taken solely from the second round of experiments.

Analysis of Hypothesis Six B					Table 5.10
	B	df	Exp (B)		
Odds to attend in T1 compared to T6	0.676	1	1.966*		
Odds to attend in Treatment 1			0.951		(39/41)
Odds to attend in Treatment 6			0.484		(30/62)
* The value is signification at the .05 level.					
** The value is signification at the 0.01 level.					

Table 5.10 Output from a binomial logistic regression comparing treatment 1 and 6. In the figure calculated odds for treatment 3 and treatment 6 are provided.

In table 5.10 the logistic regression is revealing that there is indeed a difference between treatment 1 and treatment 6. The result indicates that the odds of attending to treatment 1 compared to treatment 6 is 1.966:1. The difference between treatments is significant within the .05 level. An advertisement such as in treatment 1 is hence more efficient than the properties that were in effect in treatment 6.

It is worth to recall that treatment 6 was the FL pop-up advertisement and that treatment 1 was the static advertisement which so far has produced the lowest effects that has been measured. Thus, the FL pop-up was less effective than the static advertisement. How could this be possible? In order to understand this contradiction we have to trace it backwards and to attribute the effect to where it originates from.

That a FL pop-up advertisement has a lower effect as opposed to a static advertisement is connected with the fact that the FL pop-up advertisement does not come with a frame when it is popping up. The effect of the FL pop-up is that of a traditional pop-up minus the frame. Thus, the abrupt presentation is what is left. If there had been a strong effect related to the popping up of the advertisement then the FL pop-up should have produced higher recognition measures. Especially since the FL pop-up in this experiment was compared

to the advertisement that has shown the lowest effects so far, i.e. the static advertisement. Thereby it should be possible to rule out the abrupt presentation effect as a very powerful tool of attracting attention to an advertisement, at least the part that is dealing with the popping up. This result from hypothesis 6b is providing indirect support even for hypothesis 6a even though the current experiment did not contain a traditional pop-up advertisement.

From a theoretical perspective it can be stated that the task environment in which the two advertisements appeared was scanned by the respondents. Their main focus was reading the editorial text that they were occupied with. The respondents also distributed some attention to other areas, or tasks, besides the main task. Some of this attention was distributed to the advertisements. However, the FL pop-up advertisement received less attention on average than the static advertisement, which can be explained by the reduced amount of duration time it was present in the task environment. From the method chapter it is known that the FL pop-up was present 1/4th of the time the static advertisement was present. The FL pop-up had of course to be absent for a certain amount of time in order to be able to “appear abruptly”. That is the reason for the shorter exposure time.

Thus, the reduced recognition effect that has been observed from the FL pop-up is originating from a reduced exposure time, when comparing with the static advertisement, which gave the subjects less possibility to attend to the advertisement in the task environment. Given the fact that the FL pop-up was less efficient it seems as if a potentially powerful pop-up effect did not out balance the effect from the shorter presentation time of the FL pop-up advertisement. This indicates a pop-up effect that is not so strong.

In summary, in this experiment it was found that a static advertisement elicits more attention than a FL pop-up advertisement. The result is significant at the .05 level, which supports hypothesis 6b.

After investigating the attention getting techniques it seems as if the initial assumption was correct. That is, a static advertisement is the least efficient, the animated advertisement is more efficient than the static advertisement and the pop-up advertisement is the most efficient. However, the explanation of why in particular the pop-up advertisement is efficient was somewhat surprising and investigated by using a FL – frameless advertisement. Thereby the effect of the frame could be isolated and studied in greater detail. The finding indicates that it is not the abrupt presentation that generates the greatest effect but rather the frame, which the Web user attends to when it comes into the visual field. The Web user attends to the frame because of its visual and recognizable characteristics.

Modeling attention to Web advertising

When taking the results from the hypotheses that have been analyzed this far and compare them with the presented models⁴ in the theoretical chapter one can argue that the attention construct can be slightly developed. How to elaborate the attention construct was developed in chapter 2 and 3 and visualized in figure 3.1.

The idea presented a contextual dimension, a propellant in the shape of attention getting techniques and a filtering mechanism filtering input. The results from hypothesis 1 mentioned in the above stated analysis indicate that differences in internal drive represented as either an induced search behavior or induced surf behavior which is impacting the attentiveness to an advertisement. This could be reinterpreted as the permeability of a filtering mechanism where the permeability is dependent upon the task environment the advertisement is placed in. The result from hypothesis 1 supports the context dimension of the presented model.

Similarly, the results from hypothesis 2 in the analysis above indicate that differences in the environmental complexity, represented as high or low complexity in search depth structure, has an impact on the attentiveness to an advertisement. Again, this could be reinterpreted as the permeability of the filtering mechanism where the permeability is dependent upon the environment the advertisement is presented in. A more complex environment is decreasing the permeability of the filtering mechanism whereas a less complex environment is increasing the permeability of the mechanism.

Hypotheses 1 and 2 are directly studying which effect the internal drive/goal directed behavior and complexity in the task environment has on attention. Specifically how limited cognitive resources are being focused on in a task environment as well as how cognitive resources are being reduced for secondary tasks. In this process there is an interaction between the attentiveness, the complexity and demand from the context.

Hypotheses 3 – 6b that were investigating the differences between various kinds of attention getting techniques on the Web has indeed shown that there is an extra dimension, when comparing to print. This extra dimension can propel the advertisement and thereby enhance attention to it. This propellant is visualized as an extra box attached to the advertising message. One could perhaps look upon it as the second stage boosting the advertising message's capability to penetrate the filtering mechanism. When the booster is attached to the advertising message the odds of attending increases. Below, the model is presented with the features that are influencing attention.

⁴ Any of the hierarchical advertising models.

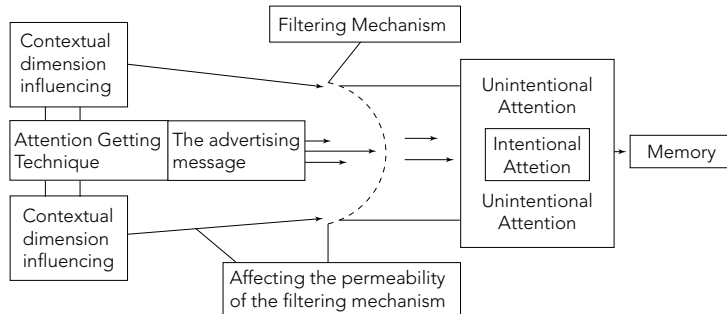


Figure 5.1 A model of attention in Web advertising.

In summary, the proposed model is the result of the hypotheses tested. Results from the analysis are supporting the hypotheses, which in turn can be translated into the model described in figure 5.1.

Fourth Section

-Measuring advertising on the Web

The seventh hypothesis is of importance for three reasons. First of all, its outcome is central in the sense that it will reveal whether there is an effect from advertisements in a Web context when measured in the same way as Krugman (one of the forerunners in advertising measurement) and many others prescribes. This has of course already been established indirectly through the previous hypothesis but in hypothesis 7 this will be tested explicitly and in a context where “how to measure” is in focus. This test may seem redundant but just because something seems to be obvious does not mean that it should not be studied. Therefore, and secondly, it is important to establish whether there is an effect beyond the click through effect and how large it is. And third, we have also seen that practitioners have used and still use this measure to estimate the impact of an advertising campaign and consequently also use the click-through measure for pricing matters. It is of importance to understand whether this is an adequate practice or not.

H7: A Web advertisement will generate more respondents being aware of the advertisement as measured by the recognition measure than it will generate clicks on it.

Treatment 3 was used to study this issue. 140 respondents in this treatment were subjected to the question whether they did not click or indeed clicked on the advertisement with the purpose to read more about the advertisement. The respondents were asked to answer this question if they had recognized the advertisement.

Of the 140 respondents merely 5 or 3.6% made an attempt to click on the advertisement in order to read more about the product. This indicates that the intention to click on advertisements in a group of individuals is indeed very low.

The results regarding the click-through frequency are in accordance with other studies indicating that the click-through rate is very low. When comparing the above result from the click-through measure with the other two measures employed, a slightly different picture appears.

For the second measure, recall, 15.7% or 22 out of 140 respondents were able to correctly recall the brand name of the advertisement. This figure is more than four times as high as the click-through frequency calculated.

For the third measure and also being the main measure, recognition, the percentage of respondents being aware of the advertisement was radically higher than the click-through frequency. Out of the 140 individuals 75% or 105 respondents correctly identified the advertisement in question. See table 5.11.

Measuring Advertising		Table 5.11
Measure:	Percentage:	
Click Through	3.6%	
Recall	15.7%	
Recognition	75%	

Table 5.11 Results from the different measures

The scores from the recall and recognition measures support the direction of hypothesis number 7. That is, that the stimuli will generate more respondents being able to recall or recognize the advertisement than it will generate clicks on the advertisement. There is obviously an effect by the advertising that is measured by recall and recognition, which is not taken into account by the click-through measure.

When running a chi-square test on the data set and comparing the click through frequency with the main measure, recognition, we are receiving the following result:

Table 5.12 a)	N	Mean	Std Dev.	Min.	Max.
Recognition	140	0.7500	0.43457	0.00	1.0
Click Through	140	0.0357	0.18624	0.00	1.0

Table 5.12 b)	Recognition	Click Through
Chi-Square a*	35.000	120.714
Df	1	1
Asymp. Sig.	0.000	0.000
a*. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 70.0		

Table 5.12 a & b. Chi-square analysis, equal frequency assumed.

In figure 5.12 a) the variables “Recognition” and “Click Through” are contrasted. Merely 3.57% (3.4 when all treatments are included) of the respondents intended to click on the advertisement whereas 75% (59% when all treatments are included) of the respondents could positively recognize the same advertisement. In figure 5.12 b) a test of proportions is conducted indicating, not surprisingly, that the two groups are not equal. The Chi-Square test does not say anything about the direction of the disproportion but figure 5.12 a) reminds us that the recognition variable is considerably higher than the click-through variable.

The magnitude of the dissimilarity between click-through and recognition results in a significant difference. That is, there are significantly more respondents that have recognized the advertisement than those intending to click on the advertisement. By this the null hypothesis can be rejected. This supports H7.

In connection to the three points that was highlighted in the beginning of the analysis of H7, the following can be stated:

First, there is indeed an effect of advertising on Web sites and it can be measured using the recognition measure.

Secondly, there is obviously an effect beyond the click trough effect and this effect is rather large making it appropriate to use recognition as a measure. It also indicates that it may be inappropriate to use click-through since the advertising effect is seriously underestimated.

⁵ Recognition is the main measure since it is the most sensitive measure of the measures employed. See Krugman and the method chapter.

Thirdly, as a consequence of the second point it can be expected that when the click-through measure is used as a mean for pricing, advertisers' will get an under priced service since the entire effect is not measured. It is of course possible to use the click-through effect as a basis for pricing and state that for "every click-through there should be roughly another 20 individuals being exposed to the advertisement". This is though, most likely an assumption and method that will be inaccurate since there will be differences in results that are related to the various advertisements, the specific Web site and the context etc. Consequently, it is advisable to use the recognition measure more frequently in this kind of research if accuracy is to be achieved.

Collateral effects of Web advertising

Web advertising can indeed be powerful when using some of the attention getting techniques that has been studied. In the theory, some of these techniques were shown to have downsides. Advertising on the Web can sometimes elicit unwanted effects such as annoyance or a feeling of intrusion. These effects could potentially be harmful if neglected by publishers and advertisers. Consequently, the potential collateral effects of attention getting techniques will be tested;

H8: The risk for an advertisement to be perceived as annoying will be greater when more attention getting techniques are employed in the advertisement. This would mean that a static advertisement will be the least annoying, an animated advertisement will evoke intermediate annoyance and a pop-up advertisement will be the most annoying.

H8: $\mu_s < \mu_a < \mu_p$

H0H8: $\mu_s = \mu_a = \mu_p$

Every μ [mju] denotes a treatment mean.

Before testing hypothesis 8 descriptive statistics from a rank order variable will be studied. At the end of the on-line questionnaire all respondents were asked to rank how annoying they thought static, animated and pop-up advertisements to be. The result from that question is provided in the figure below.

Ranking of Perceived Annoyance

Table 5.13

	Frequency	Percent	Cumulative Percent
Ranking of pop-ups. "Rank Ad 1":			
1 - the most annoying	579	82.5	82.5
2 - intermediate	41	5.8	88.3
3 - The least annoying	82	11.7	100.0
Total	702	100.0	
Ranking of Animation. "Rank Ad 2":			
1 - the most annoying	42	6.0	6.0
2 - intermediate	573	81.6	87.6
3 - The least annoying	87	12.4	100
Total	702	100.0	
Ranking of static ads. "Rank Ad 3":			
1 - the most annoying	81	11.5	11.5
2 - intermediate	88	12.5	24.1
3 - The least annoying	533	75.9	100.0
Total	702	100.0	

Table 5.13 Ranking of perceived annoyance in animated, static and pop-up advertisements.

In figure 5.13 a clear pattern is visible. In "Rank Ad1" 82.5% of the respondents are stating that pop-up advertisements are the most "annoying"⁸ out of the three advertisements that they were asked to rank. 81.6% of the respondents stated that the second most "disturbing" advertising type is animated advertisements. Finally 75.9% of the respondents ranked static advertisements as being the least "disturbing" out of the three alternatives that were presented to them.

These descriptive results are in line with what is stated in hypothesis H8. More attention getting techniques are upsetting the respondents in such a way that they consider the advertisements as being disturbing. Still, the information in the above table is not a hypothesis test but rather an observation of the distribution of data and the results here gives a picture of what the respondents believe to be disturbing.

The second statistical analysis performed is an ANOVA which is based on the respondents self estimation of how disturbed they were by the advertisements when they were actually exposed to the various advertisements. A total of 149 respondents were exposed to different levels of attention getting techniques in the different treatments and their perception of how annoying it was is displayed below.

⁶ The Swedish word "störande" was actually used but can be translated into the English word "annoying".

Analysis of Hypothesis Eight				Table 5.14	
Comparison of how annoying the advertisement was (I) treatment and treatment (J)		Mean Difference (I-J)	P-value	Treatment	Mean
1	2	-0.460	0.334	1 (Ad1)	0.40
	3	1.021*	0.020	2 (Ad2)	0.86
2	3	1.482**	0.001	3 (Ad3)	-0.62
* The mean difference is significant at the 0.05 level. ** The mean difference is significant at the 0.01 level. ANOVA - LSD					

Table 5.14 Left side: Multiple comparisons of treatment means in an ANOVA ranging from treatment 1 through 3. Right side: Annoyance score in different treatments.

In figure 5.14 the numbers show that any assumption that all means are equal can be rejected since there are significant differences between the means. At the same time the treatment means on the farthest right shows that the hypothesis will not be supported. The animated advertisement, treatment 2, has been perceived by the respondents as the least annoying out of the three, score 0.86. The second most annoying is the static advertisement, score 0.40, and the pop-up advertisement was perceived as the most annoying advertisement, score -0.62. In H8 it was hypothesized that a static advertisement will be the least annoying, an animated advertisement would be second most annoying and a pop-up advertisement will be the most annoying. This is not supported by the results from real encounters with the various advertisements.

From the ANOVA, see the left part of figure 5.14, it was found that there is a non-significant difference between treatment 1 and treatment 2 but the direction of the relationship is the opposite to what was hypothesized. There is a significant difference between treatment 1 and treatment 3 and also between treatment 2 and treatment 3. The differences are significant at a 0.05 level. The direction of the relationship is in accordance with what was hypothesized between treatment 1 and 3 and between treatment 2 and 3.

How can this result be interpreted? Previous studies by for instance McGalliard, Nielsen and Spool have found animation sometimes to be annoying and fatiguing. Other attention getting techniques such as flash has been shown to elicit negative user attitudes towards even the Website in question. Relating this to the results from figure 5.14 it can be argued that the static advertisement obviously was not so disturbing while the pop-up advertisement was perceived as disturbing. It can be rationalized that the static advertisement was not disturbing since it was not calling for attention to such a great extent since none of the common attention getting techniques was employed. In the same way it can be stated that the pop-up advertisement was indeed annoying since it was using the most attention getting techniques.

However, in this picture described above the animated advertisement clearly deviates from what was expected. In fact, the result deviated even from what the respondents themselves thought when asked to rank the advertisements

from the least annoying to the most annoying. Why is that? Bruner is arguing that using more graphic images and animation can add a complexity to the Web site that makes it more attractive and enhances the perceived entertainment. Another potential explanation may be derived from Sundar and Kalyanaraman's findings that indicated that animation indeed has an impact when animation was speeded up. It is possible that the animation in treatment number 2 was not perceived as disturbing since it was moderate and slow. If the animation speed would have been increased the results could have been different. Regrettably, there will be no decisive answer to these questions here, further research is obviously needed.

The results from the analysis of hypothesis 8 shows that the respondents own opinions are pointing in the direction that was hypothesized. Nonetheless, when an ANOVA was run on data where the respondents had been exposed to real advertisements with different attention getting techniques the results did not point in the same direction.

In short, the null hypothesis was not rejected since not all treatment means followed the expected sequence, only treatments 1 and 3 did. Hypothesis 8 is thereby not supported.

Control

The main area of the analysis has now been covered. The remainder of this section has the purpose to control for gender differences and furthermore to examine if the conducted experiments are a good representation of real world experiences.

In the previous analysis gender was not taken into consideration. A reason why gender has not been highlighted is because the treatments were specifically designed⁹ in such a way that any potential gender differences would be minimized. With this said we turn to an analysis of gender effects.

⁹ See the method chapter

Cross Tabulation of Gender and Recognition

Table 5.15

Gender * Recognition			Recognition 0,00	Recognition 1,00	Total
Gender	0,00	Count	155	225	380
	Female	Expected count	155,4	224,6	380,0
		% within gender - "Kön på respondent"	40,8%	59,2%	100,0%
		% within "Recognition"	54,0%	54,2%	54,1%
	1,00	Count	132	190	322
	Male	Expected Count	131,6	190,4	322,0
	Total	% within gender - "Kön på respondent"	41,0%	59,0%	100,0%
		% within "Recognition"	46,0%	45,8%	45,9%
Total		Count	287	415	702
		Expected Count	287,0	415,0	702,0
		% within gender - "Kön på respondent"	40,9%	59,1%	100,0%
		% within "Recognition"	100,0%	100,0%	100,0%

Table 5.15 Cross tabulation of gender and recognition.

In figure 5.15 there is a cross tabulation of gender¹⁰ and recognition. In the analysis all the 702 respondents that participated in the experiment are included. Gender 0 represents female and gender 1 represents male. On the recognition axis 0 represents inattention and 1 represents attention. The information exhibited tells that out of the females 40.8% did not attend to the stimulus and 59.2% did indeed attend to the stimulus. Of the males 41.0% did not attend to the stimulus and 59% did attend to the stimulus. In total 40.9% did not attend to the stimulus and 59.1% attended to the stimulus.

It is now possible to take the proportions of for instance the females where 40.8% were not attending and 59.2% attending and use this proportion to test whether there is an equal or deviating proportion in males, when it comes to their attention measured as recognition. This test is conducted as a traditional chi-square test of proportions, see table 5.16.

⁸ "kön på respondent" is Swedish for gender.

Chi-square Test of Proportions Between Genders

Table 5.16

	Observed N	Expected N	Residual
1.00	132	131.4	0.6
2.00	190	190.6	-0.6
Total	322		

	Recognition
Chi-Square a*	0.005
Df	1
Asymp. Sig.	0.944
a*. 0 cells (0.0) have expected frequencies less than 5. The minimum expected cell frequency is 131.4.	

Table 5.16 Chi-square test of proportions between genders.

Since the chi-square value of 0.005 does not exceed the critical value of 3.84 for 1 degree of freedom the assumption cannot be rejected that there are differences between the proportions of females and males in their attention patterns. Hence, it has to be assumed that there are no differences in gender when it comes to their attention, an assumption that is heavily supported by an ocular control of figure 5.15.

Initially, the very reason why no gender differences were expected rested upon Mack’s notion, that there seem to be no gender differences when it comes to attention capture, at least at short exposure times. Her result rests upon more than 5000 individual experiments and in line with other researchers in the field gender differences are infrequently expected. On the other hand, a treatment such as the ones used in this study could of course be designed with a content that could be biased in a way so that the advertisement were to be more appealing for females than males or vice versa. This could potentially skew the results. Nonetheless, with the absence of gender differences this possibility can be ruled out.

A final issue of interest, from a transferability perspective, is whether or not the experiments conducted were seen as a good representation of the real world. The endeavor to seek an answer to this question is usually not an easy one. Though, in this case the opportunity was taken to get an estimation of this measure from those who participated in the experiments. All 702 respondents were instructed to tell their opinion about how similar or dissimilar that they perceived the experiment to be in comparison with their real world experiences.

Web experiment's resemblance to real world web sites.		
N	Valid	702
Mean		2.18
Std. Deviation		0.970
Variance		0.941

Table 5.17 The Web experiment's similarity/dissimilarity to Web sites outside of the laboratory

The respondents perceived the experiments to resemble a real world Web site to quite an extent. On a seven point likert scale ranging from -3 to +3 the mean is 2.18 (see figure 5.17) with a standard deviation of 0.97. That the mean is 2.18 indicates that the data is heavily skewed to the positive side of the scale. That is, the respondents thought the experiments to be realistic.

Response alternatives on "Webres"	Frequency	Percent	Cumulative Percent
-2	4	0.6	0.6
-1	17	2.4	3.0
0	17	2.4	5.4
1	85	12.1	17.5
2	267	38.0	55.6
3	312	44.4	100.0
Total	702	100.0	

Table 5.18 Distribution of responses on the Web resemblance variable

When looking at figure 5.18 it is noticeable that 82.4% of the respondents thought the experiments to have a very high degree of resemblance with the real world. Another 12.1% thought the experiments to have a resemblance higher than neutral. The cumulative percentage for these three categories mentioned so far is 94.5%. Only 2.4% thought the experiments to be slightly dissimilar compared to the real world. A mere 0.6% or 4 respondents considered the experiments to have little similarity with the real world. Even so, it is worth to note that none of the 702 respondents ticked "-3" in the questionnaire.

Thus, out of the 702 respondents, not one single respondent considered the experiments to have very little resemblance with the real world. One can then argue that in terms of transferability from the experiments conducted here to the outside social reality, it is, based on the results reported here, reasonable to state that these experiments have traits in common with the outside reality. The respondents have obviously not perceived the setting that they were put into as unrealistic vis-à-vis the outside world.

To have established a solid link of transferability between experiment and outside society can be perceived as one of the many factors that contribute to the meaningfulness of the results. This state is preferable when generalizing the results achieved in the laboratory to the outside world.

Chapter Six

Conclusions and Further Research

In this final chapter the findings will be integrated into a coherent whole. Conclusions are to be formulated based on the studies that have been conducted to provide answers to the research problems.

Attention to advertising on the Web

In the first study two contextual dimensions that have the potential to influence advertising effectiveness have been investigated. The first of these dimensions was the external Web environment or context that the Web surfer is interacting with. The second dimension was described as different levels of goal orientation or internal drive guiding the behavior exhibited by the Web user. The two broad types of behavior that was studied were a search behavior (high level) and a surf behavior (low level).

The contextual dimensions were studied using two experiments where the performance of the inserted advertisements was measured. The findings show that an increase in goal orientation significantly reduced the attention to an advertisement. This also meant that, a decrease in goal orientation significantly increased the attention to an advertisement. One could perhaps expect that the difference in attention to an advertisement would be rather low since it is merely a question of altering the context somewhat. The analysis showed, to the contrary, that the difference in effect between the two modes of goal orientation is large. When the goal orientation was low the attentiveness to the advertising was 3.633:1 compared to when the goal orientation was high. This sizeable effect shows the importance of taking context dimensions into consideration in advertising.

The results also demonstrated that an increase of the Web environment complexity significantly reduced the attention to an advertisement. Furthermore, a decrease of the Web environment complexity resulted in a significant increase of the attention to the advertisement. The difference in effect between the two external Web environments was smaller than in the case of goal orientation. Even though it was smaller it is still substantial enough to be deemed important. In the less complex Web environment the attentiveness to the advertising was 2.140:1 compared to the more complex Web environment. An increase, or decrease, in effect of that size is valuable to most advertisers.

The conclusion of the results and analysis of the experiments is that there indeed are differences in effect on attention to advertising between different contexts. The differences in effects are substantial and affect advertising more than merely in a marginal way. As a consequence, the environment hypothesis that Appel is referring to is being supported by both dimensions that have been studied.

The reason why these context effects are being observed can be explained in the following manner; the more demanding a task is, the more cognitive resources needed for that task. Thereby performance of a secondary task, i.e. the advertisement, will be constrained by the resources needed for the primary task. What is being observed in the experiments is the work of the attention system that is selectively distributing attention to areas of interest whereas unattended information is impeded or attenuated, in order to prevent information overload. The inhibitory processes play a vital role in selective

attention. Phrased in a somewhat more straightforward way; attempting to perform too many tasks at once in a certain task environment has a negative impact on how these tasks are being performed. The more tasks there are to perform the more the advertising will suffer.

When the respondents had a higher degree of goal orientation or when the Web environment was more complex they inhibited the advertising message to a greater degree. When cognitive resources were released it resulted in higher levels of attention to the advertising. The essence of these findings is visualized in figure 6.1.

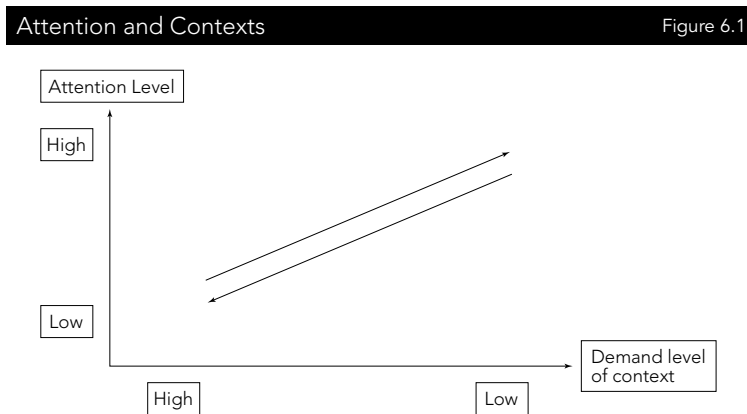


Figure 6.1 Level of attention to advertising as a consequence of the demand structure of the context.

Since the effects of the editorial environment in print media have not been found to be this powerful it is not implausible to conclude that the higher level of interactivity of the Web media as such is the reason why these powerful effects are being observed. When the environment is not very complex or when the user is mindlessly surfing around, then cognitive resources are relatively “unused” even though the Web has a higher level of interactivity. Though, the big difference is when the context becomes demanding. In that case cognitive resources are starting to be used at a level that has a great impact on advertising.

It is thereby possible to convincingly state that the editorial environment indeed affects advertising and that this effect is a consequence of a greater difference between low and high levels of interaction between environments on the Web than in other media. In broadcast, for instance, the individual does not have to take action, to click, to find, to actively screen out and so forth. Instead, the individual is more passively being fed with information that cannot be interacted with.

Practical implications of the findings of the research are that the complexity of a Web site is an important factor when designing features that has an impact on a Web site's complexity. However, complexity comes in many shapes and is not limited to the search depth structure that was specifically tested here. It is also important to consider the goal orientation of the Web surfer. It ought to be kept in mind that Web surfers will exhibit different levels of internal drive depending on what Web site they are visiting. On a Web site where primarily a search behavior (more goal oriented) is displayed by its visitors, it is reasonable to expect less attentiveness to advertising than on Web sites where an exploratory surf behavior (less goal oriented) is common.

These findings are important for both Web publishers and advertisers. Publishers may wish to make their Web sites as attractive as possible so that they can communicate to their customers, i.e. the advertisers, that their advertising will have a great impact when "aired" on the Web site. Advertisers on the other hand may want to find Web sites where they know that their advertising impact will not be constrained by a context that is too demanding, rendering their advertising ineffective.

Attention to advertising differs between attention getting techniques

In the second study that was conducted three different attention getting techniques, which are frequently used on the World Wide Web, were investigated. These techniques are; the static advertisement, the animated advertisement and the pop-up advertisement. When looking at the percentages of subjects in each group that attended to the different attention getting techniques it is obvious that highest attention rate was elicited from the pop up advertisement followed by the animated advertisement and last, the static advertisement.

The static advertisement was expected to be the weakest, a notion affirmed by the first round of experiments. The effect was however not significantly lower than an animated advertisement but slightly lower. This may be explained by the animation speed. In previous studies an increase of animation speed produced a greater effect and a decrease of the animation speed reduced the advertising effect in subjects. The animation speed in this study was rather low and might explain the non-significant result.

The static advertisement and the animated advertisement were both significantly less effective in comparison with the pop up advertisement. Initial results were interpreted as if the pop up effect was the major reason for this difference. It seemed as if the pop-up effect increased the attention to an advertisement so that the odds rose from 1:1 to 3:1 to attend to the advertisement. These initial results were however challenged by a second round of experiments.

A special advertisement was designed, namely a frameless pop-up advertisement, so that the effect of the frame could be measured independently and thereby control for the abrupt presentation. The experiment revealed that there is indeed a major difference between the pop-up advertisement with a frame and the pop-up without a frame. The difference is an astonishing 6:1 and therefore it is not merely a marginal effect that has been observed. Since we controlled for the abrupt presentation (the pop-up effect) it is possible to conclude that the main effect of a traditional pop-up advertisement does not originate from its abrupt presentation but from its frame that distinguishes it from other advertisement types on the World Wide Web. This conclusion is perhaps surprising but is not really far fetched when the concept of “meaning” is brought into the equation. Theoretically, it can be derived that pop up advertisements may represent an unwanted intrusion. Thus, when the pop-up advertisement pops up on the screen it is a carrier of negative meaning and thereby attracting attention.

When visiting a Web site the attention system is processing visual stimuli presented on the screen. Some of the information that is considered as interesting will be focused upon while less prioritized information will be left unattended or put on hold to be processed at a later stage. When the user is searching or surfing around in this Web environment, something special is needed to capture the user’s attention. It ought to be something that is meaningful enough to be prioritized by the attention system to the point that attention is diverted to it. Abrupt presentation had an effect but not as much effect as abrupt presentation paired with a frame. The frame has properties that are recognizable for the vast majority of Web surfers. When the frame is coming into the surfer’s visual field it is a carrier of negative meaning signaling that an intrusion or breach is in progress. Attention is thereby reprioritized to deal with this breach. The conclusion must be that there is a spill-over effect from the frame to the advertisement. The frame and its meaning attracts attention to it and in doing so attention will also be distributed to the advertisement.

That the pop-up is perceived in a negative way has been observed in both the pilot studies as well as in the later parts of the analysis where the respondents indicated that they disliked the pop-up advertisements the most. This supports the interpretation that the pop-up advertisement is a carrier of negative meaning.

Still, there are behaviors of Web users that have not been tested in the experiments that were carried out. The effect of clicking away the pop-up was found to be non-significant but may hold secrets that ought to be studied further. It has to be remembered that actively clicking-away the advertisement by clicking on the cross of the appearing pop-up advertisement is merely one way to get rid of it. Another way to click away the pop-up advertisement is to just click somewhere else on the screen where the mouse is at the moment. By doing so, the pop-up advertisement will disappear and be placed “underneath” the Web browser which is currently being used. This particular behavior was not studied.

Nevertheless, this research has taught that pop-up advertisements are effective, not mainly because of its abrupt presentation, but because of the properties of its frame.

The above mentioned findings are of interest to both advertisers and Web publishers. For advertisers it is central to understand how attention getting techniques can be used to attract attention. Using animation and in particular pop-up advertisements are evidently an effective way to improve advertising effectiveness. That the frame has a meaning that is powerful can be used to develop and design new types of advertisements where this new understanding is used to the benefit of the advertiser.

For the Web publishers it is important to be able to have Web sites with the capabilities to offer a range of attention getting techniques. In the first pilot study where 100 domestic and international Web sites were screened there were Web sites that did not offer this possibility at all. In some cases they could only offer static advertisements. However, the general development has already taken steps towards greater levels of animation but some have become more restrictive with pop-ups.

For the Web publishers it may be worth to notice the negative emotions that offensive attention getting techniques seem to stir up. Findings connected to these issues will be brought up under the headline “Collateral effects of attention getting”. First, a model of attention to Web advertising will be discussed.

A model of Attention to advertising on the Web

In addition to obtaining an answer to how context as well as attention getting techniques are affecting attention to advertising, a model describing attention to advertising was put forward. The model seeks to further understand how attention to Web advertising works and how it can be described.

From the model that was developed and tested it can be concluded that advertisements, at a basic level, can either be attended to or not attended to. Furthermore, the attention can be either intentional or unintentional. The results show that the level of attention to advertising is partly dependent upon the interplay between the complexity of the task environment and the level of difficulty of a task. The level of attention, as we have seen, is also dependent upon the attention getting technique that is being used. This is portrayed in the model below.

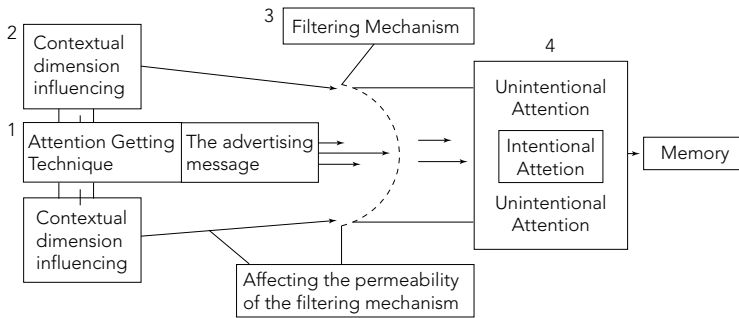


Figure 6.2 A model of Attention to Web Advertising.

A final description of the model in figure 6.2 based on the results from the three experiment rounds conducted tells us that;

Attention getting techniques [1] on the World Wide Web is an additional dimension compared to print media. It is intimately connected to the advertising message and has the power to boost the advertising message in such a way that attention to the message is heightened. This means that the advertising input is not filtered out as easily as when this boost is not added.

Similarly, the contextual dimension [2] in which the advertisement is placed is a potentially powerful influencer that can impede attention. It is reasonable to state that the contextual dimension is influencing the filtering mechanism in such a way that the advertising message can either be filtered away or pass through, depending upon how much cognitive resources are tied up by the context dimension. The filtering mechanism [3] which is filtering input is an intrinsic part of the attention system but is displayed as shown in figure 6.2 to visualize its impact on advertising. Lastly, the advertising message comes to our attention [4] either through unintentional attention or intentional attention and is subsequently placed in memory.

One general insight from the model is that it becomes obvious that at best the advertiser can expect full attention except most often the situation does not permit the message to reach the attention of the audience. The contextual dimension which is affecting the filter can forcefully tune out or attenuate attention as could be observed. The context, the attention getting, the advertising message, the filtering mechanism and the attention are intrinsically related in a delicate way. Increasing understanding of their relationship helps comprehend how to design advertising and the Web environment in which the advertising is placed so that higher levels of attention to advertising can be achieved. Framing the concept of attention as is modeled in figure 6.2 emphasizes that it is problematic to use models that are positioning the attention construct separated from the other main constructs in an advertising model.

For instance, Thorson, Chi and Leavitt's models may serve as an attempt to fit data to a model but given the inherent nature of attention it seems as if those models are not entirely accurate. Attention has to precede any other effect such as attitude towards the brand, attitude towards the advertisement or purchase intention. If there is no attention, intentional or unintentional, there can hardly be other effects either.

Finally, the model presented provides an elaborated view of the attention construct in advertising. Even though the model described in figure 6.2 has been developed for Web advertising it is not necessary to restrict it to how attention to advertising works on the World Wide Web. The Web was merely a means to test how various factors can influence attention. The model may be used to expand understanding of attention to advertising at large or to advertising situations that are similar.

Collateral effects of attention getting

It is crucial to capture the consumers' attention. However, from the consumer's perspective it is not always appreciated that ambitious advertisers are flashing, blinking, rotating or covering the visual field with advertisements. Notwithstanding how interested the consumer may be in the advertised product, over use or abuse of attention getting techniques may counterstrike.

From the results in the analysis it is evident that powerful attention getting techniques such as pop-up advertisements are not appreciated among Web users. Upon asking respondents to state their opinions on which advertisement they liked or disliked the most they answered that they liked the static advertisement the most (or perhaps disliked it the least). The animated advertisement came in on a second place while the pop-up advertisement was the most disliked. This implies that the use of powerful attention getting techniques is associated with a risk of upsetting consumers. Other studies have pointed out similar results together with the fact that emotions at play may be powerful. Given the purpose of the majority of advertisements and commercials produced, that is, to present the product or company in a favorable way and to induce positive attitudes in the consumer, it might be counterproductive to use intruding attention getting techniques.

When the respondents were in fact exposed to the advertisements and gave an estimate on how disturbed they had been by the different advertisements, a slightly different picture surfaced. The most pleasant advertisement was the animated advertisement followed by the static advertisement. The advertisement that was thought of as least pleasant was the pop-up advertisement. In the analysis it was argued that the animation used in the animated advertisement was rather modest, which perhaps could serve as an explanation for why it was perceived as not that much disturbing. Bruner has argued that using more graphic images and animation can add a complexity to the Web site that makes it more attractive and enhances the perceived entertainment. This could mean that adding the animation to the advertisement made the Web experience

slightly more vivid and appealing since the animation was not aggressive. Neither was it intrusive akin the pop-up advertisement. However, it ought to be remembered that the difference between the static and the animated advertisements was small and non-significant.

The most disturbing advertisement was the pop-up advertisement which is in line with results from the opinions that the respondents expressed. The pop-up advertisement is clearly a source of dislike and at times it can evoke even stronger negative feelings.

It is in this context realistic to state that the pop-up advertisement is a carrier of negative meaning. A meaning that attracts the consumer's attention to it and the advertising message that comes along with it.

The findings regarding the collateral effects of attention getting techniques is crucial information for advertisers and Web publishers. Too aggressive attention getting techniques might harm the Web site where the advertisement is placed making the Web surfer visiting the Web site to refute the advertisement and worse, to stay away from the Web site altogether. This negative consequence is naturally not appreciated by Web publishers. To avoid this phenomenon, Web publishers should opt for routinely evaluating the advertisements that are placed on their Web sites so that advertisements that may be harmful to the Web site image can be evaded.

From the advertiser's point of view, the conclusions may be somewhat ambiguous. Albeit an advertiser uses aggressive attention getting techniques it cannot directly be concluded that the effect will be solely negative.

This might be surprising, but the reasoning is based on the following logic; aggressive attention getting may evoke short lived negative feelings but, on the other hand, repeating the message may influence liking, which is a positive feeling. Thereby, when the consumer is about to purchase a product in the store the aggressive attention getting may be forgotten whereas the familiarity and liking may persist. Thus, the consumer may recognize the brand in the store, while not recalling under what circumstances she was exposed to the message.

Consequently, it may not be altogether harmful to use pop-up advertisements. If the additional effect is added to the equation, that is the 3.633:1 effect increase that is produced by a pop-up compared to a static advertisement, then it seems as if the pop-up is not such a bad alternative after all. These aspects have to be considered before dismissing this very efficient attention getting technique.

In the experiments two types of pop-up advertisements were studied. Beside these two, there are other types of pop-ups that may be perceived as even more intrusive. A few respondents that participated in the study spontaneously mentioned that a certain kind of pop-up, covering the entire screen paired with intensive flash, was particularly annoying and that they would not buy

products that are advertised in such a way. In such extreme cases it may be wise to reduce the attention getting to prevent consumers from boycotting the company's products.

In summary, a moderate use of attention getting techniques will hardly jeopardize business by inciting the consumers, in particular if no offensive screen covering pop-up effect is being used. In the experiment that was conducted the animated advertisement was perceived to be more pleasant as opposed to both the pop-up and the static advertisement, which may be due to the positive effects of modest levels of vividness. Under "normal" use of attention getting techniques there are presumably few individuals that would actively remember how they received an advertising message in order to avoid that product when they are in the store, at the point of purchase. Hence, the advantages of moderate attention getting techniques seem to outweigh potential disadvantages.

Since there are additional attention getting techniques that have not been studied here, this seems to be an area for further research. That is, to determine in greater detail how different types or levels of attention getting techniques affect the attitudes towards the Web advertisements. And most of all, how respondents act 15, 30 or 60 days after the exposures when the memory of "how" the product was advertised has faded somewhat while still being able to recognize the product and the brand.

When conducting further research, it could be valuable to add the repetition aspect as well since it is thought to have a positive influence on liking as Mandler, Nakamura and van Zandt and Monahan, Murphy and Zajonc, have argued.

Measuring Advertising on the Web

In the previous it has been elaborated around ways to measure advertising effect on the Web. Whether or not there indeed is an effect of advertising on the Web beyond the click has been argued around. If there has ever been any doubt before, it can now be stated with certainty that advertising really works on the World Wide Web. It does work, not only to generate clicks in order to redirect surfers to sponsor pages, but also to generate attention to advertising messages that are presented straight on the Web page that is being used. This effect can be measured by using some of the main measures that have been used by advertising researchers for more than half a century now, namely recall and recognition. It is often forgotten that click-through frequency has never before been used as a measure of advertising effect. The reason why it has not been used before is of course because the click-through measure came along with the Internet technology and cannot be used in other kinds of media¹.

The practice of using the click-through measure can have negative implications. A potential problem is that when studying the advertising effects the researcher

¹ Interactive TV is perhaps an exception.

may need a sample that is huge. For instance, if a practitioner in market research wishes to ask questions to 200 respondents that have clicked on a Web advertisement then at least 200 times 28 $[100/3.57]= 5600$ people have to be approached². Khermouch and Lowry reported that sometimes as few as 1 out of 1000 individuals clicks on a Web advertisement. In such a case the market researcher would need 200 000 individuals (or perhaps even 400 – 600 000 due to individuals declining to participate) to achieve 200 respondents. In such a case it becomes more difficult for the advertiser to conduct advertising research and evaluations. Researchers studying click-through behavior will have to use large samples in order to obtain a sufficient amount of individuals that have clicked on an advertisement.

In the experiment conducted there were roughly 20 times more respondents who recognized an advertisement than respondents that clicked on the advertisements. This is a huge difference which is entirely neglected when results from the click-through measure are blindly used without considerable restrain and caution. Given the results, it is questionable whether the click-through measure is an adequate measure when measuring advertising effect.

Using click-through as a measure of advertising effect seems to be an inappropriate procedure where the researcher (or market researcher) is at risk of missing a great proportion of the achieved effect. Remember Krugman's statement, "the nature of effective impact of communication or advertising on low-involvement topics, objects, or products consists of the building or strengthening of picture-image memory potential. Such potential is properly measured by recognition, not by recall." The use of the click-through measure obscures to an even greater extent the factual effect than what recall does since it is an even less sensitive measure than what recall is.

An example may perhaps shed some light on the issue. Assume that a large and well known corporation wishes to run a large Web advertising campaign. The company is a producer of low involvement consumer goods and is using advertising to quite some extent. When they have been airing commercials in the previous, using recall and recognition as measures, the scores have been 15 and 45 % for the respective measures in the target group. When running the Web advertising campaign they score of 0.1% on the click-through measure.

This is a very low figure and a potential conclusion by the company's market researcher is that Web advertising does not have any effect. However, considering that the company is selling and marketing a low-involvement product that is already well known and has been using advertising extensively in the past there is little reason for the Web surfers to click on their advertisements, unless there is some revolutionizing news provided.

² In the experiments conducted 3.57% of the respondents tried to click on the advertisement.

From the results in this study it can be concluded that measuring with the click-through method is risking obscuring the entire effect of the Web advertising.

If the click through measure is not an accurate measure of advertising effects³, is it good for anything else then? In the particular experiment that was conducted here, the click-through measure measured “something” that was roughly 1/20 of the recognition score. The question is what this “something” is. A plausible answer is that the click-through method is perhaps measuring some level of instant interest or perhaps a derivation of purchase intention. It is perchance not far fetched to assume that those who are clicking on an advertisement have a greater interest in the product than those not clicking on it. It could be so that those clicking are at the beginning of the buyer decision process and intend to buy the advertised product within short or perhaps in that very instant when they clicked (if it is a product that can be bought over the Web). These speculative notions are though beyond the scope of this research and can be a topic for further study.

Pricing methods on the Web

How Web advertising is being measured has implications for the pricing methods employed for Web advertising. Since the click-through measure is considered as inappropriate there ought to be consequences for pricing models that are based on the click-through measure. The pay per click pricing model is such a pricing method.

A limitation with the pay per click method is that it is merely taking into account one twentieth of the delivered effect if compared to a method that would be based on for instance recognition. The pay per click method is thereby risking to severely underrate the “amount” of communication delivered when calculating the price. What is charged for, by the Web publisher, is only the tip of the ice berg while the major communication effect is left unnoticed and not charged for.

This is to the benefit of the advertiser who is buying advertising space and getting a greater effect delivered than what is being paid for. What is a benefit to the advertiser is in this case clearly disadvantageous for the Web publisher, selling advertising space.

It is of course possible to use the pay per click pricing method and increase the price charged by multiplying with a certain factor. This is in fact practiced by the industry and a click-through is generally more expensive than an exposure. The problem though, is that the click-through frequency will differ between products, brands and industries making it difficult to calculate how high or low the factor should be for a certain product.

³ Remember that the recognition measure is an appropriate means to measure at least the initial part of the various advertising effects. To achieve a more complete picture of various communication effects there are additional measures, which have been elaborated around earlier.

High involvement products, for instance, are more likely to have a higher click-through frequency than what low involvement products have. Products that are sold and distributed on the Web are also likely to have a higher click-through frequency than what products sold outside the Web have.

An additional problem with the pay per click pricing method is that the publisher will take some of the risk that the advertiser usually takes. That this is the case is not apparent to everyone. As we have seen in this research there are indeed differences between the effects of advertisements even when it is the same advertisement that is being used. When we add the difference in effect between a really good advertisement and a really bad advertisement it becomes obvious that the price will be higher for a good advertisement compared to a bad advertisement. Under the assumption that the good advertisement evokes more click-through.

An advertiser who is really ingenious would of course design an advertisement which elicits as little click-through as possible, to reduce costs, while at the same time having the properties to communicate and build the brand as much as possible. An advertisement that would satisfy these requirements to some extent could be an advertisement that is only showing the company's logo. Then it would be dull enough to deter Web surfers from clicking on it while at the same time building and reminding of the brand. If this idea is stretched even further the somewhat paradoxical consequence could be that the advertiser actually states "don't click here" as opposed to the click-evoking advertisement shown in figure 2.1. It is in this sense that the publisher takes a great risk when using the pay per click pricing strategy.

To introduce the same kind of pricing method in print, outdoor or broadcast media would almost certainly be received with grave skepticism by the industry. It is difficult to imagine a situation where a publisher willingly would provide advertising space and be paid on the basis of the number of consumers showing up in the store the next day.

Along with the pay per click, another measure, pay per view, has evolved. Based on the analysis and conclusions of the click-through measure and the recognition measure, the pay per view method seems to be a more appropriate way to measure and price advertising on the Web. Pay per view is in fact a measure of exposures. This means that a single individual will be counted as one "view" when being exposed to the advertising message. Thereby the advertiser has had one chance to capture the consumers' attention and to present the product being advertised⁴.

⁴ Whether the individual user has seen the advertisement or not is in turn dependent on many factors such as the attention getting technique employed, goal orientation or mode that the consumer is in and also Web site complexity, which have been studied in this research. The advertisement itself is of course also an important factor to take into consideration.

The pay per view method is an appealing method that coincides with the recognition measure. If 59% of all respondents, as in this study, were able to recognize the product being advertised then there has been quite a communication effect achieved. It is therefore highly questionable to use a pricing method that only accounts for 3.4% of the total population exposed or 5.75%⁵ of the recognition effect achieved.

A third kind of pricing method, pay per time unit, PPTU, is rapidly increasing its popularity. The pay per time unit is perhaps the pricing method that is the most similar to the pricing methods used in traditional media such as print and broadcasting. It is conceivably a natural development that when owners of Web sites come to understand their “true” advertising value then it is easier to use straightforward methods such as the pay per time unit.

In summary, the Web advertising pricing methods have developed during the few years that the Web has been around. The pay per click has been widely used but if accuracy is to be achieved and risk is to be eliminated then the pay per view pricing strategy may be a better alternative. Though, when the World Wide Web becomes even more established and settled than what it is today and when the major Web sites know their value, pricing methods such as the pay per time unit may be employed to a greater extent due to its straightforward properties. It is a method that is easy to comprehend and most of all; it is being used in both broadcast and print. There is of course the possibility to develop and use hybrid pricing methods based on the above mentioned techniques and perhaps others not yet developed.

Future research

Along with the findings throughout this research, additional questions have surfaced. These issues have been beyond the scope and purpose of this study but can be a starting point for future research. The main issues are summarized in the following.

One of the areas of discussion has been how to measure advertising on the Web. The question arose whether the click-through measure could be seen as an expression of an instant interest or an intermediate measure of purchase intention. It is reasonable to assume that those individuals clicking on an advertisement are perhaps somewhat more interested to purchase the product, as opposed to those not clicking. By clicking on the advertisement, the consumer has exhibited an interest to learn more about the product. This interest may be interpreted as an intermediate expression of a purchase intention or as a construct close to purchase intention. This interest should not be confused with the interest that can be found in, for instance, the AIDA model. There is a slight difference in that the “interest” expressed through click-through is based on a registered action, the click-through, whereas interest in terms of the AIDA

⁵ $3.4/59.1=0.0575$

model is more often a subjective estimate of how interested a respondent is of a given product for instance. To study this issue could provide insights into what is behind the click-through behavior and what the intentions are when clicking. Further research into this area could provide a “Web advertising”-hierarchy of effects model.

The attention getting aspect of Web advertising has been intriguing with surprising findings. The properties of the pop-up advertisements and in particular the properties of the frame and what kind of attention effects it evokes should be elaborated and scrutinized in further detail. An additional issue is to analyze in greater detail the behavior of Web users when exposed to Web advertising. Responses such as mouse movements and clicking behavior may hold clues to consumers’ behavior when a pop-up advertisement or a similar advertisement is launched into the visual field. In connection to this it is worth to study a wide of animation levels as well as different kinds of animation. This could provide further insights into the area of attention getting techniques on the World Wide Web.

Finally, the proposed model was tested with a number of hypotheses. In doing so it was possible to show that the context and attention getting technique indeed has a great impact on advertising. Given the Web’s unique features there are other context factors that can affect advertising. If these properties have equally powerful impact on advertising effectiveness (which we do not know before it is studied) then it is urgent to augment this research so that other context factors can be added in order to achieve a more complete picture. Further research about other contextual dimensions could result in an advertising road map describing how various context factors affect attentiveness to Web advertising. Such a map would be instrumental in enhancing the effectiveness of Web advertising.

The research conducted in this dissertation has indeed been exciting. Yet, during the course of the project many new questions have arisen related to this subject. Consequently, this is a beginning and a stepping stone to further research in this very interesting area. As this is being written a new study is being conducted to further develop the understanding of attention to advertising.

Uppmärksamhet för Reklam

Svensk sammanfattning

World Wide Web är ett interaktivt media vars karaktärsdrag avviker från traditionell media. Dessa karaktärsdrags inverkan på reklam har inte studerats ingående på World Wide Web. Med beaktande av World Wide Webs unika egenskaper betraktades det som betydelsefullt att studera hur uppmärksamhet för reklam påverkas av olika kontexter såväl som uppmärksamhetsattraherande tekniker.

Studien genomfördes med intentionen att utveckla förståelse för hur reklam i olika Webbmiljöer uppmärksammas samt hur uppmärksamhet för reklam varierar mellan olika uppmärksamhetsattraherande tekniker som används inom Webbreklam. I anslutning till detta föreslogs och testades en modell vilken beskriver hur kontext och uppmärksamhetsattraherande tekniker påverkar uppmärksamhet för reklam. Vidare undersöktes huruvida genomklickning eller klickfrekvens är ett adekvat mått på reklameffekt. För att besvara problemställningarna utvecklades ett teoretiskt ramverk. Åtta hypoteser formulerades härledda ur det teoretiska ramverket. För att testa hypoteserna och modellen togs en experimentdesign fram. Tre undersökningar utfördes där 702 individuella experiment genomfördes.

Resultaten från studien visar att Webbuppgiftsmiljön verkligen påverkar uppmärksamhet för reklam. Ökad komplexitet eller en mer krävande uppdragsmiljö fordrar mer kognitiva resurser vilket i sin tur producerar lägre uppmärksamhetsnivåer för reklamen. Reducerad komplexitet, å andra sidan, frigör kognitiva resurser vilka kan användas till annat. Högre uppmärksamhetsnivåer för reklamen observerades i fallet med reducerad komplexitet. Detta bekräftar också egenskaperna hos den föreslagna modellen; att genomsläppligheten hos filtreringsmekanismen är beroende av t ex nivån på målorientering och komplexiteten i uppgiftsmiljön, dvs komplexiteten hos en given Webbsida.

Studien visade vidare att högre nivåer av uppmärksamhetsattraherande tekniker i Webbannonser ökar uppmärksamheten för annonserna. En intressant upptäckt är att pop-up annonser är effektiva främst tack vare egenskaper hos den ram som omger annonsen snarare än som en konsekvens av pop-up effekten, dvs den abrupta presentationen. Slutsatserna visar att det finns en inneboende kognitiv betydelse vilken visuellt kommuniceras genom den omgivande ramen och som genererar den ökade uppmärksamheten för pop-up annonser.

Resultaten visar att klickfrekvens är en inadekvat enhet när man avser mäta reklameffekt. Klickfrekvensmättet underskattar avsevärt den marknadskommunikationseffekt som har uppnåtts. Misstolkning av klickfrekvensen kan felaktigt leda till slutsatsen att Webbreklam har en obetydlig effekt jämfört med andra typer av reklam. Följaktligen, att använda klickfrekvens som bas för prissättning är olämpligt om precision eftersträvas, såvida inte god kunskap om potentiella konsekvenser finns tillgängliga och att dessa tas i beaktande.

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Appendix

Appendix A
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Appendix A

What is the Internet?

Internet has come to affect and to an even greater extent will affect the terms for business activities in a future to come. The Internet has shaped and will continue to re-shape every industry with companies and it will do so in a variety of ways¹. The development that Internet as a means for communication has undergone during more than three decades of existence has been rapid and revolutionary. In order to get a brief picture of the origin of the Internet a short recap is in place.

Internet is often perceived as a fairly new phenomenon, though it is not. In the late sixties and in the beginning of the seventies the access to computer capacity was indeed scarce. Scientists and researchers were seeking to share the limited amount of computer capacity through networks linking different computers to each other. Through the establishment of a computer network, ARPANET² of the US department of defence, the desired division of computer capacity could be attained. During the first fifteen years of Arpanet's evolution there were only a few nodes in this network. These nodes comprised primarily of various American research institutes. The growth rate of this network was quite modest and in 1983 there were altogether some 113 institutions connected to the Arpanet³. During 1983 and afterwards the expansion of this network came to be more evident as a consequence of the establishment of a common protocol, TCP/IP⁴, the coming into being of World Wide Web⁵, the cancellation of restrictions towards commercial traffic⁶. In the middle of the eighties Arpanet was divided into two different networks, Milnet for defense purposes, and the other part for the scientific world. Further more companies and research institutes in other parts of the world had begun connecting into networks using TCP/IP which contributed to its widening. The new and commonly accepted term for this network became Internet and in late 1990 the last pieces of the former Arpanet was gone⁷.

The Internet has thereafter become the home for all kinds of users such as companies, private persons, institutions, authorities etc and will more and more be domesticated and a natural part of all kinds of human activities.

¹ Internet som strategiskt kommunikationsverktyg, p.9

² Advanced Research Projects Agency NETwork

³ Internet som strategiskt kommunikationsverktyg, p.15

⁴ The use of TCP/IP was broadly initiated in 1983

⁵ WWW is a means for hypertext linking established in 1989

⁶ the cancellation of restrictions towards commercial traffic occurred in 1991

⁷ Internet som strategiskt kommunikationsverktyg, p.15

In the early days of the Internet companies of all kinds charged into this new world of business wanting to get a share of “the new golden era”. Expectations were high, least to say, and there were even those who argued that a new economy was emerging. Unfortunately there was also a lack of understanding for the characteristics of the Internet and the effects on relations and consumer behavior that it has brought about. The challenges that the Internet has posed to companies have to a certain extent shown to be too difficult to cope with. We have witnessed that managers too heavily have relied on trial and error which in turn has proved to be a too arbitrary as well as uncertain way of doing business.

There are reasons to believe that practitioners as well as scholars had an exaggerated reliance on technology and Internet to solve all kind of problems and with little effort generate huge revenues. In retrospect it is easy to conclude that expectations were too high and knowledge too little. The Internet may be a versatile concept but nonetheless it is not the answer to everything.⁸ However, to be able to continue forward and to let business evolve together with the Internet researchers has to provide some of the fundamental knowledge on how to do business on the Internet.

Appendix B

INSTRUCTION “A” (low goal orientation)

“Hello, My name is

You are now about to participate in an experiment in informatics and social science. You will now receive some instructions for the experiment.

I want you to take a seat next to the computer and the screen in this office room. On the screen you will soon be able to see a completely ordinary news web site. I want you to use this news web site to read and look at whatever information you perceive as interesting and fun. You are free to choose to look at and read any of the information on the web site.

Use the mouse to click on text and images to read further.

Use the backward button on the web browser in order to go backwards.

You may not use any other web sites than the one presented on the screen.

When I say “start”, you can click on the link “Click here” in order to start reading the news. Read in the same way as you are used to when reading the

⁸ There are numerous examples of this such as customers who refuse to buy due to ‘new and strange’ behavioral patterns, difficulties in prolonging customer relations as a consequence of a seemingly new era of customers that do not feel any loyalty toward companies, difficulties in reaching the customers, “customer fatigue” etc. There are too numerous problems to list here that a company using the Internet could encounter but common for them all is that greater knowledge of them will be of help so that mistakes might be prevented.

news and read and look at whatever you think is fun and interesting. After a while I will say “stop” and then I want you to turn around on your chair and stop looking at the screen. I will then give you a questionnaire to fill out.

If you would bump into any problems with the computer, the web page or anything else, please call for me and I will help you to get going again. My name is so please just call for and then I will come and help you.

Do you have any questions?
You have understood the instructions?

Well, then you can take your seat now, please.

Please start now!”

For the treatment where the effect of an internal drive was to be studied an alternative instruction was given to the respondents. It was designed as follows:

INSTRUCTION “B” (high goal orientation)

“Hello, My name is

You are now about to participate in an experiment in informatics and social science. You will now receive some instructions for the experiment.

I want you to take a seat next to the computer and the screen in this office room behind you. On the screen you will soon be able to see a completely ordinary news web site. I want you to use this news web site to search and find the answer to 4 questions that are stated on the paper that are attached to the screen. You will find the answers to the questions by searching and reading in the articles on the news web site.

Use the mouse to click on text and images to read further.
Use the backward button on the web browser in order to go backwards.

You may not use any other web sites than the one presented on the screen.

When you have taken your seat you will first be given time to read the 4 questions that I have mentioned. Thereafter I will say “start”. Then you may click on the link “Click here” in order to start searching for the answers to the questions. When you have found all the answers to the questions you can continue reading the news at the news web site until I tell you to stop. When I say “stop” I want you to turn around on your chair and stop looking at the screen. I will then give you a questionnaire to fill out.

If you would bump into any problems with the computer, the web page or

anything else, please call for me and I will help you to get going again. My name is so please just call for and then I will come and help you.

Do you have any questions?

You have understood the instructions?

Well, then you can take your seat now, please.

(30-45 seconds pause to allow the respondents to read through the 4 questions)

Please start now!”

Debriefing

After the experiment some of the respondents first participated in the “Exit Poll” and thereafter all respondents were debriefed. Down below you can read the debriefing.

“The information that you have seen on the news web site just now is not entirely in accordance with the reality. The information that you have seen on the web site is real information mixed with fictitious information so it is advisable to not believe all what you have seen and read.

Furthermore, please, do not talk about or tell about the content in this experiment to anyone during the next 4 weeks since more than 600 students at Umeå University will participate. It is preferable if those who will participate do not know in advance about the content of the experiment since this will in fact ruin the experiment. The cost for this study is above 1 million Swedish crowns so it is good if this study can be conducted in a correct and undisturbed way.

Do you have any questions?

Thank you very much for your participation in this study and I really appreciate that you took the time to come here and help us with this research.”

THE ORIGINAL SWEDISH VERSION OF INSTRUCTION “A” (low goal orientation)

The instructions in original text and language:

Hej, jag heter...

Du ska nu få delta i ett experiment inom informatik och samhällsvetenskap. Du kommer nu att få några instruktioner för att genomföra experimentet.

Jag vill att du sätter dig vid datorn och bildskärmen i rummet här intill och där kommer du att kunna se en helt vanlig nyhetswebbsida. Jag vill att du använder just denna nyhetswebbsida för att titta på och läsa det som du själv tycker verkar vara roligt och intressant. Du är helt fri att välja vad du vill läsa och titta på.

Använd musen för att klicka på text och bilder som du vill läsa om.
För att gå tillbaka kan du använda bakåtknappen på webbläsaren.
Du får inte använda andra webbsidor än den som redan finns presenterad på bildskärmen.

När jag säger "Starta" så klickar du på länken "Klicka här" så får du börja läsa nyheterna. Läs på det sätt du brukar läsa nyheter på och läs och titta på det du tycker är roligt och intressant. Efter en liten stund säger jag "Avbryt" och då vänder du dig om på din stol och titta ej mer på bildskärmen. Jag kommer då att ge dig ett frågeformulär som du får fylla i.

Om du får något problem med datorn, websidan eller något annat så ropa på mig så kommer jag och hjälper dig att komma igång igen och jag heter..... så ropa på så kommer jag.

Har du några frågor?
Du har förstått instruktionerna?
Då kan du sätta dig ner vid datorn.
Starta nu!

THE ORIGINAL SWEDISH VERSION OF INSTRUCTION "B" (high goal orientation)

Hej, jag heter...
Du ska nu få delta i ett experiment inom informatik och samhällsvetenskap.
Du kommer nu att få några instruktioner för att genomföra experimentet.
Jag vill att du sätter dig vid datorn och bildskärmen i rummet här intill och där kommer du att kunna se en helt vanlig nyhetswebbsida. Jag vill att du använder just denna nyhetswebbsida för att söka och finna svaret på de 4 frågor som finns på papperet som sitter fasttejpade på bildskärmen. Du finner svaren på frågorna genom att söka efter och läsa i de artiklar som finns på nyhetswebbsidan.

Använd musen för att klicka på text och bilder som du vill läsa om.
För att gå tillbaka kan du använda bakåtknappen på webbläsaren.
Du får inte använda andra webbsidor än den som redan finns presenterad på bildskärmen.

När du har satt dig ned kommer du att få en liten stund på dig för att läsa de fyra frågorna som jag har nämnt. Därefter säger jag "Starta" och då klickar du på länken "Klicka här" så får du börja söka efter svaren på frågorna. När du har hittat alla svaren på frågorna kan du fortsätta att läsa nyheterna på nyhetswebbsidan tills dess att jag säger "Avbryt" och då vänder du dig om på din stol och titta ej mer på bildskärmen. Jag kommer då att ge dig ett frågeformulär som du får fylla i.

Om du får något problem med datorn, websidan eller något annat så ropa på mig så kommer jag och hjälper dig att komma igång igen och jag heter..... så ropa på så kommer jag.

Har du några frågor?

Du har förstått instruktionerna?

Då kan du sätta dig ner vid datorn.

(30-45 sekunders paus för att ge tid för att läsa igenom de 4 frågorna)

Starta nu!

THE ORIGINAL SWEDISH VERSION OF THE Debriefing

Efter experimenten deltog en del av respondenterna först i “Exit Poll” och därefter blev alla respondenter debriefade. Här nedan kan du läsa debriefingen.

“Den information som du har sett på nyhetswebbsidan alldeles nyss är inte alltigenom överensstämmande med verkligheten. Det är verklighet blandad med fiktivt material så det är bra om du tar det du har sett och läst med en nypa salt.

Var också vänlig och prata inte eller berätta om innehållet I detta experiment för någon under de närmaste 4 veckorna eftersom mer än 600 studenter vid Umeå Universitet kommer att delta och då är det bra om dessa inte får reda på innehållet I förväg eftersom experimentet då förstörs. Hela studien kostar lite över 1 miljon kronor så det är bra om den kan genomföras så korrekt och ostört som möjligt.

Har du några frågor?

Tack så mycket för din medverkan i den här studien och jag uppskattar verkligen att du tog dig tid att komma hit och hjälpa oss med vår forskning.”

Appendix C

Brief description of Pilot study I, Web sites and web advertising

The first pilot study comprised of two parts. The first part was aiming at finding out how web sites look like and also how web advertising is being done and in specific how web advertisements on the web look like. The second part was a round of interviews with 20 students that agreed to participate in a 10 minute interview.

Web advertising has changed dramatically the last few years due to increased web creativity and also technological advances such as bandwidth, more advanced software etc. The ways in which advertising messages are presented on the web are numerous and are changing little by little In order to capture some of the most recent ways of advertising a study of web advertising was

done. The reason for this was due to the fact that even the latest literature on advertising on the web did not cover all the new techniques found on web pages. The study also gave a picture of the most visited home sites and what kind of advertising that was displayed on these web sites.

The study was undertaken during a period of six weeks. 100 domestic as well as international websites were included and studied with regard to what kind of advertising material that could be found on them. All commercial content were registered and categorized. The websites were found by taking the largest Swedish web sites and also some prominent international web sites. The results of this study are presented here below.

The “international” web sites were heavily biased towards web sites with content in English. Consequently, American, English, Canadian and Australian web sites dominated the selection. This could though be considered as a minor flaw since these countries with the US in the front can be considered as forerunners in the development of advertising techniques. The bias mentioned above should not constitute a problem since this is a study about advertising.

The Swedish selection of web sites was slightly more advanced compared to the english-american web sites. Due to the wide spread use of broad band or high speed Internet in Sweden there are greater possibilities for Swedish web advertising designers to use more complex and resource⁹ consuming visual designs.

The web pages were studied by registering the number of advertisements presented on the web page and what kind of advertisements that were used. The advertisements were also categorized with respect to their functional design and vividness ranging from fixed banners to full motion video with interactive features.

In the study the average web site were found to have the following properties: It used white as the major color and blue as secondary color; had 3 text areas, 0.6 scroll lists, scroll areas with a length of 2.1 screen lengths, 10 button areas, 42.5 buttons on average, white buttons, 2.4 headline levels, 3.2 headlines, 1 search area, 64.8 links, 6.5 pictures on the index page, 1.07 advertising areas, 2.8 static banners on the page (Ad1), 1.24 animated banners (Ad2), 0.07 (Ad3) traditional ads, 0.16 pop-ups (Ad4) and 0 (zero) full motion commercials (Ad5). The ad sizes were on average 61035 pixels large for Ad1, 61753 pixels for Ad2, 31006 pixels for Ad 3, 215146 pixels for Ad4 and 0 pixels for Ad5.

On average 0.5 advertisements were placed in the top margin, 0.92 were placed in the left margin, 0.69 were placed in the center and 2.15 were placed to the right.

⁹ Bandwidth

The information above and even more detailed information were used to develop the websites and the web advertisements for the experiments.

The second part of the pilot study was aiming at identifying how Internet users use the World Wide Web and furthermore to study whether the studied websites could be categorized in some logic way. There are already some examples of broad categorizations of web sites that have been done. These have, however, had a different aim than this study making them not quite suitable here.

The second part of the study was conducted in the following way:

20 respondents were participating in the study. They were chosen through a convenient sample (i.e. students) and screened so that it was sure that they could be classified as Internet users¹⁰ where non-Internet users were screened out (no one was screened out since all matched the criteria). This resulted in a group of individuals with a minimum of 18 months and a maximum of 10 years of Internet experience. These 20 respondents¹¹ were interviewed about their Internet use and what kind of web sites that they usually visited during a normal week or month. They were asked to tell about how they use the World Wide Web and also to give their view on web advertising and the like.

One point of the study was to categorize web sites. The categorization here was basically done based on the perception of the respondents. The respondents were chiefly asked what kind of web site categories that exist and also what kind of web site advertisements that exist. The answer to the former question was roughly; news websites, email websites, search engines, company websites, chat websites, music and movie sites, game sites, and databases. Other “kinds” of websites were mentioned as well but with less intuitive appeal. The respondents were also asked what kind of activities that they were engaged in on the different web sites and also to name different kinds of websites that they could think of with respect to how they could be used. The web sites were thereafter listed and put into categories with respect to the activities/tasks that could be performed on a certain web site.

All respondents stated that they were regularly using news websites, email websites, search engines and at least one of a few entertainment websites. This rough categorization follows what was found in the website investigation mentioned earlier. It also gives an indication that people seem to use these categories of web sites for four broad reasons, 1) to get information from for instance news websites, search engines (or search services like price runner or the like), databases and the like. 2) They are also sending or receiving information like they do on email websites or when chatting, either on a web chat or through instant messaging services. 3) General entertainment seems

¹⁰ A criteria to be selected to the study was that the person had at least elementary experience of the Internet, this because the study was targeting the participants web experiences.

¹¹ All Swedish natives.

to be a third way, where the web is used as an arena where the web user can spend leisure time. 4) Finally, Internet surfers also use the web for shopping on various kinds of websites provided by companies.

As we can see the categories are not strictly separated from each other. Instead they are intertwined. Often websites have two or more broad functions making them fit into more than one category.

The respondents were also asked what kind of advertisements that they have observed on websites. The respondents stated that they have noticed the following web advertisements: Pop-up advertisements, pop-under advertisements, animated advertisements, banners, screen interstitials, motion picture commercials, flashing advertisements, flash “buttons” and streaming text advertisements.

The most frequently mentioned advertisements were pop-up advertisements, pop-under advertisements, banners and animated advertisements.

Pilot study one provided important insights into web design and web advertising. It also gave an understanding for how Internet surfers use the World Wide Web when searching for information, when communicating with others, when just surfing around (like a walkabout) or when being entertained by the content presented on the web site in question.

Appendix D

Brief description of Pilot study II Test of website experiment and questionnaire pre-test

After the development of the questionnaire, the websites and the advertisements, they were tested on a group of 30 individuals. The reason for this was to screen the design and the various components in the experiments for flaws that could jeopardize the experiments. The sample of 30 respondents comprised of students at Umeå University. They were not informed that it was a pretest of the experiment. Instead they were given the same instructions and procedures as in the real experiment. The respondents also received either 50 or 70 sek as compensation for participating in the experiments.

The experiments were set up in the test labs so that the respondents could do the test and thereafter fill out the on-line survey.


Immediately after completing the experiment and the following on-line questionnaire the respondents were interviewed about how they perceived the test, if the instructions prior to the test were clear, if the questions were difficult or unclear in any way or if they thought the test time to be too long.

As an additional way to investigate what parts of the test that perhaps were difficult some of the test persons were observed while doing the experiment. The purpose for this was to identify potential problems and to be able to ask the respondents about their experience during the session.

The results from the interviews and the observations were used to improve the procedures, to improve the questionnaire and to better communicate important aspects of the experiments to the respondents. This resulted for instance in change of wordings in the questionnaire, exclusion of some questions, altering of wordings in the instructions and the adding of a hidden flip up poster that could remind respondents of how to proceed when answering the questionnaire.

The changes were done as they were probed and the last 10 respondents did not have any additional input that could be used to improve any aspect of the experiments. At that point it was decided that the experiments and questionnaire was ready to be used “live”.

APPENDIX E

Def.	Any advertising experience that utilizes a web-browser initiated additional window to deliver an ad impression either directly above or below the existing browser experience.				
Freq.	Each user should be exposed to no more than one pop-up ad for each visit to an online site.*				
Labeling	Both pop-ups and pop-unders should be clearly labeled with the name of the Network / Advertiser – Publisher – Browser Type (if applicable): <i>Example:</i>  UndertoneNetworks.com - CBS MarketWatch - Microsoft Internet Explorer				
Specifications	Unit Type	Unit Size (WxH in pixels)	File Weight	Audio/Video Initiation	Close Box
	Pop-Under	720X300	50k images 50k flash	User initiated	Mandatory
	Pop-Up	250X250 300X250	30k images 40k flash	User initiated	Mandatory
	Pop-Up Large	550X480	30k images 40k flash	User initiated	Mandatory

Note: Not all publishers carry either pop-ups or pop-unders. Some publishers may not accept all ad sizes.
*Technical frequency guideline: One per user per session per site for both pop-ups and pop-unders. Ad networks and servers may either count a session by site or across network.

Format Type	Format	File Size*	Audio	Animation	Controls	Labeling & Other Items
Within-the-page	In-Page Units (see phase 1 standards)	30 KB	User initiated	15 Sec	Only to invoke audio/ interactivity	Suggested: Label of "advertisement"
	User initiated expandable Non-user initiated expandable					Suggested: Label of "advertisement"
Over-the-page	Pop-Up #1 (250x250)*	40 KB	User initiated	15 Sec	All Over-the-page ads: "Close Ad" button located at top right of unit	Suggested: semi-transparency and / or border around ad helps discoverability of controls
	Pop-Up #2 (300x250)*					
	Pop-Up Large (550x480)*					
	Floating Ads - Landing Spot (if not in UAP unit)	40 KB	User initiated	15 Sec	For Floating Ads: "Close Ad" control no more than 1" away from upper right of floating element	
	Floating Ads - Floating Element	40 KB	User initiated	15 Sec		
Between-pages	Transitional Ads	30 KB	User initiated / PSUE †	15 & 30 Sec	All Between-Pages & In-Stream ads: "Skip Ad" button located at top or lower right of unit	All Between-Pages & In-Stream ads: Suggested Label of "brought to you by "advertisement" or 3 second vignette before content
In-Stream	Encoding, Panel and Player Size specs to come from Broadband Committee		User initiated / PSUE †	15 & 30 Sec		

NOTE: Not all publishers carry all formats. *Initial file downloads only. †Publisher must Set User Expectation for non-user initiated audio.

IAB Rich Media In-Page Ad Unit Size <i>Pixel Specs (Width x Height)</i>	Unit Weights		Unit Timing
	<i>Kilobytes No Flash</i>	<i>Kilobytes Flash</i>	<i>Animation Limit (Initial load time)</i>
Universal Ad Package Units			
728x90; 300x250; 160x600	20 KB	30 KB	15 Seconds
180x150	15 KB	20 KB	15 Seconds
Other Units (Those in bold are existing standard IAB ad units)*			
88x31; 120x30	5 KB	5 KB	None
120x60; 120x90; 230x33	10 KB	10 KB	15 Seconds
234x60; 125x125	15 KB	20 KB	15 Seconds
468x60; 120x240; 250x250; 120x600; 336x280; 240x400	20 KB	30 KB	15 Seconds
300x600; 728x210; 500x350; 720x300; 550x480	30 KB	40 KB	15 Seconds

APPENDIX F

Web design A (high complexity)

Site Name, Headlines etc			
Links etc to other areas	<u>Headline</u>	<u>Headline</u>	Advertisement
	Text fields	Text fields	
	Links etc	Links etc	
	to other areas		

The difference between the A and the B-design is entirely related to the search system and its search depth. Exactly identical information is presented on the two websites. However the A-design has three fields of which one is a field with links to the next search depth level with additional pages on the website. B has two fields where the fields also serves as fields with links to the additional pages. Hence it does not have a second search depth level. The two versions are representations of two very common ways to design news websites.

Web design B (Low complexity)

Site Name, Headlines etc		
<u>Headline</u>	<u>Headline</u>	Advertisement
Text fields	Text fields	
Links etc	Links etc	
to other areas		

Notice that the B-web design is using the ASP* system whereas the A-design is using traditional HTML. The ASP was used in the B web design in order to allow the user to get “back to the starting point” after reading an article. This means that all information from the index page is presented at the end of any article that has been read. The inherent properties of the ASP make the B-web design shallower and thereby it is less complex than if not using the ASP. ASP means Active Server Pages - which is a web server extension and a Registered Trademark by Microsoft Corporation.

APPENDIX G

UmU - Forskning Informatik
Questionnaire

UMU UNIVERSITETET I UMEÅ
U·S·B·E
UMU SURVEY OF BUSINESS BEHAVIOUR

Hej, här nedan följer ett antal frågor att besvara nu när du har använt webbsidan klart. Vi vill att du fyller i frågorna så sanningsenligt som möjligt och ta gärna god tid på dig för att besvara frågorna. Observera särskilt att det ibland är olika typer av skalar att fylla i. Du kan när som helst fråga experimentledaren om det är något du undrar över.

(Görna och rensa skärmen)

UmU - Forskning Informatik
Questionnaire

0%

100%

1 Inledande frågor

0: Vid vilken dator sitter du nu? Titta på den övre kanten på bildskärmen så ser du en siffra. Klicka för den siffra du ser där i på skalan här nedan. Om det t ex står 4 på lappen på bildskärmen så klickar du på siffran 4.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5



Om du behöver hjälp kan du när som helst fråga instruktören så får du hjälp.

1: Hur gammal är du? Var vänlig och skriv med siffror hur gammal du är i fältet här nedan. Använd tangentbordet för att fylla i din ålder.

Endast nummer kan skrivas i detta fält



Om du t ex är 27 år gammal så skriver du helt enkelt 27 i fältet

2: Är du Man eller Kvinna?

- ☐ Kvinna
☐ Man

3: Hur många högskolepoäng har du? Skriv med siffror hur många poäng du har. Om du inte har några poäng skriver du 0 (noll).

Endast nummer kan skrivas i detta fält

4: Vilken inriktning har den utbildning som du studerar?

Välj endast ett av följande

- ☐ Humanistisk
☐ Samhällsvetenskaplig
☐ Naturvetenskaplig
☐ Teknisk
☐ Beteendevetenskaplig
☐ Läroutbildning
☐ Annat

← Föreg

Nästa →

[Lämna och rensa enkäten]

UmU - Forskning Informatik

Questionnaire

0%

100%

2 Datorer och Internet

12: Brukar du någon gång använda dig av dator i hemmet, på jobbet, på skolan eller någon annanstans? Om du någon gång använt eller om du regelbundet använder datorer svarar du Ja så kommer några frågor till att dyka upp.

☒ Ja

☐ Nej

? Om du svarat Nej, fortsätt till fråga 25!

13: Datorvana. Skriv här vilket år du började använda dig av datorer på ett eller annat sätt-

Endast nummer kan skrivas i detta fält

? Skriv årtal med fyra siffror, t ex 1998

14: Anser du dig vara en erfaren eller oerfaren datoranvändare?

Datorvana: 1 2 3 4 5 6 7

? Erfaren=1, Oerfaren=7

15: Brukar du använda dig av Internet (t ex på jobbet, skolan, högskolan, hemma, hos vänner eller någon annanstans?)

☒ Ja

☐ Nej

16: Skriv här vilket år du började använda dig av Internet (t ex genom att använda email, webbsurfa etc).

Endast nummer kan skrivas i detta fält

? Skriv årtal med fyra siffror, t ex 1998

17: Anser du dig vara en erfaren eller oerfaren Internetanvändare? Erfaren=1, Oerfaren=7

Internetvana: 1 2 3 4 5 6 7

? Erfaren=1, Oerfaren=7

18: Har du Internetuppkoppling i hemmet?

☒ Ja

☐ Nej

19: Är din Internetuppkoppling i hemmet en fast uppkoppling eller uppringd anslutning via telefonmodem?

Välj endast ett av följande

☐ Fast uppkoppling

☐ Modem

☐ Annat

20: Var brukar du oftast använda Internet?

Välj endast ett av följande

- ☐ I hemmet
☐ På skolan/högskolan
☐ På arbetet
☐ Annan plats

21: Hur snabb Internetuppkoppling tycker du att du har på den plats där du oftast använder Internet? Snabb=1, Långsam=7

Haslighet på Internet

1	2	3	4	5	6	7	vet ej
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

? Snabb=1, Långsam=7

22: Hur ofta använder du dig av Internet?

Välj endast ett av följande

- ☐ Mer sällan än 1 gång i månaden
☐ 1 gång i månaden
☐ Varannan vecka
☐ 1 gång i veckan
☐ Varje eller nästan varje dag

23: Hur mycket använder du dig av Internet per dag? (Om du använder Internet väldigt lite/finte alls kryssar du för det första alternativet.)

Välj endast ett av följande

- ☐ Jag använder Internet väldigt lite och sällan
☐ Mellan 0 och 30 minuter per dag
☐ Mellan 30 minuter och 1 timme per dag
☐ Mellan 1 och 1,5 timme per dag
☐ Mellan 1,5 och 2 timmar per dag
☐ Mellan 2 och 2,5 timmar per dag
☐ Mellan 2,5 och 3 timmar per dag
☐ Mellan 3 och 3,5 timmar per dag
☐ Mellan 3,5 och 4 timmar per dag
☐ 4 timmar eller mer

24: Rangordna (1,2,3 etc) vilka av dessa aktiviteter som du huvudsakligen använder Internet till. Klicka på den aktivitet du använder mest så blir den nummer 1, sen klickar du på nästa som blir nummer 2 etc. Rangordna endast de som du använder och övriga lämnar du kvar.

Klicka på ett objekt i listan till vänster, börja med det högst rankade objekt, upprepa tills ditt lägst rankade objekt.

Dina val:

Din rangordning:

- 1: _____
2: _____
3: _____
4: _____

För att läsa nyheter på tidningssajter
För att söka information
För att skriva och ta emot email
För att ladda ner film, musik etc
För att shoppa på nätet
För att chatta med kompisar etc
För att spela spel

5: _____
6: _____
7: _____

Klicka på saken till höger som objektet.
Se att ta bort det sista elementet i listan



Du kan ta bort en viss aktivitet genom att klicka på saken till höger.

25: Hur mycket tittar du på TV i genomsnitt per dag? (Om du tittar på TV väldigt litefå kryssar du för det första alternativet.)

Välj endast ett av följande

- ☐ Jag tittar på TV väldigt lite
- ☐ Mellan 0 och 30 minuter per dag
- ☐ Mellan 30 minuter och 1 timme per dag
- ☐ Mellan 1 och 1,5 timme per dag
- ☐ Mellan 1,5 och 2 timmar per dag
- ☐ Mellan 2 och 2,5 timmar per dag
- ☐ Mellan 2,5 och 3 timmar per dag
- ☐ Mellan 3 och 3,5 timmar per dag
- ☐ Mellan 3,5 och 4 timmar per dag
- ☐ 4 timmar eller mer

Surf vidare

Sluta

[Sämma och rensa enkäten]

UmU - Forskning Informatik
Questionnaire

0%

100%

3 Site Liking

26: Vad är din inställning till att använda Internet och att surfa på webbsidor? Positiv=+3, Negativ=-3

+3 +2 +1 0 -1 -2 -3
Inställning till Internet ☐ ☐ ☐ ☒ ☐ ☐ ☐

? Positiv=+3, Negativ=-3

27: Vad tyckte du om webbsidan som du fick använda för en liten stund sedan? Bra=+3, Dålig=-3

+3 +2 +1 0 -1 -2 -3
Åsikt om webbsidan ☐ ☐ ☐ ☒ ☐ ☐ ☐

? Bra=+3, Dålig=-3

28: Tyckte du att webbsidan som du fick använda för en liten stund sedan var användbar eller oanvändbar? Användbar=+3, Oanvändbar=-3

+3 +2 +1 0 -1 -2 -3
Webbsidans funktionalitet ☐ ☐ ☐ ☒ ☐ ☐ ☐

? Användbar=+3, Oanvändbar=-3

29: I vilken utsträckning tycker du att webbsidan du nyss besökte liknar/påminner om sådana som du har sett tidigare? I stor utsträckning=+3, I liten utsträckning=-3

+3 +2 +1 0 -1 -2 -3
Påminner i stor utsträckning/ i liten utsträckning ☐ ☐ ☐ ☒ ☐ ☐ ☐

? I stor utsträckning=+3, I liten utsträckning=-3

30: Du fick en instruktion i början av testet som du sedan skulle utföra. Var det lätt eller svårt att utföra det du blev instruerad att göra på webbsidan. Det var lätt=+3, Det var svårt=-3

+3 +2 +1 0 -1 -2 -3 vet ej
Uppgiften var lätt/svår ☐ ☐ ☐ ☒ ☐ ☐ ☐

? Det var lätt=+3, Det var svårt=-3

31: Tyckte du att det fanns saker på webbsidan som störde eller distraherade dig? Ja, i stor utsträckning=+3, Nej, i liten utsträckning=-3

+3 +2 +1 0 -1 -2 -3 vet ej
Störande inslag? ☐ ☐ ☒ ☐ ☐ ☐ ☐

? Ja, i stor utsträckning=+3, Nej, i liten utsträckning=-3

31 b): Om du ansåg att något var störande så var vänlig och skriv med maximalt tre ord vad du ansåg vara mest störande eller distraherande?

? Skriv med tangentbordet.

32: Tyckte du att webbsidan var väl strukturerad eller ostrukturerad? Strukturerad=+3, Ostrukturerad=-3

	+3	+2	+1	0	-1	-2	-3
Strukturerad/Ostrukturerad webbsida	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
? Strukturerad=+3, Osterukturerad=-3							

33: Tyckte du att Innehållet på webbsidan var intressant eller ointressant för dig? Intressant=+3, Ointressant=-3							
	+3	+2	+1	0	-1	-2	-3
Intressant/Ointressant webbsida	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
? Intressant=+3, Ointressant=-3							

34: Tyckte du att webbsidan var underhållande eller tråkig? Underhållande=+3, Tråkig=-3							
	+3	+2	+1	0	-1	-2	-3
Underhållande=+3, Tråkig=-3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
? Underhållande=+3, Tråkig=-3							

35: Tyckte du att webbsidans utseende var fint eller fult? Fin=+3, Ful=-3							
	+3	+2	+1	0	-1	-2	-3
Fin=+3, Ful=-3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
? Fin=+3, Ful=-3							

36: Hur ofta brukar du besöka webbsidor som liknar den som du alldeles nyss fick besöka? Ofta=+3, Inte så ofta=-3							
	+3	+2	+1	0	-1	-2	-3
Ofta=+3, Aldrig=-3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
? Ofta=+3, Inte så ofta=-3							

37: Hur sannolikt är det att du skulle använda dig av webbsidan du nyss besökte om du hade möjlighet att göra det? Sannolikt=+3, Osannolikt=-3							
	+3	+2	+1	0	-1	-2	-3
Sannolikt=+3, Osannolikt=-3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
? Sannolikt=+3, Osannolikt=-3							

Tillbaka
Nästa sida

[Lämna och rensa enkäten]

Café Bodiva

...för smakupplevelser som
inget annat kaffe kan ge...



1

Dentax

För en hälsosammare mun

Det finns ett för dig
och din familj
som hjälper dig att
återgå till ett
friskt leende



2

Beutée

lockare och släta



3

Var du är är ditt en släta
och lockig lyfte.
Beutée och speciell masker för dig.

**Biokos hud-
vårdsserie
för vital hud**

lotion och
flytande tvål
29,50,-



4

För naturlig skönhet

sensual "i" sexy



5

Hi5exx

Fråga 43. Minns du om du
såg någon av dessa annonser
på websidan som du nys
besökte?

Kryssa för den annons som
du såg i frågeformuläret.
Om du ej såg någon annons
kryssa för "Såg ej någon
annons rutan"

5 Rec Reg Att Pl

43: Såg du någon av dessa 5 annonserna på webbsidan som du nyss besökte? Klicka här för se annonserna igen. Kryssa för den annons som du såg. Om du inte såg eller la märke till någon annons kryssar du för "Såg ej någon annons"-rutan

Välj endast ett av följande

- ☐ 1
☒ 2
☐ 3
☐ 4
☐ 5
☐ Såg ej/la ej märke till någon annons

? Kryssa för den annons som du såg

43 b): Försökte du klicka på annonsen med musen (för att läsa mer om produkten) när du surfade på webbsidan nyss? Ja eller Nej?

Försökte du klicka på annonsen? Ja eller Nej?

Ja Nej
☐ ☐

43 c): Stängde du ned (genom att klicka på kryssset) reklamfönstret som poppade upp? Ja eller Nej?

Stängde du aktivt ned reklamfönstret? Ja eller Nej?

Ja Nej
☐ ☐

? Stängde du popparen genom att aktivt klicka på kryssset (skor)?

44: Vad tyckte du om annonsen som du såg på webbsidan. Tyckte du att den var bra eller dålig? Bra=+3, Dålig=-3

+3 +2 +1 0 -1 -2 -3 vet ej
 Tyckte du att annonsen var bra eller dålig? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Bra=+3, Dålig=-3

45: Vad tyckte du om produkten som du såg i annonsen? Bra=+3, Dålig=-3

+3 +2 +1 0 -1 -2 -3 vet ej
 Produkten verkade vara: Bra/Dålig ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Bra=+3, Dålig=-3

46: Är det troligt att du skulle köpa produkten i annonsen om du såg den i den butik där du brukar handla? Ja, med stor sannolikhet=+3, Nej, med liten sannolikhet=-3

+3 +2 +1 0 -1 -2 -3 vet ej
 Köpa produkten - Ja/Nej ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Ja, med stor sannolikhet=+3, Nej, med liten sannolikhet=-3

47: Upplevde du att annonsen på webbsidan var störande på något sätt? Nej, i liten utsträckning=+3, Ja, i stor utsträckning=-3

+3 +2 +1 0 1 2 3 vet ej

UmU - Forskning Informatik

Questionnaire

0%

100%

5 Rec Reg Att Pt

43: Såg du någon av dessa 5 annonserna på webbsidan som du nyss besökte? Klicka här för se annonserna igen. Kryssa för den annons som du såg. Om du inte såg eller la märke till någon annons kryssar du för "Såg ej någon annons"-rutan

Välj endast ett av följande

☐ 1

☒ 2

☐ 3

☐ 4

☐ 5

☐ Såg ej/la ej märke till någon annons

? Kryssa för den annons som du såg

43 b): Försökte du klicka på annonsen med musen (för att läsa mer om produkten) när du surfade på webbsidan nyss? Ja eller Nej?

Ja

Nej

Försökte du klicka på annonsen? Ja eller Nej?

☐

☐

43 c): Stängde du ned (genom att klicka på kryssset) reklamfönstret som poppade upp? Ja eller Nej?

Ja

Nej

Stängde du aktivt ned reklamfönstret? Ja eller Nej?

☐

☐

? Stängde du popparen genom att aktivt klicka på kryssset (stök)?

44: Vad tyckte du om annonsen som du såg på webbsidan. Tyckte du att den var bra eller dålig? Bra=+3, Dålig=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Tyckte du att annonsen var bra eller dålig?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Bra=+3, Dålig=-3

45: Vad tyckte du om produkten som du såg i annonsen? Bra=+3, Dålig=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Produkten verkade vara Bra/Dålig

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Bra=+3, Dålig=-3

46: Är det troligt att du skulle köpa produkten i annonsen om du såg den i den butik där du brukar handla? Ja, med stor sannolikhet=+3, Nej, med liten sannolikhet=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Köpa produkten - Ja/Nej

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Ja, med stor sannolikhet=+3, Nej, med liten sannolikhet=-3

47: Upplevde du att annonsen på webbsidan var störande på något sätt? Nej, i liten utsträckning=+3, Ja, i stor utsträckning=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Annonsen var ej störande/störande

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Nej, i liten utsträckning=+3, Ja, i stor utsträckning=-3

48: Hur noggrant läste du RUBRIKEN i annonsen på webbsidan. Läste noggrant=+3, Läste inte alls noggrant=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Läste noggrant=+3, Läste inte alls noggrant=-3

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Läste noggrant=+3, Läste inte alls noggrant=-3

49: Hur noggrant läste du TEXTEN i annonsen på webbsidan. Läste noggrant=+3, Läste inte alls noggrant=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Läste noggrant=+3, Läste inte alls noggrant=-3

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Läste noggrant=+3, Läste inte alls noggrant=-3

50: Hur noggrant tittade du på BILDEN i annonsen på webbsidan. Tittade noggrant=+3, Tittade inte alls noggrant=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Tittade noggrant=+3, Tittade inte alls noggrant=-3

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Tittade noggrant=+3, Tittade inte alls noggrant=-3

51: Hur noggrant tittade du på ANNONSEN som helhet på webbsidan. Tittade noggrant=+3, Tittade inte alls noggrant=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Tittade noggrant=+3, Tittade inte alls noggrant=-3

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Tittade noggrant=+3, Tittade inte alls noggrant=-3

52: Tycker du att du riktade mycket eller litet uppmärksamhet mot ANNONSEN på webbsidan. Mycket uppmärksamhet=+3, Lite uppmärksamhet=-3

+3 +2 +1 0 -1 -2 -3 vet ej

Mycket/Lite uppmärksamhet

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

? Mycket uppmärksamhet=+3, Lite uppmärksamhet=-3

Nettong

Någon

[Lämna och rensa enkäten]

60: Brukar du klicka på annonser?, Aldrig=1, Ofta=7

Aldrig=1, Ofta=7

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

? Aldrig=1, Ofta=7

61: Har du på något sätt (t ex genom att ändra inställningar i webbläsaren eller med programvara) försökt undvika att få eller exponeras för reklam på Internet?

☐ Ja

☐ Nej

? Klicka Ja om du försökt undvika reklam på Internet. Annars klickar du Nej.

62: Rangordna nedanstående tre annonstyper från minst störande till mest störande enligt din åsikt. Den som är minst störande klickar du på först (nummer 1), sedan klickar du på den som är näst mest störande (nummer 2) och sist klickar du på den som är mest störande (nummer 3).

Klicka på ett objekt i listan till vänster, börja med ditt högst rankade objekt, upprepa tills ditt lägst rankade objekt.

Dina val:

Vanlig "stel" annons
Animerad annons
"Pop Up"-annonser

Din rangordning:

1:	<input type="text"/>
2:	<input type="text"/>
3:	<input type="text"/>

Klicka på svären till höger om objektet för att ta bort det vald objektet i listan.

? Rangordna från minst störande till mest störande. Den minst störande säger du som nummer 1, näst mest störande som nummer 2 och mest störande som nummer 3.

63: Som avslutning på detta frågeformulär vill vi också veta hur du känner dig just nu. Känner du dig glad eller nedstämd? Glad= +3, Nedstämd=-3

Glad= +3, Nedstämd=-3

+3	+2	+1	0	-1	-2	-3
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

? Glad= +3, Nedstämd= -3

Avsluta

Sista

[Lämna och rensa enkäten]

APPENDIX H

The questionnaire in Appendix G is translated into English and presented in the following. Please remember that the visual appearance here does not correspond with what they respondents experienced in the on-line questionnaire. The visual appearance of the live version is more similar to what can be seen in appendix G.

0) What number does the screen have that you are sitting next to? Look at the number that is written on the top of the screen. Tick the right number on scale below. If it says 4 on the note on the screen then you tick number four on the scale.

1 2 3 4 5

(If you need help you can call the instructor at any time)

1) How old are you? Please type you age by using the keyboard. Type in the field below.

If you for instance are 27 year old then you type 27.

2) Are you male or female?

Male Female

3) How many university credits do you have? Type the number of points that you have. If you do not have any credits then you type "0" (zero).

4) In what area are you studying?

Behavioral science

Arts

Teacher education

Science

Social science

Technology

Others

(Notice that there is a leap in numbers between 4 and 12. There are NO missing questions here. The reason for this anomaly was due to some technical characteristics in the software for the online questionnaire that had to be considered)

12) Do you ever use computers at home, at work, at school or somewhere else? If you have used or regularly use computers then tick “yes” and some additional questions will appear. (If your answer is no then you will continue to question no 25)

Yes

No

13) Computer literacy. Type here what year you started to use computers in one way or the other.

(Type the year with four digits, for instance 1998)

14) Do you perceive yourself to be an experienced or inexperienced computer user?

1 2 3 4 5 6 7

(Experienced=1, Inexperienced=7)

15) Do you use the Internet? (for instance at work, school, university, home, friends or elsewhere?)

Yes

No

16) Type what year you started using the Internet (for instance by using email, web surfing or the like)

(Type the year with four digits, for instance 1998)

17) To perceive yourself as being an experienced or inexperienced Internet user? Experienced=1, Inexperienced=7

1 2 3 4 5 6 7

18) Do you have an Internet connection at home?

Yes

No

19) Is your Internet connection a broad band connection or a modem through the phone line?

Broad band

Modem

Others

20) Var brukar du oftast använda Internet?

At home

At work

At school/University

Other

21) How fast is your Internet connection at the place where you use the Internet most frequently? Fast=1, Slow=7

1 2 3 4 5 6 7

22) How often do you use the Internet?

Less than once a month Once a month Every other week
Once a week Every day or almost every day

23) How much do you use the Internet daily? (If you use the Internet very little or not at all then tick the first alternative)

I use the Internet very little and seldom	Between 0 and 30 minutes per day
Between 30 minutes and an hour per day	Between 1 and 1,5 hours per day
Between 1,5 and 2 hours per day	Between 2 and 2,5 hours per day
Between 2,5 and 3 hours per day	Between 3 and 3,5 hours per day
Between 3,5 and 4 hours per day	More than 4 hours per day

24) Rank (1,2,3 etc) what you mainly are doing when you are using the Internet. Tick the activity that you perform the most and then it will become the 1st, then you tick the next which will become number 2 etc. Rank the ones that you are using and the rest you can leave.

To read news at news websites
To write and receive email
To search for information
To shop on the net
To chat with friends etc
To download music, movies etc.
To play games

(You can erase a ticked activity by clicking on the scissor on the right)

25) How much time do you usually spend watching TV on an average day? (If you watch TV very seldom or not at all then you can tick the first alternative)

I watch TV very seldom	Between 0 and 30 minutes per day
Between 30 minutes and an hour per day	Between 1 and 1,5 hours per day
Between 1,5 and 2 hours per day	Between 2 and 2,5 hours per day
Between 2,5 and 3 hours per day	Between 3 and 3,5 hours per day
Between 3,5 and 4 hours per day	More than 4 hours per day

26) What is your attitude towards using the Internet and to surf on web pages?

Positive= +3, Negative= -3

+3 +2 +1 0 -1 -2 -3

27) What did you think of the website that you got to use just now?

Good= +3, Bad= -3, Opinion of the website

+3 +2 +1 0 -1 -2 -3

28) Do you think that the website that you got to use was functional or non-functional?

Functional= +3, Non-functional= -3

+3 +2 +1 0 -1 -2 -3

29) To what extent do you think that the webpage that you just used looks like/resembles websites that you have seen before? To a great extent= +3, To no extent= -3

+3 +2 +1 0 -1 -2 -3

(Great resemblance/no resemblance)

30) You got instructions in the beginning of the experiment. Was it difficult or easy to do what you were instructed to do on the website? It was easy= +3, It was difficult= -3

+3 +2 +1 0 -1 -2 -3 vet ej

31) Do you think that there were things that disturbed or distracted you? I agree= +3, I disagree= -3

+3 +2 +1 0 -1 -2 -3 vet ej

31b) If you thought that something was disturbing then please type, with a maximum of three words, what was the most disturbing or distracting. (use the keyboard)

32) Do you think that the website was well structured or unstructured?

Well structured= +3, Unstructured= -3

+3 +2 +1 0 -1 -2 -3

33) Do you think that the content on the website was interesting or uninteresting for you? Interesting= +3, Uninteresting= -3

+3 +2 +1 0 -1 -2 -3

34) Do you think that the website was entertaining or boring?

Entertaining= +3, Boring= -3

+3 +2 +1 0 -1 -2 -3

35) Do you think that the websites visual appearance was appealing or non-appealing?

Appealing= +3, Non-appealing= -3

+3 +2 +1 0 -1 -2 -3

36) How often do you visit websites that look like the one in the experiment?

Often= +3, Seldom= -3

+3 +2 +1 0 -1 -2 -3

37) How likely is it that you would use the website in the experiment if you had the possibility to do so in real? Very likely= +3, Very unlikely= -3
+3 +2 +1 0 -1 -2 -3

38) Did you see an advertisement somewhere on the website?
Yes
No

39) Do you remember the brand name of the product? If so please type the name here:

40) Do you remember what was stated in the headline of the ad? If so, please type what was stated here: _____

41) Do you remember what was stated in the copy text below the headline? If so, please type what was stated here: _____

42) What was shown on the picture in the ad? If you remember what was shown, please type it here with a few words. _____

43) Did you see any of these 5 ads on the website that you just visited? Click here to see the advertisements again. Tick the ad that you saw. If you did not see or did not notice an ad then tick the "I did not see an ad"-box.

1 2 3 4 5 Did not see/notice any ad

43b) Did you try to click on the advertisement with the mouse (to read more about the product) when you surfed on the website? Yes or no?

Yes
No

43c) Did you close down (by clicking on the cross) the advertisement that popped-up? Yes or no?

Yes
No

44) What did you think of the advertisement on the website? Did you think that it was good or bad? Good= +3, Bad= -3

+3 +2 +1 0 -1 -2 -3 vet ej

45) What did you think of the product in the advertisement? That it was good= +3, that it was bad= -3

+3 +2 +1 0 -1 -2 -3 vet ej

46) Is it likely that you would purchase the product in the ad if you saw the product in the store where you usually do grocery shopping? Yes very likely= +3, No very unlikely= -3

47) Did you perceive the ad to be annoying? No to a very little extent= +3, Yes to a very great extent= -3

+3 +2 +1 0 -1 -2 -3 vet ej

48) How carefully did you read the headline in the ad on the website?. Very carefully= +3, Not at all carefully= -3

+3 +2 +1 0 -1 -2 -3 vet ej

49) How carefully did you read the copy text in the ad on the website?. Very carefully= +3, Not at all carefully= -3

+3 +2 +1 0 -1 -2 -3 vet ej

50) How carefully did you look at the picture in the ad on the website?. Very carefully= +3, Not at all carefully= -3

+3 +2 +1 0 -1 -2 -3 vet ej

51) How carefully did you look at the ad as a whole on the website?. Very carefully= +3, Not at all carefully= -3

+3 +2 +1 0 -1 -2 -3 vet ej

52) Do you think that you directed a lot or a little attention towards the advertisement on the website. Very much attention= +3, Very little attention= -3

+3 +2 +1 0 -1 -2 -3 vet ej

53) What is your attitude towards advertising in the TV media (for instance TV4, TV3 or Kanal 5). I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3

54) What is your attitude towards advertising in the Print media? I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3

55) What is your attitude towards advertising on websites? I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3

56) What is your attitude towards advertising through email? I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3 vet ej

57) What is your attitude towards "pop-up" ads on websites? (ads that are popping up or appearing from nowhere when entering a webpage)

I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3 vet ej

58) What is your attitude towards animated ads on websites? (ads that are blinking and/or moving, changing color/picture/text etc)

I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3 vet ej

59) What is your attitude towards "common static" ads on websites? (ads that don't blink, move or pop up)

I am positive= +3, I am negative= -3

+3 +2 +1 0 -1 -2 -3 vet ej

60) Do you usually click on ads?

1 2 3 4 5 6 7

61) Have you in any way tried to avoid to receive or to be exposed to advertising on the Internet? (For instance by changing the settings of the web browser or with special software)

Yes

No

62) Rank the following advertisement types from the least annoying to the most annoying, according to your opinion. Clicking on the least annoying first (number 1), then you click on the next most annoying (number 2) and last you click on the one that is the most annoying (number 3).

"pop-up" ad Animated ad Ordinary static ad

63) Finally, we want to know how you feel right now. Do you feel happy or sad?

Happy= +3, Sad= -3

+3 +2 +1 0 -1 -2 -3

Submit your survey! And thank you for your participation!

I skriftserien Studier I företagsekonomi Serie B utges löpande rapporter från den företagsekonomiska forskningsgruppens verksamhet vid Umeå universitet.
Hittills föreligger följande skrifter:

1. Bengt Johannisson och Christian Lindström
Företagsstorlek och forskningsaktivitet.
Umeå 1970. Pris 30
2. Leif Dahlberg och Gustaf Söderström
Närhetsbutik i glesbygd.
Umeå 1970. Pris 30:-
3. Christian Lindström och Lars Enslöf
Marknadens rumsliga spridning i små och stora företag.
Umeå 1971. Pris 30:-
4. Bengt-Olov Byström, Bengt Johannisson och Christian Lindström
Alternativa mått på företagsstorlek.
Umeå 1971. Pris 20:-
5. Bengt Johannisson
Företagens anpassningsprocesser - en systemanalys med tillämpning på mindre företag.
Umeå 1971. Pris 40:-
6. Dezsö Horváth och Dick Ramström
Organisationsuppdelning i samband med lokalisering-sövernäganden. En teoretisk föreläsningsram.
Umeå 1971. Pris 30:-
7. Lennart Orkan
Regionala variationer i företagets personalomsättning.
Umeå 1972. Pris 40:-
8. Per G. Hånell
Inkörningskostnader i mindre och medelstora företag.
Umeå 1972. Pris 30:-
9. Leif Dahlberg
Konsumentens val av inköpsställe.
Umeå 1972. Pris 20:-
10. Göran Carstedt och Birgitta Isaksson Peréz
Företagsbestånd och företagsutveckling.
Umeå 1972. Pris 40:-
11. Carl Fredriksson och Leif Lindmark
Underleverantörssystem i Skellefteå A-region - En Input-Outputstudie.
Umeå 1972. Pris 30:-
12. Dezsö Horváth
Kriterier och principer för företagsorganisation.
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13. Lars Enslöf
Kontaktmöjligheter och kontaktbeteende. En studie av kontakternas regionala variationer.
Umeå 1973. Pris 40:-
14. Lars-Peter Holmlund
Hur man tillämpar teorier om planering.
Umeå 1973. Pris 40:-
15. Bengt-Olov Byström och Mats Glader
Industriell service - Rapport från studier om serviceutnyttjande i mindre och medelstora företag.
Umeå 1973. Pris 30:-
16. Göran Carstedt och Birgitta Isaksson Peréz
Företag i strukturomvandlingen, del I-V.
Umeå 1974. Pris 50:-
17. Lennart Orkan
Personalomsättning - orsaker, konsekvenser och regional struktur.
Umeå 1974. Pris 40:-
18. Bo Lemar och Jan-Evert Nilsson
Långsiktig planering - En begrepps- och innehållsanalys.
Umeå 1974. 2:a upplagan 1978. Pris 70:-
19. Sixten Andersson
Produktutvecklingens möjligheter och begränsningar - En studie med inriktning på mindre och medelstora företag.
Umeå 1974. Pris 40:-
20. Dezsö Horváth
Situationsanpassade organisationer - teori och tillämpning.
Umeå 1976. Pris 50:-
21. Claes-Göran Larsson
Datorbaserad kassaplanering.
Umeå 1976. Pris 50:-
22. Carl Fredriksson och Leif Lindmark
Nationella och lokala produktionssystem. En strukturstudie av svenskt näringsliv.
Umeå 1976. Pris 70:-
23. Carin Holmquist
Styrning av organisationer - ett systemperspektiv tillämpat på statliga företag.
Umeå 1980. Pris 60:-

24. Runo Axelsson och Lennart Rosenberg
Applications of organization theory. On problems of the Swedish system of higher education.
Umeå 1976. Pris 70:-
25. Elisabeth Sundin
Företag i perifer region. Fallstudier av företagstradition, företagsmiljö och företags framväxt i Norrbottens inland.
Umeå 1980. Pris 60:-
26. Per Månsson och Kaj Sköldberg
Symboliska organisationsmönster - Sju typer av planeringskultur under osäkerhet och stress i ett metamorfoperspektiv.
Umeå 1983. Pris 120:-
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