An Investigation into the Development of a Creativity Support Tool for Advertising

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Attestation of authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Tommi Opas

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I also wish to thank our families in Finland and in New Zealand: Antti,

To Ida and Maximilian

"You see," he explained, "I consider that a man's brain originally is like a little empty attic, and you have to stock it with such furniture as you choose. A fool takes in all the lumber of every sort that he comes across, so that the knowledge which might be useful to him gets crowded out, or at best is jumbled up with a lot of other things so that he has a difficulty in laying his hands upon it. Now the skilful workman is very careful indeed as to what he takes into his brain-attic. He will have nothing but the tools which may help him in doing his work, but of these he has a large assortment, and all in the most perfect order. It is a mistake to think that that little room has elastic walls and can distend to any extent. Depend upon it there comes a time when for every addition of knowledge you forget something that you knew before. It is of the highest importance, therefore, not to have useless facts elbowing out the useful ones."

- Sherlock Holmes to Watson during their first case, A Study in Scarlet

Abstract

In recent years, there has been a strong interest in developing Creativity Support Tools for many exciting areas of research such as art and music. Yet few such tools have been developed to support creativity in advertising. This is unusual since advertising, like art and music, is a highly creative endeavour of the human mind. The goal of advertising is to transform a communicational objective of a product or a service into a creative idea. A tool that would enhance the development of creative ideas in advertising would be highly beneficial for the advertising industry and possibly shed light on the mystery behind creativity.

In this thesis, I developed Creative Pad, a new Creativity Support Tool to assist advertising creatives in generating creative ideas for advertising. In developing Creative Pad, I studied advertising creativity and human creative thinking. I developed a framework for analysing the advertising process, in which the process is viewed as having three distinct phases: a message, an idea, and an execution. A significant implication of this view is that the process for developing ideas for new advertisements and the process of executing those ideas and turning them into creative products are independent. Each step is the result of a significant creative process. Creative Pad is developed to assist in the development of creative ideas for new advertisements.

To assist this creativity, relevant triggers are needed. Research has shown that individuals with high associative skills produce more creative advertising.

Creative Pad supports the associative skills of the advertising creative and exploits the use of the Internet as a dynamic database. It finds words and sentences related to the original communicational objective, providing relevant triggers for the associative creative process in the minds of the advertising creatives.

Several experiments using Creative Pad were conducted with advertising creatives, and students with no advertising background. The results show that Creative Pad supports the generation of new ideas in two ways. First, and most important, all the subjects were able to develop interesting new ideas. In particular, the advertising creatives were able to design a sketch of the advertisement from ideas generated using Creative Pad. Second, I was able to find a connection between the triggers, the words and sentences selected by the user during the creative process, and the ideas generated. Although the connection might be considered a weak one, it nonetheless demonstrates that a connection exists between the ideas developed by the advertising creatives and those suggested by Creative Pad.

Chapter 1

Introduction

In recent years, there has been a strong interest in developing Creativity Support Tools for many exciting areas of research such as art and music. Examples of recent tools supporting creativity in the arts include an interactive artwork called GEO Narrative Landscape (Zhang & Candy, 2007), that aims to transport the viewer to an architectural attraction; Iamascope (Fels & Mase, 1998), that allows the artist to control a digital canvas by movement; and an interactive video installation, Seen, by David Rokeby (Deegan, 2007). In music, Max/MSP is a tool for combining blocks of music into useful combinations in a real-time computer music performance (Puckette, 2002); Band-out-of-the-box by Thom exchanges short solos with the musician (Thom, 2000); and a model to predict the creative decisions of a blues musician was developed by Vempala and Dasgupta (2007). Yet, few such tools, if any, have been developed to support creativity in advertising. This is unusual since advertising, like art and music, is a highly creative endeavour of the human mind.

The goal of advertising is to transform a communicational objective of a product or a service into a creative idea. A tool that could enhance the development of creative ideas in advertising would be highly beneficial for the

advertising industry and possibly shed light on the mystery behind creativity.

In this thesis, I investigated the problems of creating such a tool. In particular, I ask:

1. What is advertising creativity and in particular, which aspects of the creative process in advertising could be supported by a tool?

2. How could such a tool be implemented?

The result of this study is the successful development of a prototype, codenamed Creative Pad, which assists advertising creatives to develop ideas for advertisements. Creative Pad has been tested with several advertising creatives, and students who are not studying advertising or marketing. The intent of the latter is to explore the extended use of Creative Pad. The results obtained provided significant insights into the nature of such tools and Creative Pad could now provide a platform for further development and enquiry into this area of research.

Designing a Creativity Support Tool for advertising is a challenging task. One primary reason is that a significant gap exists in our understanding of creativity, despite much research in the past (Amabile, 1993; Liu, 2000; El-Murad & West, 2004; Cropley, 2000; Edmonds et al., 2005). For example, attempts to create programs that could be considered as creative, such as AM (Lenat, 1976) and Aaron (Cohen, 1995) have experienced limited success. This is partly due to the inability to repeatedly run such programs to produce something creative, and partly to the fact that if the programs do produce something that can be judged as creative, one usually does not know why. Consequently, even though one has the source of these programs, one cannot say what exactly the process of creativity entails. Is the process about "mapping, exploring and transforming conceptual spaces" (Boden, 1994)? Is it a search process and perhaps even a random one until an idea is recognised?

The latter would put more emphasis on collaborative efforts (Csikszentmihalyi, 1997; John-Steiner, 1986) and performance evaluations, and the former on one's ability to wade through complex mental representations held individually.

Various views of creativity exist. One such example is Csikszentmihalyi's view of creativity as a social phenomenon where nothing can be creative unless it is accepted within the particular domain of experts (Csikszentmihalyi, 1988). In contrast, Elton (1993, 1995) emphasises the etiological properties of an entity that are concerned with its causal history. This view suggests that the value in a creative product is often more in how the creative product was produced instead of the final product itself. Ancient views of creativity introduced the concept of geniuses who were thought to be born rather than made. Today, two approaches to creativity can be observed: origin-oriented and process-oriented. While the former is concerned with examining and determining the origins of creativity, the latter focuses on understanding the thought processes involved in creativity (Marakas & Elam, 1997).

Our lack of a widely agreed-upon definition of creativity (Ripple, 1989) and understanding of the creative process, nonetheless do not deter researchers from developing programs to support our creative endeavours. Many such programs have appeared in recent years and they can be divided broadly into two categories: those that provide broad support to individuals or groups to work creatively, and those that help train an individual to be creative. The latter are better known as creative training tools and employ well-known techniques and methods such as brainstorming, by Osborn (1957), and lateral thinking, by De Bono (1970). Many such programs are available as web-based or downloadable; visit, for example, www.innovationtools.com or www.creatingminds.org. In the former, Lubart (2005) considered four categories: computer as nanny, pen-pal, coach and colleague. A nanny system provides support for the long and arduous process in developing a creative

idea. A pen-pal system focuses on support for the communication of ideas and especially among researchers working in a collaborative project. A coach system advises on how to work creatively, while a colleague system is a creative system on its own.

Although advertising creatives could work as a team, many would develop their ideas individually. Creative Pad is thus designed to assist individuals. To develop such a tool, I began with an investigation of the nature of advertising creativity and the advertising process. The creative process in advertising is described as unpredictable and unscientific (Kover & Goldberg, 1995; Reid & Rotfeld, 1976) while at the same time creativity itself is described as the most important element in advertising success (El-Murad & West, 2004). Despite the inherently creative nature of advertising very few of the papers in the *Journal of Advertising* studied creativity in advertising: between 1978 and 1993 only 1.4% and between 1994 and 2005 only 1.6% (Vanden Bergh & Stuhlfaut, 2006). Also, very few of these studies tackle the specific challenge of thinking about novel ways and methods to enhance the difficult and mysterious process of creating new ideas.

Associative skills are identified as one of the most important skills in enhancing advertising creativity. Individuals with a higher associative ability produce more creative advertising that can also be considered more effective (Reid & Rotfeld, 1976). However, applying techniques that enhance these associative skills often do not work in advertising because of the specific constraints involved in advertising creativity. The search for associations in advertising must have a more specific and narrow focus than that say, for an artist or a poet. The focus of the advertising creative must lie firmly in fulfilling the client's communicational objective and transforming that objective into a creative idea. Thus, creativity in advertising has a narrow focus; it is creativity with a deadline. Advertising creativity is a special form of creativity

where "originality and imagination must operate within a goal-directed and problem-solving context" (Reid, King, & DeLorme, 1998). Thus the ideas generated in advertising must solve a specific problem, the goal being to transform the communicational objective of the client into a creative idea. Furthermore, although associative process is central to advertising creativity (Reid & Rotfeld, 1976) these associations do not come easily and creatives are often troubled with the "fear of a blank page" (Cotzias, 1996; Barker, 2001), where the creative process cannot be started without a central element that can act as the foundation for the associative process.

From an analysis of several advertisements, I developed a framework to describe the advertising process. It consists of three basic elements, "message -> idea -> execution":

Message Communicational objective of an advertisement expressed as a sentence.

Idea Interesting and creative way to communicate the Message to the target audience.

Execution Description of how the Idea is produced into a final creative product such as a print or tv advertisement.

Two important ideas emerge from such a view of the advertising process:

1. Goal-related ideation. Since the framework starts with the communicational objective (message) the process should produce related ideas.

2. Idea is not confused with execution.

Consequently Creative Pad is developed to generate ideas to support the associative skills of the advertising creative. It is not developed to produce the final advertisement (or, in the above terminology, the execution). It is possible

to develop a separate Creativity Support Tool to support the creative thinking in developing the execution of the idea. However, it is important that the two are separated and viewed as two different tasks needing two very different Creativity Support Tools. Otherwise, one could at best find oneself developing an overly complex tool, or at worst confusing what one is trying to develop. For further discussion, see Yeap and Opas (2009).

Many tools categorised as Creativity Support Tools are often not designed primarily to support the generation of new ideas directly related to a specific problem but rather to act as a passive model for organising ideas (examples of such tools are outliners and mindmappers). Thus, little research exists that would help in gaining an understanding of how the problem should be approached. Advertising creativity is a problem-solving process that includes specific constraints which must be considered while developing a framework for a Creativity Support Tool. For example, a commonly used technique for producing ideas is to combine random elements to inspire the creative person. While this approach triggers ideas successfully, the prompted idea is not necessarily related to the original problem and thus useless. This problem is described by Poltrack (1991): "A friend of mine says, 'Pick two objects that have nothing to do with each other, put them together and see if it sparks an idea,' he relates. Unfortunately, it has nothing to do with the creative problem you're trying to solve."

Creative Pad overcomes this problem by using goal-related ideation. Many existing tools create their own static database and try to build associations between words in the database. I will use the Internet as a dynamic database of ideas for Creative Pad. Creative Pad thus finds information related to the original communicational objective and from it, extracts interesting words and sentences as triggers for the user. In addition to being a dynamic database, the Internet also provides the latest information related to the product, thus

enabling the advertising creatives to quickly know what data are available.

The experiments conducted with Creative Pad could be described briefly as follows: The participants use Creative Pad to come up with ideas for a particular task (for example: generate ideas for a slogan for Lotto). A report that records the selected words, sentences, and ideas from this process is saved. Experiments conducted with advertising creatives and students with no advertising background show that Creative Pad supports the generation of new ideas. Furthermore, the experiments show a connection between the triggers, the words, and sentences selected by the user during the creative process, and the ideas generated. This confirms that Creative Pad triggers the creative human mind and supports the creative process in advertising in a manner that is relevant to the original task.

1.1 Synopsis

In chapter two, I describe the mysterious nature of creativity and analyse the challenges in creative practice in the advertising domain and inside an advertising agency. I discuss attempts at creating tools to enhance the creative process in advertising, and highlight specific issues that affect the design process of a Creativity Support Tool for advertising.

In chapter three, I present a discussion of the current state of Creativity Support Tools. The goal is to provide an overview of work related to methods that aim to support idea generation and creativity in a computational manner. Based on this investigation, I present a summary of critical features of a successful Creativity Support Tool for advertising.

In chapter four, I describe the development and implementation of Creative Pad. I began by developing a framework for analysing the advertising process. Based on this analysis, preliminary studies were conducted. Findings from

these investigations guided the development of the final version of Creative Pad. A detailed description of Creative Pad concludes the chapter.

In chapter five, I present the experiments conducted with the tool and analyse the results from these experiments. The goal of these was to study if Creative Pad would successfully trigger new ideas in the user and if so, whether I could find evidence for this. In all the experiments, the subject finished with a variety of ideas for the task. It is too early to judge whether these ideas are creative but nonetheless, using Creative Pad, the users did not experience the "fear of a blank page". Furthermore, the ideas created contain words which were generated by Creative Pad. The latter is used as evidence to support that Creative Pad provided triggers for the users' ideas.

Finally, in chapter six, I conclude by presenting a discussion of the findings in this research.

Chapter 2

Advertising

> We are built as gene machines and cultured as meme machines.
> (Dawkins, 1976)

This chapter presents a study of the advertising process, focusing on its creative nature and early attempts at developing tools to assist this. The goal of advertising is to transform a communicational objective of a product or a service into a creative idea, which forms the foundation for effective advertising (Stewart, 1992). Thus, advertising, like art and music, is inherently a creative field. Significant research has been carried out in the past in an attempt to understand the general nature of a creative process. Section 2.1 reviews relevant work to provide the necessary background for understanding such a process. Section 2.2 then discusses advertising creativity: what is it and in particular, how might one develop a tool to assist such a process? Section 2.3 reviews existing attempts to develop tools for advertising. Section 2.4 concludes this chapter with a discussion of the limitations of existing works.

2.1 Understanding creativity

When a thought process produces a creative idea, it is commonly referred to as a creative process (see figure 2.1). This process is often studied, but the most intriguing part, where ideas appear as a result of sudden illumination, remains unknown. Subsection 2.1.1 describes the mysterious nature of a creative process. Subsection 2.1.2 describes attempts at defining creativity and how they influenced the way in which different researchers investigate the creative process. Subsection 2.1.3 studies the models of creativity developed to understand the creative process, both on an individual and cultural level, and concludes by introducing a recent model that synthesises both.

2.1.1 Mysterious nature of creativity

Despite all the research conducted on creativity there is no all-encompassing theory of the human creative process (Ritchie, 2006; Buchanan, 2001). It is often said that something "magical" or mysterious happens inside the human brain as a new idea emerges (Johar, Holbrook, & Stern, 2001; Guilford, 1967; Wallas, 1926; Liu, 2000; De Bono, 1970). This view of the creative process as mysterious is often attributed to its involving an immense freedom to create something where the outcome is unknown, in contrast to other processes where the outcome is known (Johar et al., 2001). Instead of using words such as *magical* or *mysterious* it has been argued that this part of creativity is rather a natural process that is unknown.

> Human beings are just one species among many, fully biological, and hence capable of no miracles, restricted to the same sorts of processes and methods as the other species. Our creative processes are surely natural (not supernatural!), so in that bland sense they are as biological as the creative processes of the weaverbird and the beaver. (Dennett, 2004)

Input
Raw material:
experiences, knowledge, data ——— Creative process ———▶ Output
Creative product,
idea
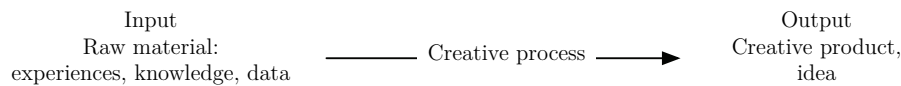
Figure 2.1: We can affect the input and observe the output, but the results from studying the creative process are not very revealing of the process itself.

Various theories of the creative process exist (Lubart, 2001; Wallas, 1926; Sternberg, 2006), but modelling its different phases often tells us little of the raw material in these processes (Ritchie, 2006; Lubart, 2001). Many methods have been used to try to capture what happens during the creative process (talk through, record history), but the task of learning more about the process by observing it has proven to be a challenge (Lubart, 2001; Sternberg, 1999; Edmonds et al., 2005). When a creative idea is generated, it is difficult to post-rationalise what led to the moment of illumination (Bonnardel & Marmèche, 2005; McKnight, 2007). One alternative is to ignore the creative process and focus on the creative product and try to reverse-engineer this process.

Goldenberg and his colleagues have conducted interesting studies in the domain of advertising where the method is to work backwards from the creative product by identifying templates that model a particular style for generating new ideas for advertising (Goldenberg & Mazursky, 2000; Goldenberg, Mazursky, & Solomon, 1999; Goldenberg & Mazursky, 2001). The creative process is fuelled by the knowledge, experiences and information of the creative person. Using the creative product as the source of study might reveal clues about a possible technique or pattern, but does not shed much light into the thinking and reasons behind specific decisions made in developing the idea for a creative product, such as what information triggered these ideas in the first place (Ritchie, 2006).

If we agree that creativity is a novel combination of existing information (Shneiderman et al., 2006; Boden, 1995, 1998, 2003), some form of re-

organisation must happen in the mind of the person creating the creative product. What we do not know is how the human mind combines these existing things. Does the mind work through a specific algorithm, or are there elements of randomness involved? Or is it simply a question of the "fittest" ideas surviving and the bad ones discarded? Dennett has identified similarities between the creative process and evolution:

> What processes could conceivably yield such improbable "achievements of creative skill"? What Darwin saw is that Design is always both valuable and costly. It does not fall like manna from heaven, but must be accumulated the hard way, by time-consuming, energy-consuming processes of mindless search through "primeval chaos", automatically preserving happy accidents when they occur. (Dennett, 2004)

We do not know how information is processed in the human mind, but perhaps we can affect and guide the flow of information going into the creative process and provide more triggers for the creative mind. This could lead to more exciting and creative ideas as well as significant insights about the mysterious creative process.

2.1.2 The creative process

Relative to defining the creative process, a creative product is easier to define. A widely accepted definition is that it is both original and appropriate or useful (El-Murad & West, 2004). In a similar fashion Gilhooly (1982) stated: "Creative products, be they poems, scientific theories, paintings, or technological advances, are both novel and acknowledged to be valuable or useful in some way." Yet another defines it as one where "A product or response will be judged as creative to the extent that it is a novel and appropriate, useful, correct, or valuable response to the task at hand." (Amabile, 1982).

In simplistic terms, a creative process could then be thought of as a process that creates a novel output. Hence, according to Gardner (1985), "Creativity is best described as the human capacity regularly to solve problems or to fashion products in a domain, in a way that is initially novel but ultimately acceptable in a culture." But, and as Maslow pointed out, the generation of new ideas requires exploration through surface layers: "The generation of really new ideas is in the depths of human nature . . . it is deep in the sense that ore is deep. It is deep in the ground. You have to struggle to get at it through surface layers" (Maslow, 1971). To be able to successfully generate creative ideas, the process should involve an exploration of the existing information and combining and associating this information in way that solves a particular problem.

The creative process can be approached from many angles. For example, Kneller emphasised the element of surprise in the outcome of the creative process: "Creativity, it has been said, consists largely of rearranging what we know in order to find out what we do not know" (Kneller, 1965). El-Murad and West (2004) argued that combining two or more previously existing items, materials, ideas, thoughts, or concepts in a new way is considered the essence of creativity. This new way of combining existing items creates then the "combinatorial leap" which according to Sternberg is the hallmark of creativity (Sternberg, 1999). Yet, others emphasised the associative aspect of the creative process: for example, "The ability to formulate new combinations from two or more concepts already in the mind" (Haefele, 1962) and "Creativity involves the joining of apparently unrelated elements which evoke new viewpoints directed toward problem solving" (Gordon, 1961). The last is one of the most popular and powerful ideas about creativity and is often referred to as the associative theory of creativity.

The associative theory of creativity suggests that "Generally, any condition or state of the organism which will tend to bring the requisite associative

elements into ideational contiguity will increase the probability and speed of a creative solution" (Mednick & Mednick, 1965). Mednick presents three different ways of bringing associative elements together to arrive at a creative solution:

Serendipity Being lucky in finding things you were not looking for. The requisite associative elements may be evoked contiguously by the contiguous environmental appearance (usually an accidental contiguity) of stimuli which elicit these associative elements.

Similarity The requisite associative elements may be evoked in contiguity as a result of the similarity of the associative elements or the similarity of the stimuli eliciting these associative elements. Examples of similarity: creative writing, where homonymity, rhyme, and similar structure are used.

Mediation The requisite associative elements may be evoked in contiguity through the mediation of common elements.

These different ways suggest that although the associative process is concerned with combining items in a relevant and meaningful way, there are three different ways that the information can be organised to inspire associative thinking.

A well-known example of associative creativity is the discovery of the Fuchsian functions by Poincaré:

> Ideas rose in crowds; I felt them collide until pairs interlocked so to speak, making a stable combination. By next morning I had established the existence of a class of Fuchsian functions. (Mednick & Mednick, 1965; Lubart, 2001)

The associative theory is defined by Reid and Rotfeld (1976): "The theory considers creativity as the process of bringing previously unrelated facts into

associations so that previously unrelated relationships between them become apparent." The difference in this definition to others more general is that it also emphasises the element of surprising relationships appearing through association.

Many researchers hold a wider view of creativity; the process itself consists of different stages. The earliest and most well-known four stages of the creative process were introduced as early as 1926 by Wallas (Lubart, 2001). The four stages Wallas identified were:

1. Preparation (preparatory work on a problem that focuses the individual's mind on the problem and explores the problem's dimensions).

2. Incubation (the problem is internalised into the unconscious mind and nothing appears externally to be happening).

3. Illumination or insight (the creative idea bursts forth from its preconscious processing into conscious awareness).

4. Verification (the idea is consciously verified, elaborated, and then applied).

Many theories and variations about different stages of the creative process have been developed (Lubart, 2001). What they almost all share can be summarised in four parts:

1. Defining and stating the original problem.

2. Allowing your subconscious to start processing the problem, i.e. leaving the problem.

3. Finding the solution.

4. Verifying the solution.

Arguably, the most famous personal account of a creative process in scientific discovery is how Kekulé discovered the shape of the benzene ring. In a dream-like state Kekulé saw a vision of a snake biting its own tail (Boden, 2003).

> I was sitting, writing at my textbook; but the work did not progress; my thoughts were elsewhere. I turned my chair to the fire and dozed. Again, the atoms were gambolling before my eyes. This time the smaller atoms kept modestly in the background. My mental eye, rendered more acute by repeated visions of the kind, could now distinguish larger structures of manifold conformation: long rows, sometimes more closely fitted together; all twining and twisting in snakelike motion. But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning I awoke; and this time I also spent the rest of the night in working out the consequences of the hypothesis. (Rothenberg, 1995)

This is a good example of all the phases of the creative process, as described above, being identified.

2.1.3   Individual and social aspect of creativity

Two models or frameworks of creativity have dominated over the years. Simon defines creativity as a "special kind of problem-solving behaviour" (Simon, 1982; Liu, 2000). This approach focuses on creativity on a personal level. Simon has described creative problem solving as a "search through a vast maze of possibilities, a maze that describes the environment" (Simon, 1982). In this model, bounded rationality and the endless possibilities to search a conceptual space force us to use methods such as subconscious pattern recognition in our decision making. An example of subconscious pattern recognition is a chess player who plays several games of chess simultaneously, making decisions based on intuition by accessing a personal database of knowledge and experience. Simon uses the term *satisfice* to describe decisions that are based

on information that is available without delay, and where time to respond is limited.

The other widely accepted model is the notion of social-cultural creativity, by Csikszentmihalyi (1999). Csikszentmihalyi observed creativity as something that cannot exist outside a domain. The domain experts act as the gatekeepers who ultimately decide whether an artifact is creative or not. This creates a cultural element to creativity. "Creativity is a process that can be observed only at the intersection where individuals, domains, and fields intersect" (Csikszentmihalyi, 1999). This contribution to the study of creativity was significant since it changed the focus from "what is creativity?" to "where is creativity?" (Saunders & Gero, 2001). Thus, creativity does not exist only in the mind of the creative person but is a complex process that involves the societal and cultural issues related to creativity.

Csikszentmihalyi identified three important concepts from creativity: domain, field and individual (Saunders & Gero, 2001). A domain consists of a set of symbols and procedures. A field includes the individuals who act as gatekeepers to the domain. Thus, creativity occurs when an individual has an idea and this idea is then accepted into the domain by the experts in the field (Shneiderman et al., 2006).

In this approach, creativity is a social process that reaches beyond the generation of new ideas as society has significant influence in what is considered creative. Hence, creativity does not occur in a vacuum and it is important to recognise the socio-cultural environment of the creator (Csikszentmihalyi, 1988, 1999). Since creativity requires acceptance from experts in the field in question, nothing is creative until it has been accepted by that field and only then accepted to the relevant domain where it can then again be transformed into another creative object, as demonstrated in figure 2.2.
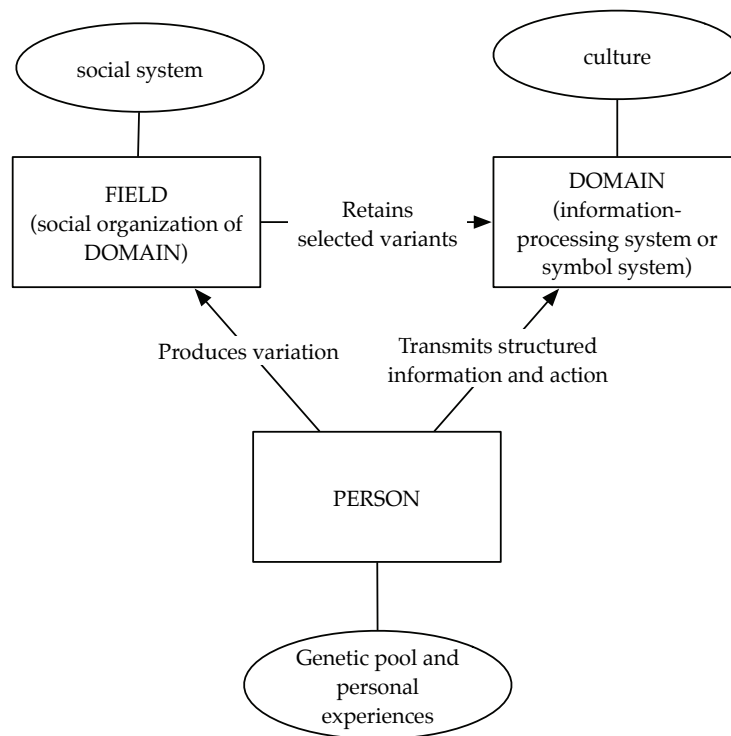
Figure 2.2: Csikszentmihalyi's framework of creativity emphasises the cultural element in creativity (reproduced from (Csikszentmihalyi, 1988)).

Simon's individual and Csikszentmihalyi's sociocultural models of creativity have been considered to be somewhat conflicting but Liu (2000) has presented a generate-and-test model that considers both the social and individual aspect creativity. This model requires creativity on a personal level and then acceptance on the sociocultural level (see figure 2.3). This model is important since it describes well the task a creative person performs in the advertising domain. First, the creative person must solve a specific communication problem in a creative way, but this creative solution must also be accepted within the field to be included in the domain which ultimately is the target audience for whom the original message was developed.
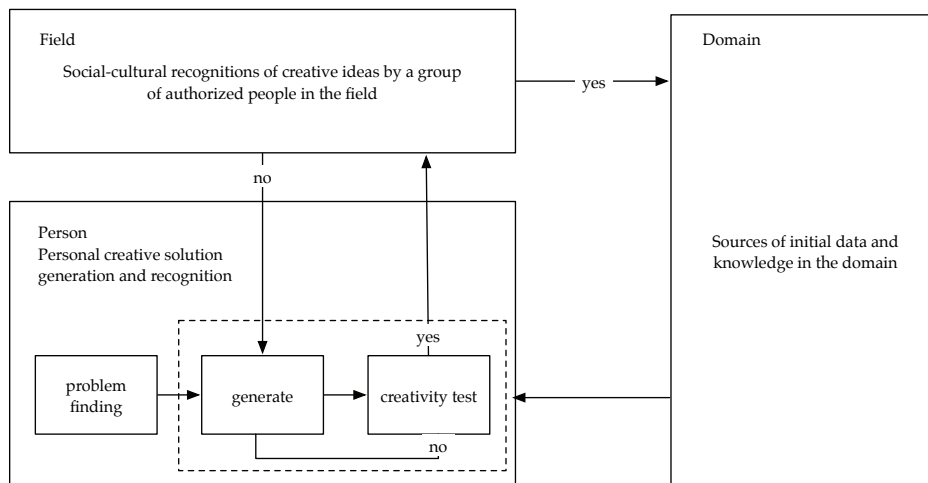
Figure 2.3: Dual generate-and-test model of creativity by Liu (2000) considers both individual and social aspects of creativity (reproduced from Liu (2000)).

2.2 Creativity in advertising

The creative process in advertising is described as unscientific and unpredictable but also the most important element in advertising success. It is also a complicated process involving many participants and specific constraints. What are the important factors one must consider while developing a tool for supporting creativity in advertising?

Subsection 2.2.1 describes the creative process in advertising in general and subsection 2.2.2 focuses on the associative nature of that process. The creative design process of producing an advertisement falls into the category of general design class problems. The goal of this task or problem to be solved is to produce an advertisement, while taking into consideration the specific elements and constraints, such as budget restrictions, specific media or persuasion objectives that are involved in many design activities (Johar et al., 2001). Subsection 2.2.3 will describe how some of these specific elements and constraints complicate the creative process in advertising.

2.2.1   Creative process in advertising

A characteristic of human intelligence is the ability to come up with and develop novel ideas. Although this ability is valuable for many industries and domains, it is particularly interesting within that of advertising. The core purpose of the advertising industry is to produce creative ideas as advertisements, often in a separate creative department (White, 1972).

Despite the inherently creative nature and importance of ideas in the advertising domain, very little research is conducted specifically on the creative process in advertising. Thus, very little is known of how advertising ideas are created. The percentage of papers related to creativity in advertising in the *Journal of Advertising* between 1978 and 1993 was only 1.4%, and between 1994 and 2005 only 1.6% (Vanden Bergh & Stuhlfaut, 2006). Many papers attempt to explain the effectiveness of advertising (Kover, Goldberg, & James, 1995; Stewart & Koslow, 1989; Amos, Holmes, & Strutton, 2008; Aitken, Gray, & Lawson, 2008), but very little focus exists on the creative process itself: what triggers creative ideas; most importantly, very few tackle the specific challenge of thinking about novel ways and methods of how to make the existing creative process in advertising agencies more effective (Hill & Johnson, 2004; Stewart, 1992; Johar et al., 2001; Reid & Rotfeld, 1976; Reid, 1978; Zinkhan, 1993).

The creative process in advertising is described as unpredictable and unscientific (Kover & Goldberg, 1995; Reid & Rotfeld, 1976) while at the same time creativity is described as the most important element in advertising success (El-Murad & West, 2004). What is creativity in advertising then? El-Murad and West (2004) state, "The evidence suggests that advertising creativity involves the conceptualisation and production of an object from new or existing components in a novel way that is also relevant to the task in hand." One of the grandfathers of advertising, Leo Burnett, has defined advertising

creativity as "The art of establishing new and meaningful relationships between previously unrelated things in a manner that is relevant, believable, and in good taste, but which somehow presents the product in a fresh new light" (Broadbent, 1984). Researchers widely agree that advertising creativity is a special form of creativity where "Originality and imagination must operate within a goal-directed and problem-solving context" (Reid et al., 1998; White, 1972).

One of the earliest frameworks for supporting the creative process in advertising was introduced by J. Young (1972) in his book *A Technique for Producing Ideas*. The framework (instead of a specific technique) is a series of five stages: ingestion, digestion, incubation, inspiration, and verification, and follows the well-known stages (preparation, incubation, illumination, verification) of a creative process as described by Wallas. Thus, this technique is mainly a tailored version of Wallas' well-known framework of creativity.

The technique introduced by Young has received some criticism for being either incomplete or not universally applicable (Bengtson, 1982). Both arguments may be valid but due to the unscientific nature of the creative process it can also be argued that in pursuit of a universal theory of creativity the critics fail to accept the inherently complicated nature of the creative process. As part of his theory, Young presents an intriguing view of words as ideas in a state of "suspended animation":

> Another point I might elaborate on a little is about words. We tend to forget that words are, themselves, ideas. They might be called ideas in a state of suspended animation. When the words are mastered, the ideas tend to come alive again. Thus, words being symbols of ideas, we can collect ideas by collecting words. The fellow who said he tried reading the dictionary but couldn't get the hang of the story, simply missed the point that it is a collection of short stories. (J. Young, 1972)

This notion of words as ideas and the dictionary as a collection of short

stories hints at the importance of the associative skills of the creative person in the creative process. Further evidence for this notion was presented by Mednick and Mednick (1965) and Reid and Rotfeld (1976). The associative theory is discussed in detail in subsection 2.2.2.

Surprisingly, in discussing whether an advertisement is considered to be creative or not Kover, James, and Sonner (1997) state: "Thus, an advertisement is not considered a creative success in the real world unless it achieves a client's communication objectives." This notion possibly has its origins in an old advertising mantra or slogan, "it is not creative unless it sells". However, this statement that an advertisement must sell to be creative is questionable. What is considered creative in the domain of advertising is the creative product being accepted by the gatekeepers in that domain as creative (Csikszentmihalyi, 1988; Saunders & Gero, 2001), indicating other creative experts within the advertising industry. Awards for the most creative advertising are presented by peers of the advertising industry at grand award ceremonies.

Thus, for an advertisement or an idea to be considered creative it does not have to meet the communicational objectives of the client. It simply needs to be considered creative by the experts in the advertising domain. This dilemma having been identified within the advertising industry, competitions that measure the success rate of the campaign in reaching the goals of the client have been introduced.

2.2.2 Associative theory for advertising creativity

Creative individuals are known for being able to make associations between different categories of ideas (Barron & Harrington, 1981). As discussed in the previous section, Mednick defines the creative process as "Forming

of associative elements into new combinations which either meet specified requirements or are in some way useful" (Mednick & Mednick, 1965). He noted: "The chemist mixes two liquids out of curiosity. The painter dabs hopefully at a fresh canvas waiting for an idea." In a similar fashion, advertising creatives search for a solution by creating associations between elements related to the problem. Advertising research has shown that individuals with a higher associative ability produce more creative advertising that can also be considered more effective (Reid & Rotfeld, 1976). Thus, the associative process is a central feature of advertising creativity (Reid & Rotfeld, 1976; Cropley, 2000).

This associative element comes up indirectly in research that studies the creative process in advertising. A recognisable pattern from advertising research is the notion that the creative avoids attacking the problem too directly knowing that something is still being processed in the mind. The solution cannot be forced.

> "During the process, you rarely get any great ideas," says the former teacher, who also holds a masters degree in psychology, "but part of your mind begins to synthesize the data in meaningful ways, even though you're not aware of it." (Poltrack, 1991)

> The first, fairly straightforward stage is as applicable in advertising as it is in science or poetry. "[The creative person] thinks in a sort of free way," writes Arieti, "he collects, he searches, listens to suggestions, lets his mind wander." (Poltrack, 1991)

Another example where the technique is to look away from the problem:

> Sailors are taught that if you think you see something when looking out at sea, you should actually look away from it. You'll see it better. (Poltrack, 1991)

What this quote from Poltrack implies is that a central element of creative

problem solving is to look at the problem indirectly by forming associations around the main problem.

In order for the associative process to begin, the creative must have something to work with (Reid & Rotfeld, 1976). A central element is needed, which then allows freedom in creating the surrounding framework. The more information the creative person has related to the problem, the greater chance he has at arriving at a creative solution (Mednick & Mednick, 1965). The central element is also needed to launch the creative process and avoid the "fear of a blank page" common to many creatives. This fear is the inability to start when you have "nothing to work with" (Cotzias, 1996; Barker, 2001). The central element will give focus for the problem to be solved and in advertising is often defined as the message or the communicational objective that will serve as the goal of the idea to be produced.

When students of creativity understand that ideas are infinite they can approach the task of creating new ideas more easily (Cotzias, 1996). Simply by starting to brainstorm, the creative person builds confidence in that he has already created "something" instead of nothing. Cotzias (1996) identifies the problem from the perspective of advertising creativity teachers, that there are no textbooks, educational tools, or formulas to teach a student to be creative, and introduces a technique for getting started in the process of creating an advertisement.

In this technique, the first step is to define what the product does and then mindmap what this means as different tangents. This allows the user to expand the thinking around the product (Cotzias, 1996). This is an example of a method that kickstarts the creative process by expanding on the product and its main features. Two main advantages of such an approach can be summarised. The first is that creatives understand that ideas are infinite and not finite.

> The world is one and the world contains infinite elements. Everything is dissimilar, and everything is interconnected. You can put your world together in an infinite number of combinations, the creative mind - the mind with a vaulting imagination - given a stated problem, can immediately begin to associate hundreds and thousands and millions of symbols that may lead to an ideal solution. (Norins, 1966)

The second is that the realisation of the first advantage removes the fear of the blank paper (Cotzias, 1996).

> The other advantage is that it takes the fear out of a blank piece of paper. Instead of waiting for a bolt of lightning from the heavens, students understand that ideas are something to be pursued. (Cotzias, 1996)

Poltrack (1991) has interviewed many advertising creatives in pursuit of trying to understand how the creative process in advertising works. Some of his findings include a creative person describing a technique for producing ideas:

> A friend of mine says, "Pick two objects that have nothing to do with each other, put them together and see if it sparks an idea," he relates. "It usually does. Unfortunately, it has nothing to do with the creative problem you're trying to solve." (Poltrack, 1991)

This is an intriguing finding as it communicates that combining two random things together will trigger an idea. The problem is that the generated idea is not related to the original problem. The possible reason for this unrelatedness could be that the two objects that were combined in order to trigger the idea had no relevance to the original problem-solving task.

In order to find a creative solution a verbally inclined person tries to find words that are related to the original subject and a visual person attempts to visualise the solution. Mednick presents a "visualizer-verbalizer" dimension (Mednick & Mednick, 1965). The visualiser tries to retrieve "complete

memorial sensory representations of the relevant concrete aspects of problems".
The verbaliser studies the problem by associating words related to the original
problem. "If the requisite elements are high in his verbal associative hierarchy
to the word horse, the verbalizer will be more likely to attain a creative solution;
the visualizer may be thrown off or at least delayed by many false leads."
(Mednick & Mednick, 1965). This finding by Mednick suggests that sometimes
words have more associative power than images.

Whether the visual or the verbal approach is better depends on the problem
to be solved. It is interesting that indeed in advertising the creative team
consists of a copywriter (a verbaliser) and an art director (a visualiser). So if a
creative problem can be solved by either one, the creative team in advertising
is prepared for both alternatives. In the following example, both a visualiser
(art director) and a verbaliser (copywriter) describe the process (Johar et al.,
2001). The verbaliser (Edgar) is pessimistic about how the process is going
and describes it as:

> Yeah, right, my typical thinking in, whenever I'm confronted with
> a project.. I'll try and like do it logically, you know, and rationally
> and get very frustrated by that and feel, you know what I mean,
> start to get feelings of apprehension and anxiety. Lot of times I'll
> just kind of like just blank out. . .(Johar et al., 2001)

Another subject (Karl) in the same study, is more positive:

> Seeing the process as one in which he generates a lot of "bad ideas"
> so that he is able to "shed those and move on to better ideas which
> come out more often at the end of a process than at the beginning".
> (Johar et al., 2001)

Associative skills are central to advertising creativity. Techniques that
assist in the beginning of the creative process often help in avoiding situations
such as the fear of the blank page.

2.2.3   Creative process inside an advertising agency

> Creativity in advertising is creativity on demand - creativity with a
> deadline - creativity within strict parameters. Where the poet may
> create to please himself and his loyal clique, the advertising writer
> must create to please a profit-conscious client and an indifferent
> public. Where the scientists may create an innovation without full
> awareness of its ultimate application, the advertising writer knows
> the ultimate application is what will make him a flash or a flop.
> (White, 1972)

Hirschman (1989) studied the advertising creative process as a task involving
many participants. How these participants experience and view the process
depends on their position in the process. The product manager as the client is
responsible for the business aspects of the process such as the profitability and
successfulness in capturing market share for a particular product. The account
manager in the agency views the creative process as a means to producing a
creative product that needs to be sold to the client. The copywriter and the art
director are at the heart of the creative process as it is their task to transform
the communicational objective into an idea and produce the advertisement.

A description of this process reveals some intriguing results. A common
theme of a creative process is one where many ideas are produced, the best ones
kept and the bad ones discarded (Hirschman, 1989). A copywriter describes
this process as:

> I just do a lot of ideas . . . maybe eight or nine, ten ideas, then I
> might edit it down to five ideas. And then from those five ideas, I
> might present four . . . (Hirschman, 1989)

The suggestion that it is advantageous to produce a great number of ideas
is supported by other research (Johar et al., 2001; Campbell, 1960; Batra,
Myers, & Aaker, 1996). In a similar fashion the art director describes the
process as:

> We close the door with our little creative workplan; we hang it up
> on the wall and then we start to create ideas. (Hirschman, 1989)

Role-based models of the creative process present the client and agency account executives as managers of the idea, and the creatives, the copywriter and the art director, as the creators. Furthermore, the managers will agree to a more conservative version of the idea than will the creatives (Hirschman, 1989; Kover & Goldberg, 1995). The copywriter and art director engage both separately and together in some form of idea generation such as brainstorming and often apply the general framework of a creative process similar to those described by Nagasundaram and Bostrom (1994).

Kover and Goldberg (1995) have studied whether or not copywriters do have a certain implicit theory of communication. According to research, because the modern consumer pays less and less attention to advertising it is increasingly difficult to grab the viewer's attention (Kover & Goldberg, 1995). Thus, the advertising creative tries to create different "hooks" to keep the audience interested and awake their curiosity. To break through this initial resistance for advertising clutter it is necessary to create interesting messages that penetrate the normal everyday overload of information. Kover categorises a few examples of such techniques:

Subverting Presenting something that is disconcerting or charming, something unexpected enough to slip past the guard of indifference.

- Example: Seduction (instead of showing the beauty product, start from the effect of the product, hip, or shoulder of a woman).

Forcing Jolting the viewer into paying some initial attention.

- Example: New reality (an advertisement for anti-lock brakes; concentrate on the water as a threatening element instead of the product, the anti-lock brakes).

- Example: Teaser (give incomplete information, make the viewer participate, seek out the answer himself).

All copywriters in a study by Kover and Goldberg (1995) rejected advertising that forces its way to the viewer's consciousness and preferred a more indirect or subtle method. According to Kover, the message is a dialogue between the copywriter and the imagined target audience or person. The creative person attempts to find the attributes and associations between the product, and realise a wider framework of the audience based on their own experiences and knowledge; they then test several different approaches. A description of a copywriter describing the creation of an advertisement for a car reveals this insight:

> (I was in) Edmond, (Oklahoma). I remember, you know, at the age of 16 sitting in a new car showroom looking at an SS-396. You know, this was about 1968, and it was the most beautiful car I could ever imagine. And so when I wrote the stuff, I wanted to appeal to that 16-year-old in all of us. (Kover & Goldberg, 1995)

The creative taps into what that person considers the universal needs and wants of people: the need to be accepted, wanted, sexy, rich, well-known. The goal is to ensure that most of the target audience can associate with these needs.

If the creative process is a dialogue between the creative and the imagined internal audience, the writer presents a personal part of himself or herself in the creative product; possible critique of the work is directed not only towards the ideas presented but also towards the writer himself (Kover & Goldberg, 1995). As a result, the creatives notoriously defend their work down to the smallest detail (Kover & Goldberg, 1995). This is especially true since according to many creatives the accounts people, or clients involved in judging their creative work, do not understand creativity at all (Fletcher, 1990).

Creatives are sensitive about their ideas being criticised and do not have the ultimate say in what is ultimately published because the client has ownership of the creative product. Therefore, creatives have developed a set of processes or tools to manage defending their work and getting it approved. These "games" have been described by Kover and Goldberg (1995) as:

Agonistic (combative) game The creative actively combats the account management and client and defends their ideas. This requires open relationship between agency and client.

Confrontation reduction Anticipating the needs of account people and client and tailoring the work accordingly.

Sneak attack Pretending to do what the account people or client are saying, but secretly sticking to own ideas and presenting them hoping they will not notice and that they will see that theirs is the "right solution".

Aleatory game Leaving something to chance or luck, hoping that it will work out.

These games reveal some of the complexity of the creative process in advertising agencies and a possible reason for the agencies being described as conservative despite their inherently creative nature (Ford, 1996; Kover & Goldberg, 1995). In an ideal situation, the creatives should concentrate on the best way to communicate the desired message to the receiver. It is possible that this anticipation of the challenges during and after the creative process leads to taking shortcuts or adjusting the creative process according to the anticipated feedback externally from the client or internally from account management.

2.3 Attempts at tools for advertising

> Once again, it is hard to imagine any theory that could provide
> necessary and sufficient conditions for catchy advertising slogans.
> Good advertising slogans, like good jokes, and good lines of poetry,
> are perceived as good because of the myriad subconscious pressures
> and associations gathered in a lifetime of experiencing the world.
> (French, 1990)

It is well-known that the creative process is fuelled by the background and experience of the creative person. For advertising to reach its goal, the associations of the creative person must match those of the target audience. When the communicational objective is transformed into a creative idea the target audience must be able to associate with this transformation so that the communicational objective is successfully communicated.

Most of the methods traditionally used for developing creative ideas in advertising follow a process of enhancing the creative process in general by providing a general structure, framework, or a way of thinking to support the creative process. These methods can then be applied to any creative task with a goal to increasing innovation. Rather than analysing the creative process from a general point of view this section focuses on methods that attempt to create tools specifically for supporting the creative process in advertising.

This section is divided into two subsections. First, Goldenberg et al.'s template based method, one of the unique methods developed for supporting the generation of new ideas in advertising (Goldenberg et al., 1999) is discussed. Second, a heuristic method (ADCAD) is presented.

It is noted that very few scientific or academic attempts were made to study how specific tools could be used in the context of idea generation in advertising.

2.3.1   Creativity templates

Goldenberg et al. (1999) attempted to reverse-engineer the creative process of producing advertisements. The theme of their study is that "Certain patterns are identifiable, objectively verifiable, widely applied, and learnable and that these patterns, termed templates, can serve as a facilitative tool that channels the ideation process, enabling the person to be more productive and focused" (Goldenberg et al., 1999). In their attempts to systematically produce creative ideas in advertising, Goldenberg and his colleagues focused on finding, and recognising patterns from award-winning advertisements. These identified patterns were then developed into templates that can be used as a tool for producing creative ideas for advertising.

Goldenberg's method for producing advertisements was based on a study of 200 highly evaluated print advertisements. From these, Goldenberg concluded that 89% of them fall into one of six key creativity templates. In another study, Goldenberg compared 200 winning and 200 non-winning advertisements (Goldenberg et al., 1999). Fifty percent of the winning advertisements fell into the six categories whereas only 2.5% of the non-winning advertisements fell into the six template categories. The hypothesis behind this method for producing creative advertising is that complete freedom is not the most effective way to enhance the creative process. Instead, a framework involving specific constraints should be used.

A similar argument in favour of constraints has been made by Johnson-Laird (1988), where it is argued that since creative problem solving happens inside a particular domain, it is necessary to introduce constraints to define relevance for the creative task. The claim that constraints are useful is surprising as methods with no boundaries and no critique, such as brainstorming, focus groups or free association, are traditionally considered

essential to creativity. This notion of constraints within a framework is supported by Simon (1966), who stressed the importance of regularity in the creative process and the need to form a solution plan. Goldenberg also claims that it is useful to promote routes that have been proven to lead to productive ideas and avoid those that do not.

The concept of structured creativity does already exist in some techniques such as morphological analysis and resonance, but these methodologies are quite general and do not provide specific and generalisable guidelines on how to create a specific new idea or advertisement. Similar template approaches that identify relational structures have been identified in other fields of science such as Minsky's (Minsky, 1985) study in artificial intelligence. But the background, schemes, and implications of structures developed are essentially different in Goldenberg's work (Goldenberg et al., 1999).

A critical analysis of Goldenberg's methods reveals some of its limitations. Goldenberg's scientific method for producing creative advertisements is built upon raw material from highly evaluated advertisements in advertising award competitions. Focusing on award-winning advertising is criticised by Johar et al. (2001): "Even when such consequences as Clio-type awards ensue, an advertisement may succeed only in meeting a professional prizewinning standard rather than achieving the client's communication objectives" (Johar et al., 2001).

Essentially, Goldenberg's method extracts different templates from the advertisements to produce ideas. These ideas should then be able to connect with the slice-of-life of the target audience. However, this slice-of-life is constantly changing and adapting to new trends and changes in our society. Thus, the fact that something has worked or proved to be a good idea in the past is no guarantee that it will work in the future. It is also unclear how constant these templates generated by the authors prove to be over time.

Goldenberg's method offers an interesting but limited scope for producing fresh, unique and creative advertisements. The method is not capable of constantly using fresh data to generate ideas and thus cannot take the leap from being explorationally creative to being transformationally creative. This view is supported by Johar et al. (2001):

> We claim that too many constraints occur when - for whatever reasons - a team relies on a single formula or pattern, perhaps one that has proven successful in the past or that is temperamentally congenial to the cognitive styles and working habits of the team members. In formulaic thinking, a team shortcuts the generative stage of creativity and tends to satisfice by selecting a convenient story or theme that allows for completion of a task in the allotted time span but that negatively influences the outcome. Adherence to one thematic formula may lock creative partners into self-imposed boxes that limit their freedom in terms of the range and flexibility of their imaginative outputs. The consequence may be a less successful advertisement - one whose creators have painted themselves into a corner that not only restricts the scope of their vision, but also limits the effectiveness of their expression, resulting in an ad that may be less than optimally appropriate to the product or less than fully reflective of the brand. (Johar et al., 2001)

Goldenberg's method of producing creative advertisements by recognising patterns from the data is explorational (Boden, 1998), in that it explores the conceptual space and generates new ideas based on the structure of the space. This method often produces ideas that can be considered novel and unexpected. This implies that the ideas are what Boden calls P-creative (Personally creative), meaning that the person who takes part in the task of creating ideas could not have come up with the new ideas before (Boden, 1998, 2003).

2.3.2 Expert systems (ADCAD)

An example of a heuristic method or tool to assist advertising design is ADCAD (ADvertising Communication Approach Design), an expert system developed

to assist advertisers in formulating copy strategy, advertising objectives, and selecting communication objectives (Burke, Rangaswamy, Wind, & Eliashberg, 1990). ADCAD is essentially a decision-making tool that synthesises prior research and experience into a knowledge base. This base then becomes an expert system by combining facts, rules and models to assist in advertising design decision making.

By nature, the ADCAD is very different from what this thesis proposes as a tool for triggering creative ideas. ADCAD is more involved in applying decisions on many levels of marketing issues such as positioning, message characteristics and presenter characteristics. As a decision-making tool ADCAD oversimplifies an inherently complicated process by relying on rules, facts, and models that are very difficult to quantify/input into a single decision-making tool. ADCAD is more a tool for the marketer to make decisions about what and how the advertising should communicate than a tool for actually providing more power into the creative process. ADCAD also requires constant updating of its very complex database to improve the system and keep it up-to-date. Some limitations of ADCAD are:

- ADCAD reasons in one way only, whereas the creative person can reason in many different ways. "Formats and techniques evolve as the conceptual idea evolves. The idea dictates formats and techniques" (Burke et al., 1990).

- ADCAD relies on historical facts, rules and research (Burke et al., 1990). But advertising is by nature very strongly influenced by current surrounding culture. Thus, many rules that have produced good results may not work at all even in a setting that might appear seemingly very similar. Importantly, ADCAD has no mechanisms for creative thinking. "It makes recommendations based on what has been found in the past

to be effective in situations with the same set of characteristics" (Burke et al., 1990).

For further reading about expert systems in advertising and marketing see Liebowitz (1998).

2.3.3   Janusian

Janusian thinking is another view that attempts to find logic in the "ambiguous, elusive, and even somewhat mysterious" subject of creativity, and apply this logic in advertising idea generation (Blasko & Mokwa, 1986). Janusian thinking is a framework that emphasises the capacity to "conceive and utilise two or more contradictory concepts, ideas, or images simultaneously" (Rothenberg, 1976). Examples of Janusian thinking outside advertising include composer Schoenberg creating the twelve-tone musical scale based on the notion of consonance and dissonance, architect Frank Lloyd Wright developing his style based on "affirmative negation" and Watson's discovery of the "double helix" structure of the DNA by imagining identical but spatially opposed forms.

Janusian thinking is also related to Koestler's "bisociation" where:

> A bisociating mind freely confronts and actively seeks to uncover inherent paradox and resolve it through a synthesis of previously unconnected thought patterns or frames of reference. Thus, the creative mind actively seeks novel connections and uses apparently divergent ideas, insights, or perspectives to generate these convergent connections. A synergistic, new whole is created by each connection or set of connections. (Blasko & Mokwa, 1986)

Getzels and Jackson (1962) highlight the element of Janusian thinking in divergent and convergent modes of thinking where the goal is first to generate many from one (divergence) and then one from many (convergence). Blasko and Mokwa (1986) present many examples of Janusian thinking found in advertising. A study by Beltramini and Blasko (1986) revealed that 25% of

Advertiser	Headline or Campaign Themeline
Delta Faucets	We're <u>First</u>, Because We <u>Last</u>
Florida Tourism	When You Need It <u>Bad</u>, We've Got it <u>Good</u>
Spic 'N Span	<u>Yesterday's</u> Clean For <u>Today's</u> Floor
Carl's Jr.	Our Prices are <u>Down</u> at Sun-<u>Up</u>
Whirlpool Washers	<u>Tough</u> on Dirt. <u>Gentle</u> on Fabrics
Raid Indoor Fogger	<u>Alive</u> with Bugs, <u>Dead</u> with Raid
Olympic Paint	We've got the <u>Inside</u> on <u>Outside</u> Protection

Table 2.1: Examples of Janusian thinking in advertising (Blasko & Mokwa, 1986).

the headlines on advertisements that were judged as creative applied Janusian thinking by using opposite words or phrases. Table 2.1 presents examples of Janusian thinking in advertising from Blasko and Mokwa (1986).

Janusian thinking is an important concept since it presents a simple but powerful technique that can be applied in idea generation. Also, as methods of natural language-processing advance, better tools for the computational modelling of opposing concepts can be developed.

2.4 Conclusions

The creative process of producing ideas in advertising is complex and rarely studied. This has two implications: first, since little is known about how creativity in advertising works, information for developing a tool is limited. Second, there is an obvious need for more research in this area to ensure the research-based advancement of creativity in the field of advertising. However, despite the lack of research in this area, some interesting observations were made. I conclude by discussing what specific implications these observations could have for a tool developed for supporting idea generation in advertising.

Section 2.1 described creativity as a mysterious phenomenon. Thus, building a model of creativity is challenging. Models of creativity have been

developed to describe creativity on a social (Csikszentmihalyi, 1999) and individual (Simon, 1982) level. Since this investigation centres on how to develop a tool for generating ideas, the focus is on the individual level where the ideas are being created. Later these ideas could be evaluated on the social level. However, it is important to notice that unless an idea reaches the sociocultural level described by Csikszentmihalyi (1999) there is little confidence in knowing if the actual purpose of generating the ideas was indeed reached, which is to communicate the original communicational objective as a creative idea.

Section 2.2 described the complexity of creativity in an advertising agency, which is affected by many variables making a theoretical approach to the problem even more challenging. Nevertheless, the task of creativity in advertising is essentially one of problem solving. The research suggests that a solution in the problem-solving task of advertising cannot be forced, and the problem should be approached indirectly. Thus, the mind of the creative must be allowed to wander around the problem freely. Also, an indirect or subtle method of communicating the message to the target audience is preferred by advertising creatives.

While tackling the problem of developing a creative idea the creatives often experience a "fear of the blank page". The beginning of a creative process is thus often the most difficult one. Thus, a central element can be helpful to kick-start the creative process and focus on the problem at hand. Other triggers will support the state of flow and ensure that the process keeps moving. I argue that this central element is the communicational objective stated simply as a sentence and will act as the starting point for finding more relevant triggers.

Existing computational methods for enhancing the creative process in advertising focus on the creative product. I propose that the focus should be on the information input into the creative process that will help to provide the relevant triggers for developing ideas as an "understanding, insight, or

some primitive forms of solution to a problem" (Sugiyama, Misue, Watanabe, Nitta, & Takada, 1996) before the creative product is produced. Combining two unrelated items often triggers an idea. I also propose that the search for these unrelated items is tied to the original communicational objective to ensure that a link between the generated idea and the message exists.

The associative theory of creativity describes creativity as "The process of bringing previously unrelated facts into associations so that previously unrelated relationships between them become apparent" (Reid & Rotfeld, 1976). An associative process is also a central feature of advertising creativity and studies show that associative skills can enhance creativity and an advertising creative with better associative skills can produce more creative advertising. The advertising industry could benefit from a Creativity Support Tool that considers the elements of the associative theory of creativity.

Mednick presents a verbaliser visualiser dimension of problem solving. Similarly in advertising a creative team consists of a verbaliser (copywriter) and a visualiser (art director). Thus, the team is designed to solve the problem both from a visual and a verbal viewpoint. However, it is suggested that words have more associative power than images. It can be argued that a word is the simplest form of communication and an idea in its purest form. An image is already a representation of an idea. The importance of words is highlighted, and words are often described as ideas themselves. J. Young (1972) describes words as "ideas in a state of suspended animation".

The following chapters will present a coherent view of how these notions can be integrated into a tool developed for creating ideas in advertising.

Chapter 3

Creativity Support Tools

> Thinking consists not of happenings in the head (though, happenings there and elsewhere are necessary for it to occur) but of a traffic in . . . significant symbols. (Geertz, 1973)

The term *Creativity Support Tool*, has been used loosely in the literature and includes examples that have traditionally been categorised under Creativity Support Systems and Idea Processors, such as Idea Generator Plus (Nierenberg, 1987), IdeaFisher (Robbin, 1990) and Axon 2000 (Shneiderman, 2000), or Decision-Support Systems (where Holsapple and Whinston (1996) predicted that knowledge-based systems should operate as co-workers and have the ability to "recognise needs, stimulate insights and offer advice"). Initially, these tools were computer programs developed to produce and organise ideas in order to enhance human creativity (Chen, 1998). An idea is an "understanding, insight, or some primitive forms of solution to a problem" (Sugiyama et al., 1996). However, in recent years, the objectives for developing such tools have expanded. For example, Shneiderman et al. (2006) discussed three objectives for the development of these tools:

1. Improve the experience of the creative person.

2. Improve the creative products.

3. Support the improvement of the process by providing tools that are designed with particular functional requirements in mind.

Some of these general requirements were described by Edmonds and Candy (1993) and Shneiderman et al. (2006) and can be summarised as: Provide a holistic view of the data, possibility to suspend judgement and revisit problem, ability to make unplanned changes, ability to formulate and solve problems and reformulate the original problem space. Nonetheless, the use of these tools helps change the way ideas are created and as our experience grows in developing and using them, it might also help us to better understand the mysterious process of creativity as discussed in the previous chapter. Thus, the development and use of these tools have become an increasingly important subject of study. Within the last decade, they have also become an important subject of study for human-computer interaction researchers (Johnson & Carruthers, 2006).

This chapter will focus on two aspects in the development of Creativity Support Tools. Section 3.1 discusses the different roles these tools have in the creative practice. Section 3.2 presents some of the most interesting tools developed specifically to support generation of new creative ideas. Section 3.3 concludes this chapter by presenting a synthesis of the most significant elements that should be integrated in a Creativity Support Tool developed for creating new ideas.

3.1   Multiple Views of Creativity Support Tools

The arrival of modern technology has opened up new possibilities for computational tools in the creative practice (Edmonds et al., 2005). This has led to the development of Creativity Support Tools for a variety of purposes. Four different views of such a tool are described here: creativity support

(Section 3.1.1), multiple support (Section 3.1.2), search (Section 3.1.3) and brainstorming (Section 3.1.4).

3.1.1   Creativity support

This view draws implications from theoretical studies about the nature of the creative process. One important observation is that creative thinking is often considered as a process with two phases: generative and exploratory (Finke, Smith, & Ward, 1992). The generative mode focuses on producing new ideas by employing divergent ways of thinking where the questions are often open-ended and the goal is to generate as many answers as possible by employing techniques such as remote association and pattern switching. The exploratory mode focuses more on convergent thinking where the objective is to narrow down the problem to a few options and refine the idea into its final form (Kerne et al., 2007).

Consequently, many Creativity Support Tools were developed to focus on either the generative (divergent) or exploratory (convergent) mode of thinking. Johnson and Carruthers (2006) recently presented a compelling argument for a possible Creativity Support Tool that "could be designed to aid divergent thinking in the early phases, and also allow users to operate freely on various projects in parallel, before supporting the convergence to a single solution." Thus, the dominant characteristic of a good Creativity Support Tool is that it should support divergent thinking (creating many ideas) and be able to select and narrow down on the best of these (convergence).

Massetti (1996) presented two hypotheses for testing generative and exploratory modes of thinking. The first hypothesis was that a generative Creativity Support Tool would produce ideas that are more novel than those produced with an exploratory tool or no support. The second hypothesis was

that an exploratory tool would produce ideas that are more valuable than those produced with a generative tool or no software support. However, his findings did not support either hypothesis, but rather that both modes of thinking will support creative thinking equally well.

The implication of this study is that the nature of the tool is dependent on the creative task and thus supports the notion that there is no one method or technique that performs best at supporting creativity. However, when focusing on a domain-specific task such as one for generating new ideas in advertising, research has shown that particular techniques such as the associative theory of creativity work well; the creative person in advertising has been shown to produce more creative work if known to exhibit good associative thinking skills.

Johnson and Carruthers (2006) made two further observations from studies of creativity. The first observation is that according to Boden, creativity involves a transformation of a conceptual space (Boden, 1998). Boden introduced the concept of transformational creativity as one of three types of creativity, the other two being combinational (exploring analogies related to the original problem) and exploratory (generating new ideas by exploring structured conceptual spaces) creativity. Scientists, artists and musicians often take advantage of exploratory creativity in their respective fields. For example, the studies of Bach's style of composing or the architecture of Frank Lloyd Wright's Prairie Houses fall into this category.

Transformational creativity means transforming the actual search space allowing for ideas that have possibly never arisen before. Ideas resulting from transformational creativity are what Boden calls H-creative (historically creative, new within the context of the whole human history). According to Boden, transformational creativity requires radical changes to the conceptual space. However, it is not clear how a conceptual space can be defined. This problem of defining transformational versus explorational creativity and

defining the conceptual space is discussed in detail in Ritchie (2006). Furthermore, some controversy surrounds Boden's preference for transformational over explorational creativity. Bundy (1994) and Pind (1994) challenge the claim that transformational creativity can lead to more creative results than explorational. For example, should one consider changing the rules of chess to be more creative than an unusual but smart legal move (Pease, Winterstein, & Colton, 2001)?

Thus, the first implication from the notion of transformational creativity is that the tools should allow the user to extend or modify the domain knowledge and allow both exploration and transformation of conceptual spaces.

The second observation is that creative ideas are often produced in a state of mind that involves intense concentration while performing a challenging activity where the level of difficulty is between anxiety and boredom. This state of mind is defined as "the flow" by Csikszentmihalyi (1990):

> Over and over again, as people describe how it feels when they thoroughly enjoy themselves, they mention eight distinct dimensions of experience. These same aspects are reported by Hindu yogis and Japanese teenagers who race motorcycles, by American surgeons and basketball players, by Australian sailors and Navajo shepherds, by champion figure skaters and by chess masters:
>
> 1. Clear goals: an objective is distinctly defined; immediate feedback: one knows instantly how well one is doing.
> 2. The opportunities for acting decisively are relatively high, and they are matched by one's perceived ability to act. In other words, personal skills are well suited to given challenges.
> 3. Action and awareness merge; one-pointedness of mind.
> 4. Concentration on the task at hand; irrelevant stimuli disappear from consciousness, worries and concerns are temporarily suspended.
> 5. A sense of potential control.
> 6. Loss of self-consciousness, transcendence of ego boundaries, a sense of growth and of being part of some greater entity.

7. Altered sense of time, which usually seems to pass faster.

8. Experience becomes autotelic: If several of the previous conditions are present, what one does becomes autotelic, or worth doing for its own sake.

The second implication then is that a Creativity Support Tool should promote this state of flow (Selker, 2005; Csikszentmihalyi, 1988). Both these implications could be synthesised by saying that the tool must be able to:

- Manipulate information related specifically to the original task.

- Act in a goal-directed manner, the goal being to create a new creative idea.

Thus, the support tool cannot have a passive role in the creative process but a process of engagement should exist between the user and the tool.

3.1.2 Multiple support

Several researchers have suggested multiple roles for Creativity Support Tools (Chen, 1998). L. Young (1987, 1989) suggested a three-level support:

1. Secretarial level (computer as electronic blackboard).

2. The framework paradigm level (a framework for organising the user's thoughts to serve as stimuli and guide to the user).

3. The generative-level (the computer can synthesise and display new ideas).

Johnson and Carruthers (2006) divide Creativity Support Tools based on the tasks. The first class includes tools that support a creation process where the output is non-novel and unsurprising; the process leading to these outcomes can be described as repetitive (Creation-Common-place). The second class

includes tools that focus on domain-specific tasks where the creative artefact is produced in a specific domain such as the arts, culture or media (Creation-Creative Domain). The third class (Creative-Combination or Creative-New) describes a set of tools that support the creative process by allowing the user to brainstorm, generate ideas and solutions, doodle, tinker, evaluate and reflect upon the solutions either individually or at a group level.

In support of a creative process the computer can play many different roles depending on the creative task (Shneiderman et al., 2006; Candy & Edmonds, 1997). Lubart (2005) presents four different categories of how these different roles could be defined. The categories Lubart presents are: computer as nanny, pen-pal, coach or colleague.

In the role of the computer as nanny it is suggested that computers can inspire creativity by observing the creative process and controlling the workflow by setting deadlines and monitoring them or reminding the creative person to take regular breaks from the task. The computer can also take care of some periodically important tasks such as backing up the creative work.

In the role of the computer as pen-pal, the computer acts as a networking tool where the creative act can be a collaborative project and the computer is needed to communicate the creative ideas among the participants. Examples of these technology roles are Personal Digital Assistants (PDA) that can feed into a global pool of ideas, or distribute data via e-mail or electronic conferencing software.

Computer as coach describes an expert system that assists the user in presenting a variety of creativity-enhancement techniques to jump-start the creative process.

The most ambitious and intriguing vision of human-computer interaction in a creative process is the computer as colleague, where the creative process is essentially a dialogue between the computer and the user. This idea is based

on attempts at creating artificially creative systems where the conclusion has been that inevitably until we understand what creativity really is, the user will always play a part in the creative process. Thus, these artificially creative programs have been regarded as "failed", as they cannot exhibit creative behaviour without user intervention.

Examples of such programs include Aaron the Virtual Painter (Cohen, 1995), EMI (Experiments in Musical Intelligence):(Cope, 1996), RKCP (Ray Kurzweil's Cybernetic poet):(Manurung, 2004) or recreating the architectural grammar of Frank Lloyd Wright's Prairie Houses (Saunders, 2002). Most, if not all of these examples have been met with both praise and criticism (Hofstadter, 1995). The trouble lies in defining exactly what these software promise they can do, and what they actually deliver. At the same time, however, these programs have evolved into examples of human-computer interaction where creative products are developed by a process where the human and the computer interact in the process of creation: instead of intervening the human interacts. This notion is related to "random or semi-random search mechanisms to generate novel unconventional ideas" (Lubart, 2005). While the computer is better at performing data-intensive searches, human associative skills are better at selecting the most valuable nuggets of information from the data (Minsky, 1985; Burleson, 2005).

A combination of these skills could be a human-machine hybrid system, also described as human-computer symbiosis by Chen (1998), that exhibits meta-creativity as a program that gathers information and reflects and transfers it through the system in order to enhance the creative collaboration between the machine and the user (Burleson, 2005; Buchanan, 2001; Edmonds et al., 2005). A human-machine hybrid system is well suited for the domain of creative design where a cycle between analysis (reflection) and synthesis (engagement) takes place (Sharples, 1999). An example of such a cycle is often observed in idea-

generation processes in advertising where the creative person or team goes through the cycle of reflection and engagement often several times during the creative task of producing an idea and ultimately an advertisement.

Advertising is described as a non-routine creative design process that results when one or more new variables are introduced into the design. However, these processes can be divided into individual processes that can be built into computational models. From a computational point of view Gero (2000) introduces the most promising:

Combination Adding two sets of design ideas.

Transformation Altering one or more variables by an external process.

Analogy Matching specific coherent aspects of the conceptual structure of one domain or transferring to another domain.

Emergence Recognising extensional properties of a structure beyond its intentional ones.

First principles Relying on knowledge used abductively to relate function to behaviour without the use of compiled knowledge.

As a non-routine creative design process, advertising has the most potential where emergence arises as the most prominent process for producing creative ideas (Kerne et al., 2007).

3.1.3 Searching for unexpected information

The beginning of a creative process involves a phase where information and search play an important role in generating the raw material, which the mind then starts to process. Examples of different roles that emphasise the role of search in their creative processes include novelists, artists, journalists, or

advertising creatives (Shneiderman et al., 2006; Kerne et al., 2007). A task that involves finding, combining, and developing a new mental model around it is defined as an information discovery task (Kerne et al., 2007). A common example of computationally discovering information is that of conducting a search on the Internet. Although search engines are commonly used as examples of tools that assist in searching for new information, it can be debated whether a search engine by itself is a Creativity Support Tool. Searching for new information is a part of the creative process, but the generation of new ideas is not their main goal.

What is interesting is that most of the Internet search engines are built for a specific purpose, to find a particular piece of information as efficiently as possible (Shneiderman, Colwell, Diamond, Greenhalgh, & Wulf, 2007; Otsubo, 2007). Google is based on the idea that it indexes the paths leading to a specific page and ranks the pages accordingly. Thus, the search results model past behaviour with the most relevant "hits" displayed first. However, sometimes the purpose of the search conducted by the creative person is not clearly defined or is deliberately vague (Erdelez, 1999). The goal of this serendipitous searching is to see the information in a new light in order to form relationships between items that did not previously exist (Kerne et al., 2007). Associating the items in a new way can lead to new creative ideas, studies having shown that conceptually combining data leads to the emergence of novel properties (Kerne et al., 2007).

An example of a tool that searches for unexpected information is Goromi-Web (Otsubo, 2007). Goromi-Web displays the words most commonly used together and displays the text and images in a floating manner. The challenge for Goromi-Web is that it still might not provide enough creative freedom and room for serendipity for the user as it groups the words and images by relevance and occurrence. What is argued in the later chapters is that only

the user will be able to make the "right" connections between the data.

3.1.4 Traditional vs. electronic brainstorming

According to Linus Pauling, "The best way to get a good idea is to get a lot
of ideas" (Jessop, 2002). Brainstorming is one of the best-known divergent
techniques to create a large number of ideas rapidly, traditionally in a group
setting as first proposed by Osborn (1957) in the field of management science.
It is an example of a paradigm-preserving creativity technique meaning that
instead of viewing the problem from different perspectives the focus is on
producing a large number of related ideas so that the probability of finding one
or more viable ideas increases (McFadzean, 2001; Jessop, 2002). Brainstorming
supports a free flow of related ideas that is often referred to as streams flowing
down the hill where the ideas form in a linear form as each new idea acts as a
stimulus for another idea that in turn triggers another idea (McFadzean, 2001).
Thus, the paradigm of the original viewpoint of the problem is preserved. But,
what does brainstorming mean in the context of Creativity Support Tools?

   Brainstorming as a technique for producing ideas does work in that it
produces a large number of ideas. But, numerous academic studies have
been able to prove that nominal groups (no communication between the
individuals working on the ideation task) almost always perform better than
the interacting brainstorming groups (communication between individuals)
(Nagasundaram & Bostrom, 1994). Furthermore, research has shown that
Electronic Brainstorming Systems perform better than manual and nomi-
nal brainstorming groups due to parallelism (enhanced productivity) and
anonymity (Hilliges et al., 2007). Regardless of the results of these studies
the traditional brainstorming technique with interacting groups is still widely
used and relied upon, especially in the business world (Chen, 1999). According

to Ivanov the idea of electronic brainstorming in organisations has caught on "sluggishly" (Ivanov, 2007).

Why is Electronic Brainstorming not more widely used despite studies showing it to be more powerful than traditional methods? In order to analyse this problem we must consider both the social and productivity aspects of brainstorming. Electronic brainstorming produces better results in the user being able to generate more ideas. However, brainstorming is often also considered to involve and foster a team-building aspect, its members engaged in the problem-solving process and thus better able to operate as a team. Hilliges et al. (2007) present a model where both elements are incorporated in a large wall display that a group can easily use. Results of this study show similar results to a traditional paper-based manual brainstorming system, and the authors identify the ability to store ideas and processes digitally as an advantage over the traditional method.

3.2 Computational models for supporting idea generation

In this section, I present an overview of some of the most interesting computational tools and theories that specifically support idea generation, often within a particular domain. This overview excludes some of the examples described by Shneiderman et al. (2007) as creativity tools such as Google Maps, Wikipedia, spreadsheets, visual outliners, story development tools, text-based outliners, and questioning programs. The focus is on computational models and theories that specifically support the generation of new creative ideas. The users of such programs are defined as inspirationalists that "Seek to liberate the mind by making free associations to related concepts" (Shneiderman, 2000).

3.2.1 Analysis and discussion

IdeaFisher. IdeaFisher is a Creativity Support Tool with a generative focus (Chen, 1999). Entries in the IdeaFisher database are cross-referenced by concept and association. The user chooses a word, and is shown the associations between the chosen word and associated words in the database. The software contains an idea bank with over 750,000 possible associations of topics, phrases, and words (Robbin, 1990). IdeaFisher also has a question bank that aims to support specific thought processes corresponding to flexibility, memory retrieval, and pattern switching. By using IdeaFisher the user can assist divergent thinking and remote association by scanning the listed topics and ideas (Massetti, 1996).

In IdeaFisher the associations are built into the dictionary, but the nature of associative thinking suggests that these connections cannot be predefined; rather they exist in the mind of the user, and the tool should allow the user to make these connections.

GENI. (GENerating Ideas), from stimulating ideas, (MacCrimmon & Wagner, 1994). GENI is based on the notion that in order to make decisions one must have good alternatives from which to choose. These alternatives are generated by making connections between the problem elements. GENI assists in making these connections by introducing four types of connection processes:

1. Relational combinations, where the elements of a problem are combined by randomly selecting relational words.

2. Ends-means chains, which focus on deriving ideas from goals in a top-down manner.

3. Idea transformation, where the user is asked to transform a previous idea by combining it with a transformation term such as "change temporal

sequence".

4. Metaphoric connections, which uses a database of image-rich poetry to force the user to connect the problem to a remote context.

Results of a study conducted to measure GENI's effectiveness conclude that "forced connections work" but cannot provide evidence of what techniques work better in particular circumstances than others, or why more creative individuals are able to benefit more from using the software than less creative ones. Perhaps the reasons behind this mystery lie in the better associative ability of the creative person to be able to produce more creative work as observed in the domain of advertising by Reid and Rotfeld (1976).

COGMIR. COGMIR is a concept by Chen (1996, 1998) that is based on generating new documents through analogical reasoning using structure mapping. It is not considered to be a traditional idea generation system, but it shares many familiar characteristics of idea processors such as its hierarchically structured conceptual memory, the ability to search a knowledge base and to create relationships between entities and documents. In COGMIR, a generated idea is defined as a suggestion. An interesting difference between COGMIR and conventional idea processors is also identified. This is the small number of suggestions it generates, compared to the traditionally large number of ideas generated by an idea processor. These suggestions are claimed to be of better quality as the suggestions are evaluated one by one, and only the most promising ones are processed further.

IdeaGenerator Plus. In IdeaGenerator Plus the user performs a sequential analysis of the problem and solution finding process. Seven techniques are available: examine similar situations, examine metaphors, examine other perspectives, focus on goals one by one, reverse the goals, focus on the people

involved, and make the most of the ideas (including rephrasing some ideas, weeding out others, and grouping similar ideas),(Chen, 1998; Nierenberg, 1987).

Axon 2000. Axon 2000 is a visualisation tool that allows the user to change colour, shape, size, scale of the objects and also create relationships between objects. The objective is to create complex flowcharts and diagrams. This visualisation of elements reinforces the short-term memory and helps one to represent and solve complex problems. Axon also includes an integrated Checklist Management System and a library of problem-solving strategies and words of wisdom for capturing and transferring knowledge (Shneiderman, 2000).

Emergent Media Environment (EME). EME focuses on supporting the emergent stage of the creative process. The goal of this system is to "Support the generation, collection, organization, and presentation of ideas." It also advises on the divergence and convergence of the ideas (Sugiyama et al., 1996; Chen, 1998).

Metaphor Machine. Young's Metaphor Machine focuses on automatic metaphor generation from a relational database. It is designed to provide an interactive support to human thinking processes and places emphasis on using metaphors. The role of metaphors in creative thinking is described as "figures of speech in which one kind of an object or idea is used in place of another to suggest some likeness between them" (Nishimoto, Sumi, & Mase, 1996; L. Young, 1987). Young presents examples of metaphors such as "My love is a red rose" or "My soul is an enchanted boat." In computer science, the Control Unit of the CPU is often referred to as "the traffic policeman of the computer".

Other
synonym lists

Initial object
chairperson

synonyms for
expedite

Predicates
1 chairpersons lead
2 chairpersons coordinate
3 chairpersons organize
4 chairpersons moderate
5 chairpersons expedite

- execute promptly
- accelerate
- cut through
- facilitate
- dispatch
- send out

Predicates in the world of tools

A knife is a
metaphor for a
chairperson

Hammers bang
Tweezers pull
Scissors cut
Knives cut through
Pencils write
Erasers erase
Computers compute
Printers print
Keys open
Brushes smear

Other
predicate-described
worlds

Predicates in the world of entertainment

An MC is a metaphor
for a chairperson

Actors play parts, imitate,
amuse, divert

Magicians trick, fool, amuse

Master's-of-Ceremonies
announce, bring on, dispatch,
sign-off

Dancers dance

Singers sing

Figure 3.1: Young's metaphor machine, reproduced from (L. Young, 1987)

The use of metaphors is also key in Gordon's Synectics method where the goal is to first "make the familiar strange" and then "the strange familiar" (L. Young, 1987; Gordon, 1961). The emphasis in this method is in the power of using metaphors in combining disparate ideas in the divergent phase of the creative process. These metaphors are generated by organising lists of predicates into "Worlds" organising a set of synonym-pair relational databases, joining these databases, and arranging and displaying the results to the user (L. Young, 1987). (See figure 3.1)

The goal of this method is not to imitate human creativity but rather provide support for the creative process, and the author suggests that "When a small group is available, the computer can, in effect, join the group, and enhance it by serving as an extended memory device" (L. Young, 1987). This notion of the computer as an extended memory device is similar to Nishimoto's Outsider Agent explained later in this chapter.

AAI. AAI supports articulation of concepts (Nishimoto et al., 1996; Hori, 1994). The system supports new concept formation in the engineering and science domain by providing a two-dimensional space of words for the user. The user can then manipulate this word-space, and this modification of the existing concept-space will possibly generate new concepts in the domain. Hori provides an intriguing definition for these new concepts as "a connection between a symbol in external language such as natural language, and a chunk of information stored in the mental world" (Hori, 1994).

This notion of concepts as connections between words and a person's mental space is similar to the associative process in brainstorming and this associative skill is perceived as the most important skill in creating creative advertising (Reid & Rotfeld, 1976). Two philosophical perspectives support this approach for generating new ideas. The first is the Buddhist philosophy of language that observes different layers in our mental world where the bottom layer is described as a flow of liquid-like substance that could produce symbols from the crystallisation of the liquid. The other supporting philosophical argument comes from Koestler's idea of "bissocination" (Koestler, 1964) where something new is born when two different planes of association collide (Hori, 1994).

Outsider Agent. Nishimoto et al. (1996) present an interesting concept of introducing an outsider agent to support the brainstorming session. This

concept is based on the notion that experts sharing the same domain knowledge often also share a common framework of thinking, leading to less creative ideas (Besnard & Bastien-Toniazzo, 1999). Bonnardel and Marmèche (2005) have identified the reason for this phenomenon of reduced creativity due to insufficient search capabilities, thus encouraging the usefulness of increasing the number of ideas produced and emphasising the element of serendipity in the process.

The notion of reduced creativity due to lack of being able to expand on the existing mental model is supported by studies in advertising research. A study confirmed that when a creative partnership between a copywriter and an art director develops, their thinking can gradually follow similar paths, leading to less creative ideas (Johar et al., 2001). The suggested solution here is that the outsider agent introduces new information that might have hidden relevance to the users. The authors believe that "Simple and shallow knowledge plays a vital role in stimulating creativity," and "The role the innocent thinking plays is analogous to the way children often give us marvelous ideas" (Nishimoto et al., 1996).

Computerised thesauri can also assist in exploring associations between words by retrieving synonyms, antonyms, rhymes and anagrams (Shneiderman, 2000). Examples of products that aim to stimulate creative thinking by visually representing relationships between words and concepts include TheBrain, which visualises information flow and MindManager that helps to create and identify relationships within the data (Shneiderman, 2000).

Many of these tools can be described as idea processors and according to (Chen, 1999) they rely on the general framework of brainstorming, introduced by Osborne where the goal is to generate as many ideas as possible in a group situation. However, in electronic brainstorming the activity does not always involve a group; rather the database of the computer acts as the group,

producing concepts that are either successful in producing new ideas or not. The convergent phase of evaluating whether the ideas are worth implementing is not built-in traditional brainstorming but is encouraged to bring closure to the creative session, and the possibility of a new idea being found (Nishimoto et al., 1996; Rawlinson, 1981).

3.3 Conclusions

In this chapter, I have presented a discussion of the current state of Creativity Support Tools. I will now conclude by presenting a synthesis of this discussion by attempting to identify some critical features of a successful tool for supporting the task for creating new ideas in advertising.

Although the goal of a creative process is to come up with a creative idea, many examples that are categorised as Creativity Support Tools are of a general nature. My focus in developing Creative Pad is to develop it as a tool to support creative idea generation related to a specific task on hand. That task is to enable advertising creatives to develop ideas which could be turned into an advertisement. It is noted that a vacuum exists specifically in the domain of advertising for such tools despite the inherently creative nature of advertising.

From the analysis of multiple views of Creativity Support Tools, I conclude that in order to develop a successful tool for supporting creativity, the tool should:

- Allow the user to extend domain knowledge and allow exploration and transformation of conceptual spaces.

- Support the state of flow as described in subsection 3.1.1.

In designing a Creativity Support Tool one should also take advantage of

a dynamic database for the raw material. Two observations were made:

- A static database can lead to static domain knowledge and thus lead to less creative results.

- Search is an integral part of a creative process but is currently treated as a separate tool for creativity support.

Thus, I also propose that as an important part of a divergent phase of any creative process, computational creativity tools should have search incorporated in their models. Furthermore, a dynamic database increases the possibility of serendipity which is defined as new surprising connections emerging from the data that can lead to creative ideas.

It is also necessary to highlight the role of computer as colleague in the creative process, as this emphasises the importance of dialogue between the computer and the user. Although creating a true colleague system is beyond the goal of this thesis, it is hoped that Creative Pad is a step in that direction. As one shall soon see, Creative Pad is more than a coach. It does not teach advertising creatives how to be creative but does provide relevant ideas to assist them in solving their problem. However, it does not have a full dialogue system to assist its users. Since advertising is defined as a non-routine creative design process with various variables, it is necessary to encourage rapid and free-flowing exchange of information. Creative Pad is an attempt to do so.

Most Creativity Support Tools focus on either the divergent or the convergent phase of creative thinking. Creative Pad will be designed to incorporate both modes of thinking into consideration, a rapid divergent generation of many alternatives or triggers but also a more focused convergent phase where concepts are filtered and a selection process determines which ones require further processing and refining. However, for now, little support

is offered at the convergent phase. Until one knows better how the convergent phase works, this is best left, for now, to the human mind.

It has been argued that the associative power that leads to creative results lies in the human mind. The goal of a Creativity Support Tool is to support the creative process and not be creative itself. Thus, models that propose databases with these associations built in can be useful but may constrain creative thinking by developing self-imposed limitations that can lead to formulaic thinking by restricting the discovery of new surprising connections and associations between different elements.

Although creativity remains a mystery, none of the research or studies suggest that tools for supporting idea generation should be complicated. Instead, Nishimoto et al. (1996) suggest that "Simple and shallow knowledge, plays a vital role in stimulating creativity," and "The role the innocent thinking plays is analogous to the way children often give us marvelous ideas."

The above conclusions will serve as a starting point for the development of Creative Pad.

Chapter 4

Creative Pad

> It takes two to invent anything. The one makes up combinations;
> the other one chooses, recognizes what he wishes and what is
> important to him in the mass of the things which the former has
> imparted to him. What we call genius is much less the work of the
> first one than the readiness of the second one to grasp the value of
> what has been laid before him and to choose it. (Dennett, 1978)

This chapter describes the development of Creative Pad, a new Creativity
Support Tool designed to assist advertising creatives in developing ideas. I
will begin by describing formally a process for analysing advertisements. The
process consists of three parts: message-idea-execution. Section 4.1 describes
this process in detail. Using such a process to analyse advertisements, two
important observations were made:

1. Ideas emerge from the message.

2. Ideas exist as a separate entity, independent from the execution.

These observations suggest that Creative Pad should begin to generate
ideas using the message itself. One straightforward approach is to use keywords
from the message and exploit the richness of information on the Internet to
find related information. It is expected that the results from such a search
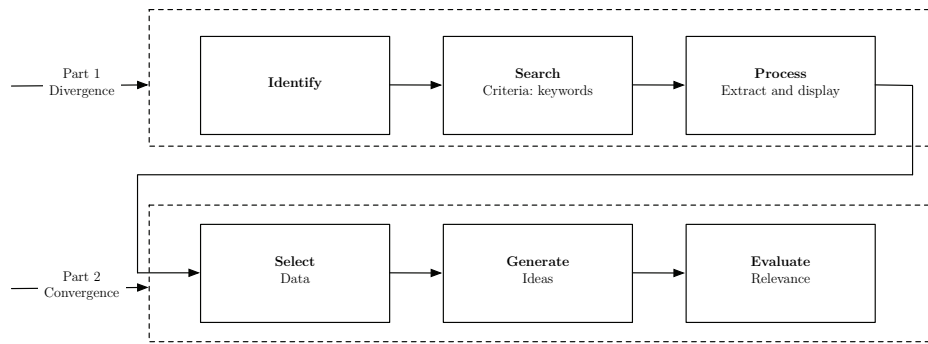
Figure 4.1: Human-computer interactions with Creative Pad.

would produce a large amount of information. Creative Pad will then process the information to produce key ideas for the advertising creative. The creative will select some of the ideas generated by Creative Pad that are considered to be inspiring. From them, the creative will develop ideas for a particular creative task.

Figure 4.1 shows the six phases of a human-computer interaction with Creative Pad. Section 4.2 discusses how a program is developed and section 4.3 concludes the chapter with a summary of the process for developing Creative Pad.

4.1 A framework for analysing advertisements

This section introduces a framework for analysing advertisements, based on a notion that from every advertisement we can identify three elements, namely a message, an idea and an execution (See figure 4.2). All these elements can be succinctly described using one sentence. The implication of this notion is that we can then identify an idea as a separate element independent of the message or the execution. The significance of this is that if an idea is a separate element from the execution, then the final creative product (for example the advertisement itself) cannot be the idea. Consequently, an idea is something

Message	Idea	Execution
Main goal of communication in an advertisement expressed as a single sentence.	An interesting and creative way to communicate the Message to the target audience.	The idea as a final creative product (print, tv, radio advertisement).
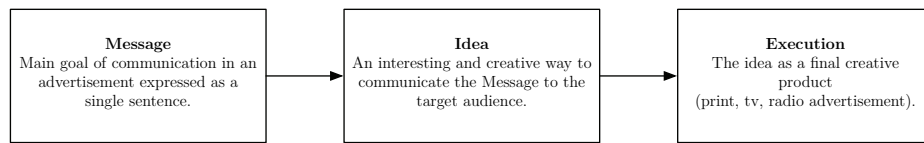
Figure 4.2: Message-Idea-Execution framework.

else that exists independent of the creative product. It is something triggered by the message and something that can then be processed into a final creative product or execution.

Although a client would normally provide a brief for the creative team, it is argued here that one could usually derive a single sentence from the communicational objectives that will succinctly capture the intended message of the client. Such a sentence is referred to here as the Message. An example of a message is: "coffee keeps you awake" (figure 4.3). In each message, certain words are identified as keywords. These keywords capture the goal of the intended communication of the client. For example, keywords for the message, "coffee keeps you awake", are "coffee" and "awake".

Thus the message reflects the attributes the advertiser wants to communicate to the consumer (Nelson, 1974). The fact that a communicational objective is provided by the client affects the creative process in three ways: First, it means that the advertisement or idea is not necessarily valued by its inherent creative properties but rather by how effective the advertisement is in reaching the client's goals (such as sales). Second, the agency in its process must consider monetary and time constraints while creating the advertisement. Third, the agency must consider the broader framework of the client's organisational values when creating the idea (Hirschman, 1989).

When a creative develops an idea, it could also be captured succinctly in a sentence. This sentence is referred to as the Idea. An example of an idea for

Message: Coffee keeps you awake.
Idea: Coffee keeps your eyes open.
Execution: Show two coffee cups as eyes.
Keywords: Coffee, awake.

Figure 4.3: Example of an advertisement with extracted Message, Idea and Execution (source: www.joelapompe.net).

the message above is: "Coffee keeps your eyes open" (see figure 4.3).

The execution is a description about how the idea is then produced into a final creative product such as a print or tv advertisement, henceforth referred to as an Execution. An example of an execution of the message "Coffee keeps your eyes open" can be seen in figure 4.3. It is important to make the distinction of what constitutes an idea and what an execution. The execution is an embodiment of how the idea is produced into a format beyond language, ie. into a final creative product or another representation of an idea.

By applying the message-idea-execution framework to analyse advertisements (see appendixes C and D), I observe that, for example, a single idea could be executed in several different ways or different ideas could be executed in the same way. Thus, formally, an advertisement could be broken down into three elements, each with two variables, the elements being message, idea and execution and each one of them either different or the same. Four different options could be identified and are discussed below.

Figure 4.4: Example: Same message, same idea, different execution (source: www.joelapompe.net).

Option one: Same message, same idea, different execution. The examples in figures 4.4, 4.5, 4.6, 4.7 and 4.8 represent a situation where both message and idea are the same but the final execution in each advertisement is different. By using the framework this could be described as:

- Same message, same idea, different execution:

  - Message: X is a great off-road vehicle.

  - Idea: X makes the terrain seem flat.

  - Execution: Varies.

Option two: Same message, same idea, same execution. When all the elements of the framework can be interpreted as being the same we can see the final creative product as illustrated in figures 4.9(a), 4.9(b), 4.9(c) and 4.9(d). It is important to notice that although the executions are not exactly
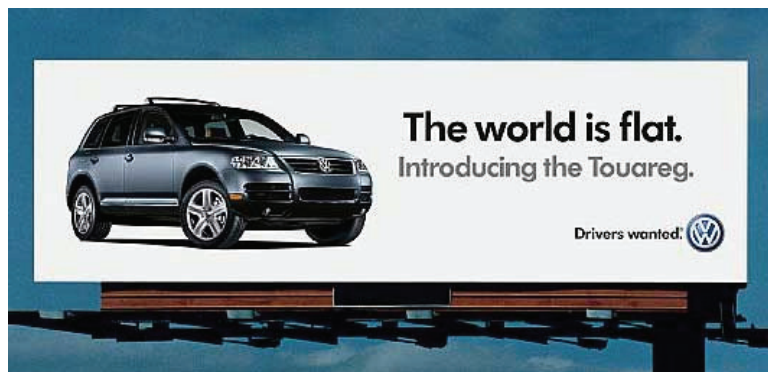
Figure 4.5: Example: Same message, same idea, different execution (source: www.joelapompe.net).

Figure 4.6: Example: Same message, same idea, different execution (source: www.joelapompe.net).

the same, the elements that make up the execution (screen inside an envelope) are similar enough so that we interpret the Execution as being the same.

- Same message, same idea, same execution:

  - Message: This screen is flat.

  - Idea: Contrast the flatness with something considered to be very flat.

  - Execution: Put the screen inside an envelope.

Figure 4.7: Example: Same message, same idea, different execution (source: www.joelapompe.net).

Figure 4.8: Example: Same message, same idea, different execution (source: www.joelapompe.net).

Option three: Different message, different idea, same execution. Here, the execution is the same, but the message and idea are different (see figures 4.10(a) and 4.10(b)).

- Different message, different idea, same execution (Nike, figure 4.10(a)):

    - Message: Niketown stores are open until midnight.

    - Idea: A moon represents midnight, relate to Nike sports.

    - Execution: A soccer player kicking a ball that is actually the moon.

- Different message, different idea, same execution (Adidas, figure 4.10(b)):

    - Message: Nothing is impossible.

(a) Toshiba

(b) Sony

(c) Philco

(d) Sony

Figure 4.9: Examples: Same message, same idea, same execution (source: www.joelapompe.net).

– Idea: Show something considered impossible.

– Execution: A soccer player kicking a ball that is actually the moon.

Option four: Different message, same idea, same execution. In figures 4.11(a) and 4.11(b) we can see examples of a situation where idea and execution are the same, but message is different.

- Different message, same idea, same execution (Airbus, figure 4.11(a)):

  – Message: Congratulations to athletes returning from the Salt Lake City Olympics.

  – Idea: Combine something wintry and the airline.

  – Execution: The silhouettes of aeroplanes form a snowflake.

(a) Nike   (b) Adidas

Figure 4.10: Examples: Different message, different idea, same execution (source: www.joelapompe.net).

- Different message, same idea, same execution (Frontier Airlines, figure 4.11(b)):

  - Message: Happy holidays from Frontier Airlines.

  - Idea: Combine something wintry and the airline.

  - Execution: The silhouettes of aeroplanes form a snowflake.

4.2   Implementation

This section describes the implementation of Creative Pad. From the previous section, it is clear that an important task for a tool such as Creative Pad is to generate ideas for the advertising creative to help develop ideas for advertisements. My approach is first to extract keywords from a message and use them to initiate a search on the Internet. One could do this in three ways (consider the message "A car with more family space"):

1. Use the main keyword in the message - keyword is *car*.

2. Use several keywords in the message - keywords are *car+family+space*.

3. Use the message itself - keyword is "*A car with more family space*".

(a) Airbus   (b) Frontier Airlines
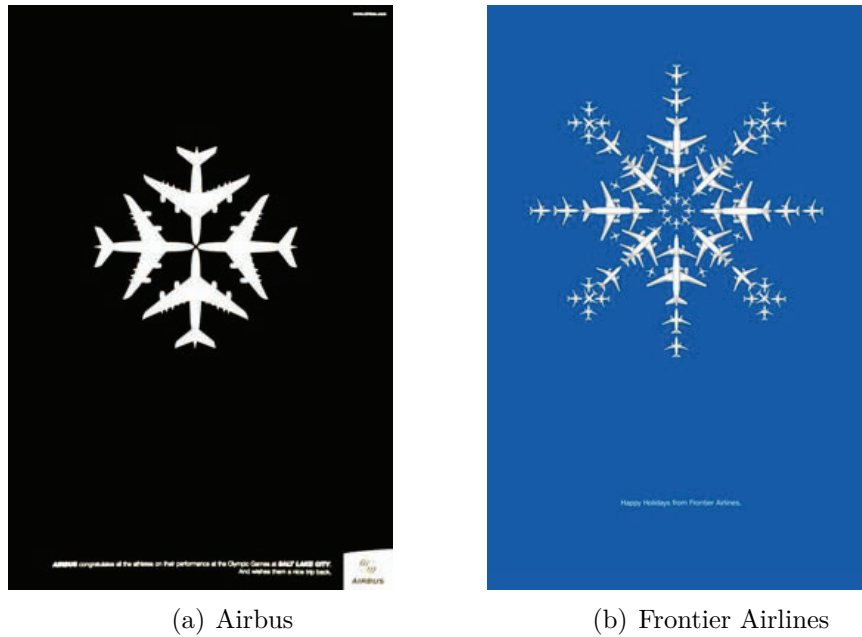
Figure 4.11: Examples: Different message, same idea, same execution (source: www.joelapompe.net).

Any of the above will produce many files containing related information. Next, one needs to extract useful ideas from these files for presentation to the advertising creative. The goal in processing this incoming data is to highlight the most powerful triggers to the user and exclude the unnecessary elements. How do we know what is relevant and what is irrelevant? As creativity often depends on the creative person's background and experience, it is not possible to target specific words and rely on their generating creative ideas. Instead one needs to adopt a more general approach where one leaves room for the mind of the creative person to create the connection from the original message to the creative idea. I propose to use the most basic attributes of textual data, namely, verbs, adjectives and nouns as a starting point. Consequently, some possible alternatives of how ideas could be extracted from the search files are:

1. Extract all words and sentences from all sentences.

2. Extract words and sentences from sentences that have the main keyword in them.
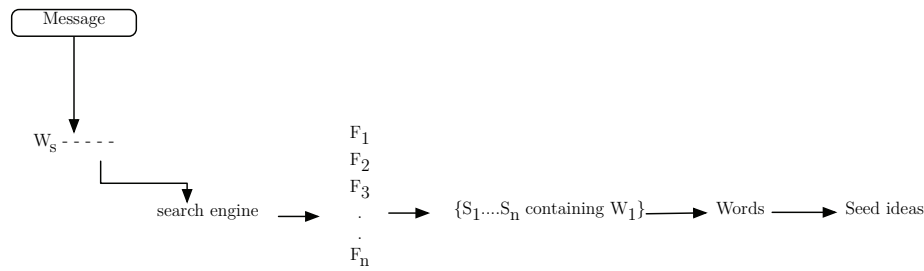
Figure 4.12: Creative Pad. W=words, S=sentences, F=files.

3. Extract words and sentences from sentences that have one of the keywords in them.

4. Extract words and sentences from sentences that have more than one keywords in them.

5. Extract words and sentences from sentences that have all keywords in them.

6. Extract any verbs, adjectives and nouns from the data

Figure 4.12 shows an overview of the basic idea for the implementation of Creative Pad. Prior to the implementation, I investigated three important aspects of Creative Pad:

1. The kind of data retrieved from the Internet.

2. The inspirational property of the data retrieved.

3. A possible interface.

These preliminary studies are reported in Section 4.2.1. Section 4.2.2 describes the implementation of Creative Pad.

4.2.1 Preliminary studies

This section describes three of the preliminary studies conducted prior to developing Creative Pad; namely, a study on the words retrieved, a study about inspiring ideas, and a study on possible interfaces.

Extraction of words from a news article

According to the framework described previously in this chapter, a communicational objective of an advertisement can be expressed succinctly as a single sentence. From this sentence we can then identify keywords that form the basis of the search process. In the following example, three keywords were specified from the message "a car with more family space" namely, *car*, *family*, *space*. To understand how rich are the words one could extract from these searches, I extracted verbs, nouns, and adjectives from the text and grouped them as follows:

1. All adjectives from sentences with keyword *space*.

2. All verbs from sentences with keyword *space*.

3. All nouns from sentences with keyword *space*.

4. All adjectives from sentences keyword *car*.

5. All verbs from sentences with keyword *car*.

6. All nouns from sentences with keyword *car*.

An example of this extraction can be seen in tables 4.1 and 4.2 where verbs, nouns and adjectives from an article have been extracted. In displaying the above set of results, I have also tried including the search term (see table 4.3). For the complete article from which the above data is extracted, see appendix A.

Adjectives: Space	Verbs: Space	Nouns: Space
parking (space) urban	buying	idea
parking (space) rowdy	parking	space
hulking?	hulking	area
logical	say	space
high-rise	start	elements
ocean (views)	housing	family's
parking (space)	rent	(sport utility) vehicle
secure	controlled	place
environmentally-controlled	having	businesses
	have	number
		developments
		ocean
		views
		storage
		space
		collectors
		car
		garage
		members
		space
		facility
		concierge
		service
		month
		yacht
		club
		slip
		car
		space

Table 4.1: A sample of manual extraction from a news article where all adjectives, verbs and nouns from sentences with the keyword *space* are extracted.

My analysis of the data produced shows that the data extracted are rich enough to assist the advertising creative to develop an idea for an advertisement. By *rich*, it is meant that many of the words bear a strong relationship to the given message and more. They are also varied enough to be interesting, and of sufficient quantity. However, the addition of the search term to the resulting word does not seem to increase or decrease the "interestingness" or viability of the word itself, partly because the advertising creative already knows well what the search term is. Furthermore, since all the words are going to be displayed on the screen, there is no need to analyse whether pairings of words would be better than their individual use.

There are obviously many other powerful means of extracting words from the search data. Another example of such an experiment is described in 4.13 where the idea was to look for synonyms based on the keywords. However, given that the above analysis shows that the ideas generated using simple part-of-speech data are rich enough, the investigation of these algorithms is unnecessary here. The goal is not to develop a powerful algorithm for Creative Pad.

How could the words selected be inspiring?

Will the extracted words be inspiring to the advertising creative? Although there is no definitive answer to this question, it is important to have an indication that they are. It is argued here that if the ideas underlying the creation of a creative advertisement are not found among the ideas generated, then there is no possible direct link between what is generated and what the creative has in mind. Therefore, I conducted several analysis whereby I tried

Nouns: Car	Nouns: Car	Nouns: Car	Verbs: Car
car	house	condo	turning
enthusiasts	car	services	store
condos	facility	collectors	is (int 1)
treasures	locations	car	burn
condo	car	garage	turning stored (int 2)
collection	collector	members	scheduled
cars	facility	space	to open
motorcycles (int 1)	husband	facility	say
enthusiasts	piece	concierge	sold
money	estate	service	opening
car	place	month	plans
condos	car (int 3)	manager	to open
vehicles	hurricanes	concept	start
garages	car	customers	go
security	collectors	facility	house
concierge	collection	cars	interested
services (int 2)	car	price	said
car	garage	million	plans
developments	warehouse	yacht	to open
developers	waters	club	scouting
condos	winds	slip	said
car	car	car	developing
condo	house	space	put
garage	concierges owners	park	said (int 3)
facility	cars	place	is
garage	studio	buyers	keeps
facility	portraits	rubber	breached
locations	cars	flooring	damaged
years	park	hyraulic	offer
developer	place	lifts	take
condos	cameras	cars	picking
condo	owners	business	dropping
cars	cars	warehouse	
condo	hours	cars	
bus	day	car	
car	message	condo	
culture	ownerscell phone	city	
people	security	cars	
storage	car	motorcycles	
car	collectors	days	
condo		garage cars home races	
development			

Table 4.2: A sample of manual extraction from a news article where verbs and nouns from sentences with the keyword *car* are extracted.

Nouns + car From sentences with car	Nouns + car From sentences with car	Verbs + car From sentences w space	Verbs + car From sentences w car
house car	condo car	buying car	turning car
car car	services car	parking car	store car
facility car	collectors car	hulking car	is car(int 1)
locations car	car car	say car	burn car
car car	garage car	start car	turning car
collector car	members car	housing car	stored car(int 2)
facility car	space car	rent car	scheduled car
husband car	facility car	controlled car	to open car
piece car	concierge car	having car	say car
estate car	service car	have car	sold car
place car	month car		opening car
car car(int 3)	manager car		plans car
hurricanes car	concept car		to open car
car car	customers car		start car
collectors car	facility car		go car
collection car	cars car		house car
car car	price car		interested car
garage car	million car		said car
warehouse car	yacht car		plans car
waters car	club car		to open car
winds car	slip car		scouting car
carv	car car		said car
house car	space car		developing car
concierges car	park car		put car
owners car	place car		said car(int 3)
cars car	buyers car		is car
studio car	rubber car		keeps car
portraits car	flooring car		breached car
cars car	hydraulic car		damaged car
park car	lifts car		offer car
place car	cars car		take car
cameras car	business car		picking car
owners car	warehouse car		dropping car
cars car	cars car		
hours car	car car		
day car	condo car		
message car	city car		
ownerscell car, phone car,	cars car		
security car	motorcycles car		
car car	days car		
collectors car	garage car		
	cars car,		
	home car		
	races car		

Table 4.3: A sample of manual extraction from a news article where words and nouns extracted from sentences with the keyword *car* are combined in order to find interesting combinations.

Coffee	keeps	you	awake

Synonym, sense 2

Synonym, sense 1

Synonym, sense 3

astir
up
awakened
insomniac
sleepless
watchful
unsleeping
wide-awake
waking

conscious

aware
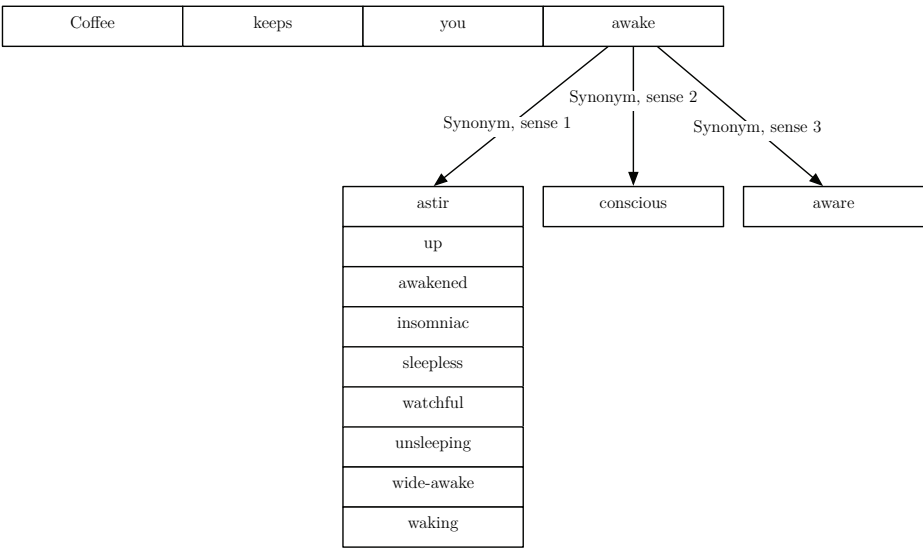
Figure 4.13: Expanding the semantic framework of a word using synonyms.

to find whether such a direct link exists. An example of such an analysis is described in this section.

One idea of an existing advertisement which I found to be creative is "coffee keeps your eyes open" (see figure 4.3). Its message is "coffee keeps you awake". A search for "coffee keeps you awake" was performed and results saved. Next, the following sentences were extracted:

1. Sentences that had the keyword *eyes.*

2. Sentences that had the keyword *open.*

These sentences are listed below. If we were to select sentences from both sets that contain the keywords, *coffee* and *awake*, we would find words such as *open* and *eyes* as ideas for the advertising creatives. In fact, in this example, one would also find the phrase *open your eyes* in both sets of data. This, I argue, is a good indication that by using this method we can indeed find a relationship between message and idea.

This idea will also be adopted as one of the tests to measure the success of Creative Pad in generating productive ideas for advertising creatives.

EYES

1. You've got eyes

2. FRAN: The streaming eyes and nose and the irritation from it, that's what it produces in a healthy person so if somebody comes along sick with those symptoms, for example during hay fever or the start of a very severe sudden onset of a cold, we know we can give a homeopathic preparation of onion and literally within minutes you'll start to feel the secretions dry up and the irritation settle down

3. Heightened senses means better listening skills in class, more open eyes to see the board, a greater awareness of falling objects, and just general heightened senses

4. The smell of brewing coffee in the morning **opens your eyes** just a bit faster and palpitates your heart getting your blood moving faster to your limbs than otherwise

5. Widen eyes

6. Furthermore, dewy eyes make people want to protect you

7. Look upwards but ensure that your eyes are not left with their whites only

8. These sulfured compounds react with the moisture in your eyes forming sulphuric acid, which produces a burning sensation

9. The nerve endings in your eyes are very sensitive and so they pick up on this irritation

10. So you cry to keep your eyes protected from the acid

OPEN

1. Heightened senses means better listening skills in class, more open eyes to see the board, a greater awareness of falling objects, and just general heightened senses

2. The smell of brewing coffee in the morning **opens your eyes** just a bit faster and palpitates your heart getting your blood moving faster to your limbs than otherwise

3. You open your window for the lovely spring air and somehow get a sense that you are being watched by things that start singing at 4 am

4. Adrenaline is the "fight" hormone, and it makes your heart to beat faster, the breathing tubes to open up, the liver to release sugar into the bloodstream for extra energy and your muscles to tighten up, ready for action

5. It's now located on the other side of the Boon Lay MRT station, where it used to be an open field.

6. I'm looking for a place like Caffe Pergolesi in Santa Cruz; open late with a coffee shop environment, where you can sit, read and people watch

7. Not a great coffee place but it's open and it's got food

8. Outside of that, it becomes trendy restaurants (Il Fornaio, Zibibbo's) with espresso bars open to 11 or 12

9. Or there is the Peninsula Creamery with malted shakes, coffee, and a diner atmosphere open until 12

10. If you want a nice cup o' joe, hit Khartoum in Campbell, Chris (the bartender also works at Boswell's in the Pruneyard) serves up a mean
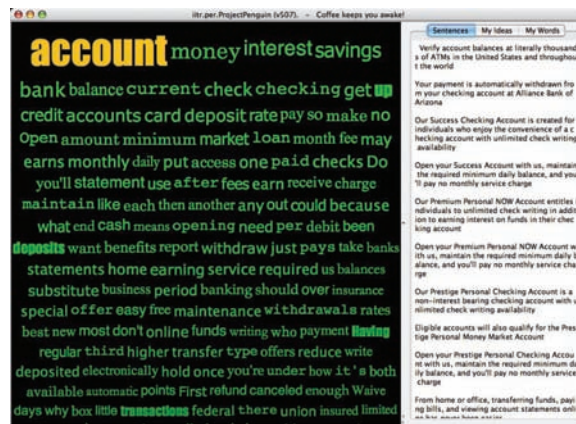
Figure 4.14: First graphical version of Creative Pad.

cup of fresh brewed coffee; being that it's a bar the atmosphere is good and open till at least 1.30 am

11. So unless you're talented, and some definitely are, just open up the textbook 12 hours earlier than you would normally

12. Or no, wait a minute, an open-faced Mexican egg dish

13. i just like the way it makes you look like a very busy person when the phone rings and you flip the phone open to answer

14. This question is no longer open for answering

Graphical representation of the output

After being able to produce output from the text as interesting words and sentences, a brief investigation into the design of a suitable interface was carried out. The initial goal was to display the words based simply on their occurrence in the text (see figure 4.14).

The words were separated by varying the font for each word and the size of the words decreased from the highest occurrence to the lowest. Also, the idea was introduced that we could expand the semantic framework of a single
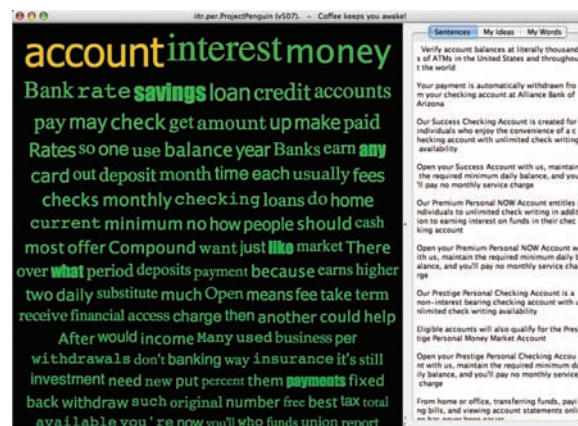
Figure 4.15: Results of search "earns you more interest" with no keyword filtering.

occurring word by revealing the sentence from where it was derived. This notion of words working as separate units in an abstract fashion, and then extending the semantic framework around the word by combining the words with the text from where they were extracted, was a step forward. It enriched the context of the word and opened up more possibilities for creative thinking that were related to the original search. Furthermore, already here (see figure 4.14), the idea of the user being able to save ideas and words is introduced, although this was not implemented as a working feature until the final version of the Creative Pad (see subsection 4.2.2).

The following will represent some of the results from performing a search, saving the results, then processing them and displaying them in a graphical manner.

Figure 4.15 is an example of the search "earns you more interest". Figure 4.16 is an example of the figure but now the keyword *account* was used to filter the results.
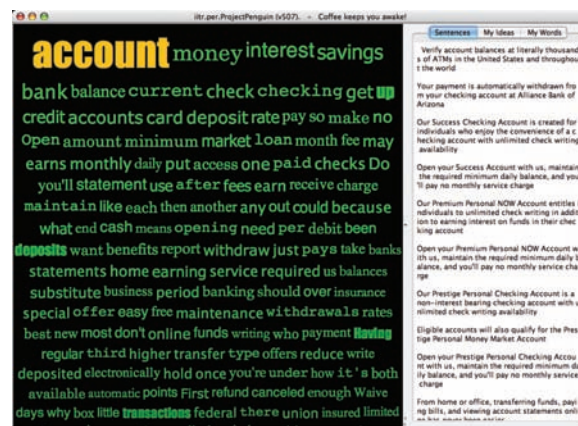
Figure 4.16: Results of search "earns you more interest" filtered with keyword *account.*

4.2.2 Creative Pad

As briefly described in the previous subsections, the development of Creative Pad followed a process of experimentation where several different approaches to processing and visualising the output were tested and examined. The development began a with a manual test of whether the information extracted from the Internet could possibly act as a trigger for new creative ideas. Between the manual extraction and the Creative Pad different approaches were tested. The manual process was followed by a semi-manual method and only the final version was fully automated meaning that the process of downloading, processing and visualising the information was automated. Even the final version went through a process of testing inside an agency where it was thoroughly tested by advertising creatives and the feedback was incorporated into the final version.

During the development process several simple computational tools were developed each with a specific aim of enhancing and contributing into the process of extracting and visualising data in a meaningful way. An example of such a tool could be one that extracted words and sentences automatically from data downloaded from the internet. Another tool was developed to visualise

the information. Thus, the development of Creative Pad was not a simple linear process but rather an iterative process of trial and error and constant evaluation. Several approaches were tried and studied, and only the most feasible ones were developed further and incorporated in the following versions.

The contribution in this thesis as described in the following section includes the blueprint, concept, visual layout, and programming of each phase of the Creative Pad. Coding of the application according to the blueprint and programming instructions was done by Narges Mahyar as part of her masters thesis. Other more simple tools were used in the early phases of the Creative Pad; for example, to extract words and sentences from the downloaded information.

This subsection describes the final version of Creative Pad. This version of the program was used to conduct all of the experiments described in chapter five.

When using Creative Pad, users essentially follow a divergence-convergence process. Each user first decides on the most important attributes, the keywords of a message, after which a divergent process is triggered when Creative Pad connects to a search-engine and finds relevant information based on the search terms. After receiving the search results the program downloads the actual content from the html pages. With the content saved, a convergent process begins when Creative Pad displays the ideas to the user who selects and filters out the noise, leaving only the most important and interesting ideas for later use. This process of divergence and convergence and how it relates to specific phases of the Creative Pad is illustrated in figure 4.17.

The coding of Creative Pad was done by Narges Mahyar, a Masters student at the University of Malaya under the supervision of Professor Wai Yeap (while he was on leave there). Thus, I will not discuss the code here (interested readers, please see Mahyar (2008)). Rather, this subsection will focus on the
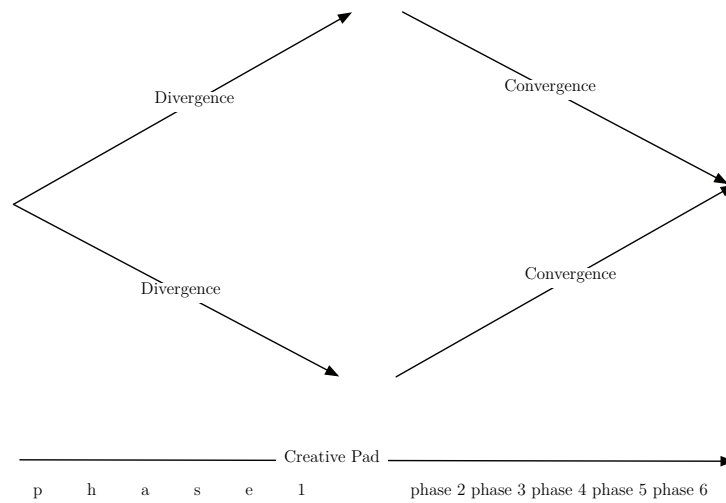
Figure 4.17: Divergence-convergence and different phases of Creative Pad.

operations of Creative Pad: - what and why. My view of Creative Pad is a process whereby the user would progress from one phase to another in a conveyor-belt-like manner, important decisions being made during the process. Viewed this way, Creative Pad is divided into six distinct phases, each of which will be described below:

1. Searching for ideas.

2. Selecting ideas.

3. Focusing on ideas.

4. Viewing sentences.

5. Final thought.

6. Finishing.

Phase one: Searching for ideas (Figure 4.18) Phase one is the beginning of the divergence (see figure 4.17), where the user enters one to three

words as search terms in the input field. The user can enter search terms into a search field utilising the keywords from the desired goal of communication. For example if the message is "a car with more family space", the keywords could be *car*, *family* and *space*. The user can then use all three *car+family+space*, combine any two, or use any of the keywords individually. After entering the search terms and selecting Search the program connects to a search engine front-end on the Internet and starts to gather data. Note that automatically determining the keywords from the message is something that was considered but at this stage, given the challenge of finding the right related information as a priority, the decision was made to extract the keywords manually by the user.

As noted in the preliminary studies, an important step in this phase is the extraction of ideas from the information downloaded. Several mechanisms were investigated earlier. The final method chosen and implemented was to extract all verbs and adjectives from each sentence containing the keywords. It was decided to exclude nouns, partly because many words have multiple parts of speech and partly because verbs and adjectives should be enough to generate an interesting set of ideas (which would include many of the nouns too).

Our initial tests showed that if the number of keywords in a search increase to more than three this can overly constrain the search. To start the search for relevant and related content from the Internet using search engines the user needs to click Search.

Phase two: Selecting ideas (Figures 4.19 and 4.20)   After the data have been searched and the content downloaded and processed, they are displayed to the user by showing the relevant words one by one, zooming out into the screen forming a circular shape. If the number of words exceeds the screenspace
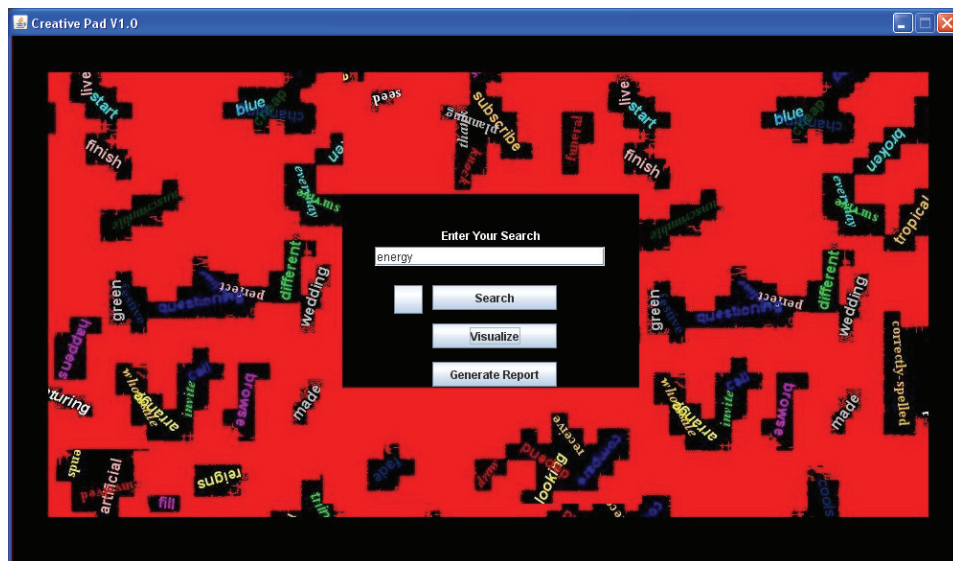
Figure 4.18: Screenshot of phase one of Creative Pad.

the user can start a new sequence of words by pressing Next. When the user identifies an interesting word, it can be selected by pressing Enter. This records the selected word, for use in later phases. In addition to being able to select a word by pressing Enter the user can type a word in a field on the bottom of the screen. This word could be one that has already zoomed in and that the user has overlooked or a word that was triggered by others appearing on the screen. The importance of this feature is its ability to augment the existing database of ideas that might lead to later creative ideas. The user then moves to the next phase by selecting Show Saved Words.

The zooming of words is done at a reasonable pace and some experimentation of the speed was done in the initial development of Creative Pad. The idea of a dynamic rather than a static display is to prevent the user from reading the words. The task is to form ideas for the advertisement and not to read the ideas generated on the screen. Furthermore, background music is being played while the words are displayed.
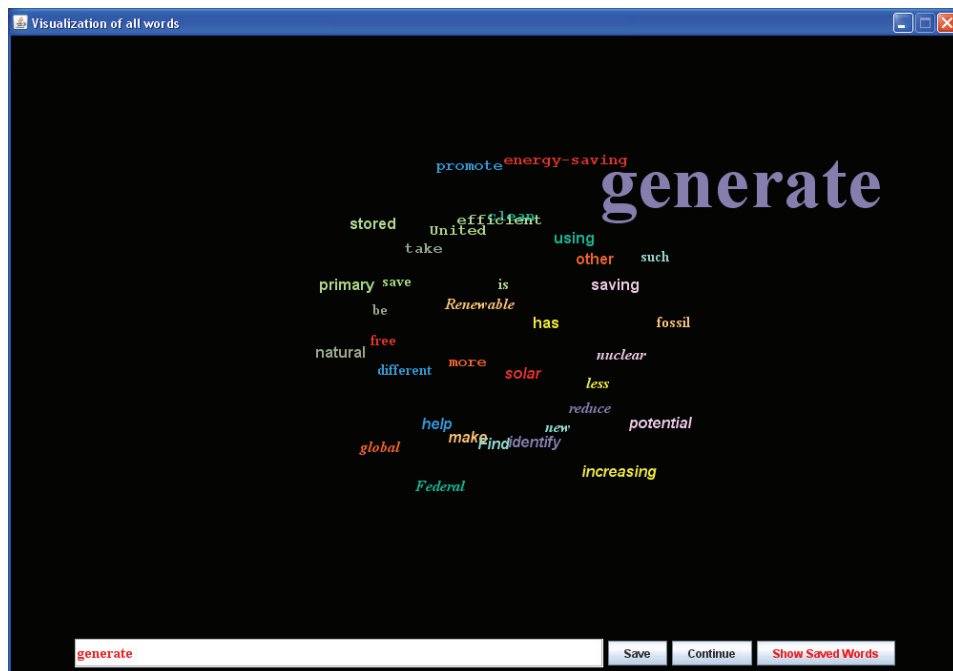
Figure 4.19: Screenshot of phase two of Creative Pad.

Phase three: Focusing on ideas (Figure 4.21) (Figure 4.22) In phase three, the words selected and/or created by the user will be displayed alternatively as a fixed circular sequence and a rotating sequence. If the user did not select a sufficient number of ideas random words are introduced in this phase, marked in the display with an asterisk.

The main idea of this phase is for the user to focus on the words presented and start thinking creatively about ideas for an advertisement. The user can enter ideas at the bottom of the screen and express them as sentences rather than words.

Phase four: Viewing sentences (Figure 4.23) In phase four, the user is shown sentences that include the selected words from phase two. This provides more context and meaning behind the single chosen words. The sentences flow from the top of the screen one by one and the user can select a promising

Figure 4.20: Screenshot of phase two of Creative Pad.

sentence by entering the number of the sentence in the entry field.

Phase five: Final thought (Figure 4.24)   In phase five, the user can see
all the interesting words selected in phase two, sentences selected in phase four
and the ideas entered during phases three and four. This is the final convergent
stage of the creative process when the user can enter final creative ideas into
the system.

Phase six: Finishing (Figure 4.25)   In the final phase, the user can save
all the information displayed and entered into the system as described earlier
in this section into a text file.

For the purpose of analysing the user's behaviour and also for the user's
benefit (so no data are lost) a Generate Report function is available. This
report includes the following data:

1. All ideas the user entered during the process.
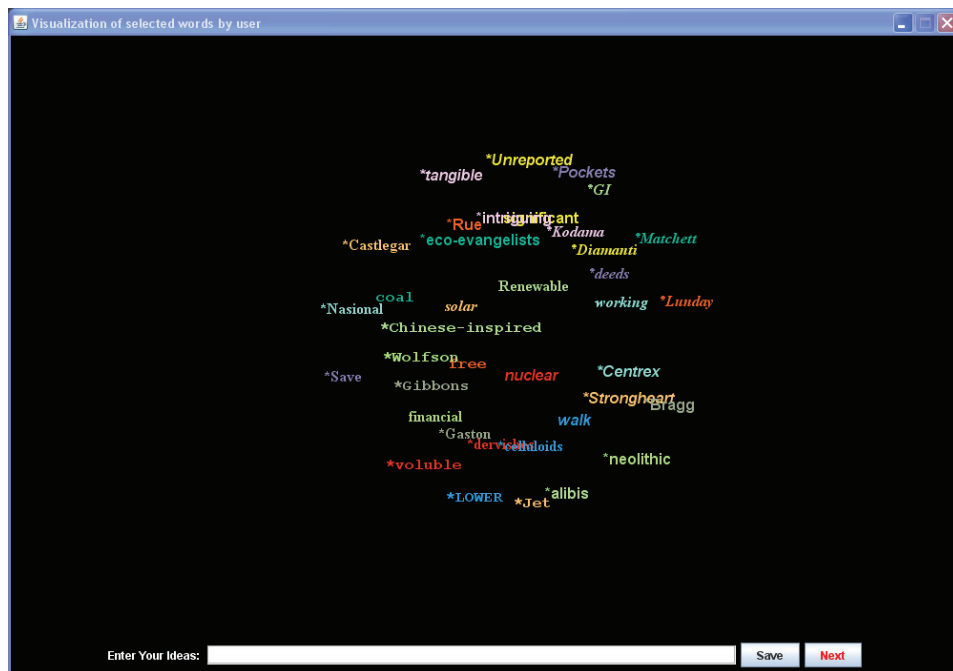
Figure 4.21: Screenshot of phase three of Creative Pad.

2. All sentences the user selected in phase four.

3. All words the user selected in phase two.

4. Random words added to phase two.

5. Adjectives displayed in phase two.

6. Verbs selected in phase two.

This enables the user and the researchers to analyse what information was selected during the process of using the Creative Pad.

4.3   Conclusions

The preliminary analysis of Creative Pad has provided much guidance to the final implementation of Creative Pad as a working prototype.   A straightforward algorithm is used to generate ideas for the advertising creatives

Figure 4.22: Screenshot of phase three of Creative Pad.

and an interface is created whereby the creatives are required to do as little as possible. The latter is important as this allows for their thinking to be uninterrupted. Next, Creative Pad is evaluated by asking advertising creatives and non-advertising students to experiment with it.
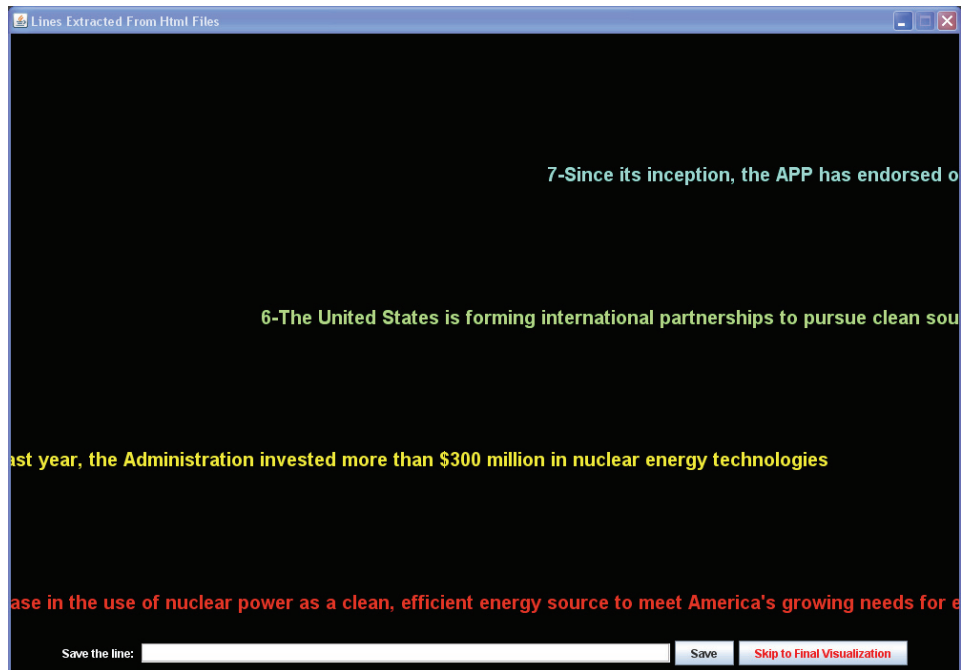
Figure 4.23: Screenshot of phase four of Creative Pad.
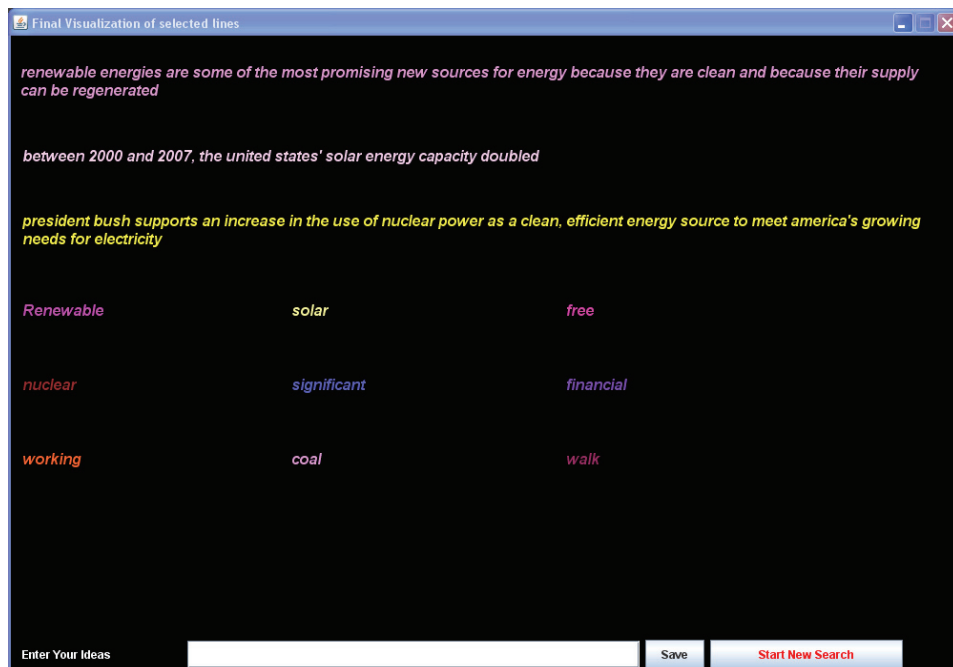
Figure 4.24: Screenshot of phase five of Creative Pad.
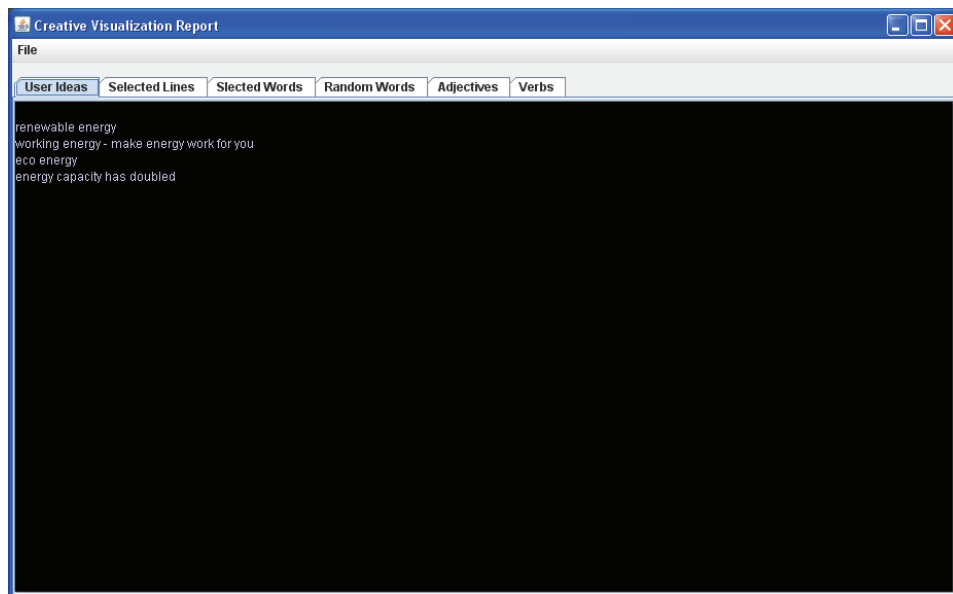
Figure 4.25: Screenshot of phase six of Creative Pad.

Chapter 5

Experiments and results

> At every single point and period, therefore, language, like nature itself, appears to man - in contrast to all else that he has already known and thought of - as an inexhaustible storehouse, in which the mind can always discover something new to it, and feeling perceive what it has not yet felt in this way. (Humboldt, 1988)

This chapter describes the experiments done using Creative Pad, and the results generated from analysing the data obtained from these experiments. The goal of these experiments was to study if Creative Pad would successfully trigger new ideas in the user and if so, whether the data displayed by the Creative Pad would be the prompt for these ideas. In the end of a task performed by the participants, a report was saved that included the selected words, sentences, and generated ideas. The goal is to show a connection between the words and sentences the user chose and the ideas generated. The task of identifying this connection from the data is challenging as there is no exact way of analysing what led to a generation of a particular idea. To do this we used two criteria:

- If the word appears in both the list of selected words or sentences, and the generated ideas, there is good support that a link between these items exists.

- The semantic meaning of the word or sentence, for example "selected word: fresh-> generated idea: food" describe a link.

The experiments are divided into two categories:

1. Experiments conducted with an advertising creative, where the goal was to use Creative Pad to generate ideas related to an imaginary product and produce a sketch of an advertisement. An additional experiment was also conducted for a company for an authentic advertising case.

2. General brainstorming experiments with students, where the goal was to study how the Creative Pad could perform in triggering ideas in general.

In section 5.1, I will present the results and experiments conducted with advertising agency creatives. Section 5.2 describes the experiments conducted with students. Section 5.3 presents an analysis of the open-ended questions presented to users of Creative Pad in an online questionnaire.

5.1 Creatives experiments

These experiments were conducted with six advertising agency creatives, four in New Zealand and two in Finland. The task was to use the Creative Pad to come up with ideas for imaginary products and produce a sketch of how the concept could be visualised. The participants were asked to enter search terms into Creative Pad, run the program and save a report of the selected data and ideas. Then the creative was asked to draw a sketch of the idea(s) (not necessarily in the format of an advertisement, but anything that would help to realise the concept or idea.)

Three tasks for three different imaginary products were conducted. First, an experiment for "car with more family space" was conducted. In the second

experiment the imaginary product was "a chocolate for women". The third experiment was to generate ideas for "coffee keeps you awake."

Having completed these experiments, a real-world application was trialled whereby an actual advertisement was created for a company.

5.1.1   Task A: A car with more family space

The first task was to create ideas for a car with more family space using Creative Pad. The creatives were asked to input *car+family+space* as the search terms into Creative Pad.

Experiment (30 minutes):

- Come up with an idea for "a car with more family space".

- Instructions:

    1. Enter search terms *car+family+space* into Creative Pad.

    2. Run the visualisation and enter any ideas into the software. Save the report.

Use A4-sized paper and a black marker to draw or write whatever you think you need to describe your concept.

5.1.2   Results

All creatives were able to generate ideas for this task using Creative Pad. Table 5.1 presents the data collected for task A: a car with more family space.

Result A1

Two ideas were generated by this participant:

Result	A1	A2	A3	A4	A5	A6	Average
Adjectives displayed	228	283	350	358	531	234	331
Verbs displayed	75	78	95	96	122	43	85
Random words displayed	20	20	30	20	30	30	25
Selected words	25	22	18	31	17	9	20
Selected sentences	5	4	0	7	2	2	3
Users ideas	2	12	1	6	3	4	5

Table 5.1: Data for task: a car with more family space.

- Very big family is going on vacation with this ACME car. Daddy packs up lots, like 10 feet high tower of suitcases and wondrously everything fits in. Then kids, about 50 or so step into car with no difficulties. They start driving. Mummy says: How about a little song? Kids start singing, and the sound is like a big church choir. Bunch of hippies have a broken van and they hitch-hike. The nice family of course picks them all up - and all fit in with no difficulties.

- Couple moving into a new house. They have all their stuff in their sedan. Two movers start carrying stuff out. They take all kind of large furniture: Bookshelves, pianos, refrigerators and so on. Night comes, and guys all still working and sweating out. Then the slogan starts with house and car in the background: "When you need a little more room. . . ."

Here, the creative has described the idea as a concept or a story rather than a brief idea. The focus is on fitting more items in a car than is actually possible (see figures 5.1 and 5.2).

Result A2

Twelve ideas were generated by this participant:

- Sleeping in car.

Selected Words	User's Ideas	Selected Sentences
rear Perfect handle extra long-term Financing spin extend appeal emphasize Fold improve enjoy rolling parking smart largest driven professional therecommended quieter cruising removable pick sit	VERY big family is going on vacation with this ACME car. Daddy packs up LOTS, like 10 feet high tower of suitcases and wondrously everything fits in. Then kids, about 50 or so step into car with no difficulties. They start driving. Mummy says: How about little song? Kids start singing and sound is like big church choir. Bunch of hippies have their van broken and they hitch-hike. Nice family of course picks them all with - and all fit in with no difficulties. Couple moving in to a new house. They have all their stuff in their sedan. 2 removers start picking stuff out. They take all kind of large furniture: Bookshelves, pianos, refrigerators and so on. Night comes and guys all still working and sweating out. Then there comes slogan with house and car background: "When you need a little more room..."	The appeal of sedans goes beyond the gas money saved, however, and includes perks like affordability, nimble handling, and large trunk space As a stay-at-home mom, you can take hubby to work and pick him up when you need the car Remember, a car that is rolling down the road has a lot of energy behind it How would I improve this car Good points: Ride, performance, roominess, optional satellite radio,dealer satisfaction scores, rear access doors, storage space, entrylevel pricing

Figure 5.1: Result A1. Selected words, sentences, and generated ideas for task: a car with more family space.

- Cheap accommodation.

- Built-in stove.

- Shower.

- Sleeps two people.

- Double bed.

- Seats fold away.

- Large space.

- Camper car.

- Roof expands.

- Transforms to a camper car.

- Electric hybrid.

Figure 5.2: Result A1. A sketch of the idea generated for task: a car with more family space.

Here the final idea which is a conventional car transforming into a camper car appears to be triggered by words such as comfortable, camping, compact and interior (see figure 5.3). The ideas are linked to each other sequentially leading to the final idea which is the car transforming into an electric hybrid (see figure 5.4).

Result A3

One idea was generated by this participant:

- Why needing high-tech when you can bring everything with you?

The words selected by the participant (see figure 5.5) reveal the emphasis on being able to put everything one needs in the car. The sketch of the idea

Selected Words	User's Ideas	Selected Sentences
buy interior buying Camping Rental Comfortable compact feel Top easy speed owned Search appeal Set cheap National personal excellent ideal Contacting automotive	sleeping in car. cheap accomodation built in stove has a shower sleeps 2 people double bed seats fold away large space camper car roof expands transforms to a camper car electric hybrid	Pros: Great Price, Comfortable Ride, Lots of Space, Great Family Car You feel very little movement in the car and it wouldn't be a terrible exaggeration to say that you could easily fall asleep in the backseat Who should buy this car best car I've ever owned",

Figure 5.3: Result A2. Selected words, sentences, and generated ideas for task: a car with more family space. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

describes all the items you can fit inside a car and enjoy your lifestyle on the road (see figure 5.6).

Result A4

Five ideas were generated by this participant:

- No more need for diet.
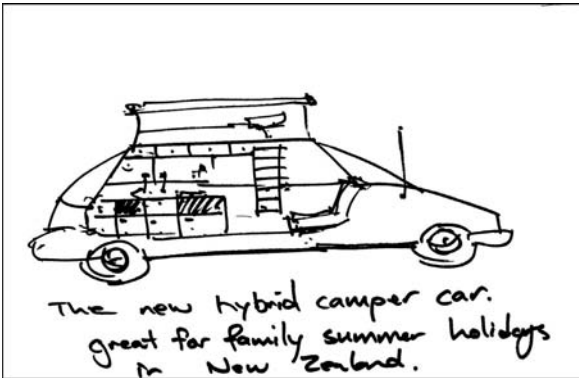
Figure 5.4: Result A2. A sketch of the idea generated for task: a car with more family space.

Selected Words	User's Ideas	Selected Sentences
more		
need		
large		
many		
much		
looking		
give		
needs		
feel	why needing high tech when you	
helps	can bring everything with you?	
ideal		
provide		
improve		
everything		
play		
better		
being		
Going		

Figure 5.5: Result A3. Selected words, sentences, and generated ideas for task: a car with more family space. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- Take the cow with you too.

- Sleeping bags not included.

- No parties allowed.

- Car with so much family space.

Here, the idea the creative has chosen to visualise (see figure 5.8) appears to be triggered by the word, *camping*, and the sentence related to sleeping (see figure 5.7).

Result A5

Three ideas were generated by this participant:

- Some family members doing something that requires a lot of space and enjoying what they are doing. Afterwards they step out of a car.

- A car is parked in front of a house (or a hotel or something else). First, the parents come out and take some luggage and a couple of kids inside. Right after they come back for more, and more again.

Figure 5.6: Result A3. A sketch of the idea generated for task: a car with more family space.

- A car is parked in front of a restaurant, some people come out and the service person asks "table for four?" and the person from the car replies "no, table for eight".

The ideas focus on fitting more people and items inside the car. Words that have possibly triggered the thinking include: *Comfortable*, *compact*, and *spacious* (see figure 5.9). One of the ideas is chosen and visualised in figure 5.10.

Result A6

Four ideas were generated by this participant:

- More <u>room</u> for your precious cargo.

- Designed with <u>them</u> in mind (family).

Selected Words	User's Ideas	Selected Sentences
Best has more need Camping Ride large Comfortable rear Rental compact much looking been easy Second speed owned good old needs feel little automatic available help go personal ideal Having extended	no more need for diet take the cow with you too sleeping bags not included no parties allowed car with so much family space	Family Car & Limo Service is in your extended network You feel very little movement in the car and it wouldn't be a terrible exaggeration to say that you could easily fall asleep in the backseat No other car I've seen has had this much space Overall, if you need a family car, with lots of space, a comfortable ride and much more, definatly consider the Chrysler Pacifica best car I've ever owned", Since this is a rear wheel drive car, the trunk doesn't extend up under the package shelf (That A family looking for a roomy sedan that can get 50+ MPG and is kind to the environment

Figure 5.7: Result A4. Selected words, sentences, and generated ideas for task: a car with more family space. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- It's all about them.

- It's like a spare room.

Two themes seem to appear from these ideas: room and them (underlined above). It is interesting to note that the word *room* appears in one of the selected sentences: "An extra room gives you plenty of creative ways to use this space" and possibly acts as a synonym for room. The creative also uses the word *room* in two different ways:

1. Describing space.

2. Describing a physical room as "spare room."

Also, the word, *designed* that appears in one of the generated ideas is one of the selected words.

Figure 5.8: Result A4. A sketch of the idea generated for task: a car with more family space.

In figure 5.12, the creative has selected one of the generated ideas "more room for your precious cargo" (see figure 5.11) and visualised a sketch of the idea.

Discussion

All the creatives were able to generate ideas for the task "a car with more family space" using Creative Pad. They were also able to select an idea from those generated and visualise it. On average, twenty words and three sentences were selected, and five ideas generated. In all instances except Result A1, a connection between the selected words and ideas could be observed as depicted by black arrows in figures 5.3,5.5,5.7,5.9 and 5.11. The approach in Result A1 turned out to be a different style of describing an idea. Rather than a brief description of the idea, the creative presented the idea as a concept or a story. This approach makes recognising the connections between the selected words

Selected Words	User's Ideas	Selected Sentences
standard	Some family members doing something	
enjoy	that requires a lot of space and enjoying	
efficient	what they are doing. Afterwards they	
easy	step out of a car.	
larger		com - Answers to everyday family
interior		life including recipes,
comfortable	A car is parked in front of a house (or a	entertainment, parenting, coupons,
safe	hotel or something else). First the	travel & more
fuel-efficient	parents come out and take some	
full	luggage and a couple of kids inside.	You share with Friends and Family
compact	Right after they come back for more,	what's coming up in your life so
perfect	and more again.	they can wish you good luck or a
FREE		safe return home
feel	A car is parked in front of a restaurant,	
Answers	some people come out and the service	
live	person askes "table for four?" and the	
spacious	person from the car replies "no, table for	
	eight".	

Figure 5.9: Result A5. Selected words, sentences, and generated ideas for task: a car with more family space. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

and sentences and generated ideas more challenging. In Result A2 a workable progression of an idea can be observed where the ideas generated start from an initial idea of "sleeping in a car" to a whole new concept where the car is transformed into a "camper car" or "electric hybrid."

5.1.3 Task B: A chocolate for women

The second task was similar to the first but with a different product: a new chocolate for women. The participants were asked to use *women+chocolate* as the search terms in the Creative Pad.

Experiment (30 minutes):

- Come up with an idea for a chocolate targeted for women.

- Instructions:

    1. Enter search terms *women+chocolate* into Creative Pad.

    2. Run the visualisation and enter any ideas into the software. Save the report.
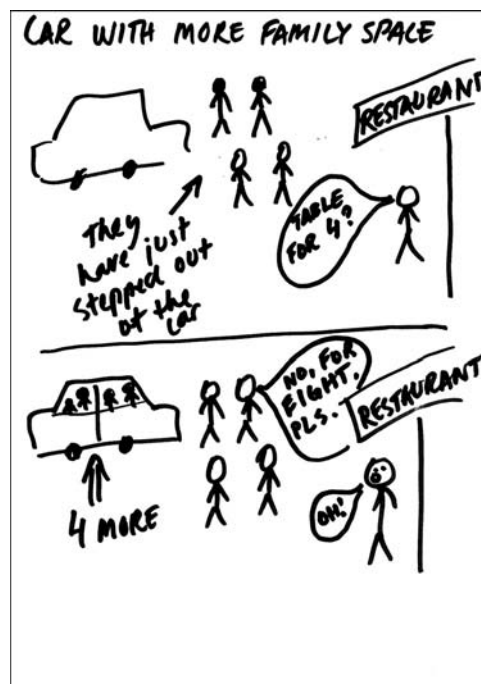
Figure 5.10: Result A5. A sketch of the idea generated for task: a car with more family space.

Result	B1	B2	B3	B4	B5	B6	Average
Adjectives displayed	68	219	327	360	278	399	275
Verbs displayed	18	40	73	86	55	101	62
Random words displayed	30	20	20	30	30	20	25
Selected words	13	26	33	17	15	45	25
Selected sentences	5	8	2	5	7	6	6
Users ideas	10	2	3	1	4	14	6

Table 5.2: Data for task: a chocolate for women.

Use A4-sized paper and a black marker to draw or write whatever you think you need to describe your concept.

5.1.4 Results

The Creative Pad worked successfully in producing ideas for this task. Table 5.2 presents the data from task B: a chocolate for women.

Selected Words	User's Ideas	Selected Sentences
more extra larger designed organize stowed uses ground-breaking full	more room for your precious cargo designed with them in mind (family) it's all about them it's like a spare room	The firm claims it combines the practicality of a larger car with the appeal of a supermini An extra flex room gives you plenty of creative ways to use this space, whether you,

Figure 5.11: Result A6. Selected words, sentences, and generated ideas for task: a car with more family space. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

Result B1

The creative was able to produce ideas for an advertisement using Creative Pad. Figure 5.13 presents the user's selected words, selected sentences, and the ideas generated. An arrow represents a possible relationship between a selected word or sentence and a generated idea. Ten ideas were generated by the participant:

- Tell them it's <u>healthy</u> then they'll buy more.

- <u>Health</u> benefits of chocolate.

- <u>Guilt-free</u> chocolate.

- Chocolate=better <u>sex</u>.

- Chocolate, the <u>healthy</u> alternative.

- The <u>drug</u> they can't ban.

- More chocolate=more <u>sex</u>.

- <u>Sex</u> lies and chocolate.

- Chocolate, the new designer <u>drug</u>.

Figure 5.12: Result A6. A sketch of the idea generated for task: a car with more family space.

- Chocolate, the guilt-free treat.

Here, the ideas seem to follow four themes:

1. Health benefits of chocolate.

2. Chocolate as a treat.

3. Chocolate as an aphrodisiac.

4. Addiction to chocolate.

A relationship between these themes and the words and sentences selected is visualised in figure 5.13.

The creative has decided to visualise two main themes of the ideas:

- Chocolate as an aphrodisiac; see figure 5.14(a).

- The health benefits of eating chocolate; see figure 5.14(b).

Selected Words	User's Ideas	Selected Sentences
other is sexual healthy Buy Addictive better deny treat high flaky developed Finds	tell them it's healthy then they'll buy more health benefits of chocolate guilt-free chocolate chocolate = better sex chocolate, the healthy alternative the drug they can't ban more chocolate = more sex sex lies and chocolate chocolate, the new designer drug chocolate, the guilt-free treat	According to Italian researchers, women who eat chocolate regularly have a better sex life than those who deny themselves the treat Chocolate is not like a food, it is like a drug I strongly believe eating chocolate may improve their sexual function,, s OK to eat some chocolate as long as you balance it with other things Chocolate, tea and the healthy heart

Figure 5.13: Result B1. Selected words, sentences, and generated ideas for task: a chocolate for women. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

Result B2

Two ideas were generated by this participant:

- Sell chocolate at women but not in a girly way. Sell chocolate like beer. Testimonials: Randy, Truck driver enjoys few bits of tasty dark chocolate from Ecuador. Marlboro man look-alike chewing milky treat while watching big American scenery from top of his horse. Wild college students having chocolate-eating contests. Hot cocoa spilling everywhere at reckless party.

- Lady shopping at local mall: After picking up all necessary items on trolley she stops at chocolate shelf. She hesitates for while, then picks up bar of tasty treat. Hesitates more, picks another and another until trolley is almost filled. She goes out, it is very hot. She loads items in car and starts driving. Traffic is very slow and air conditioning is
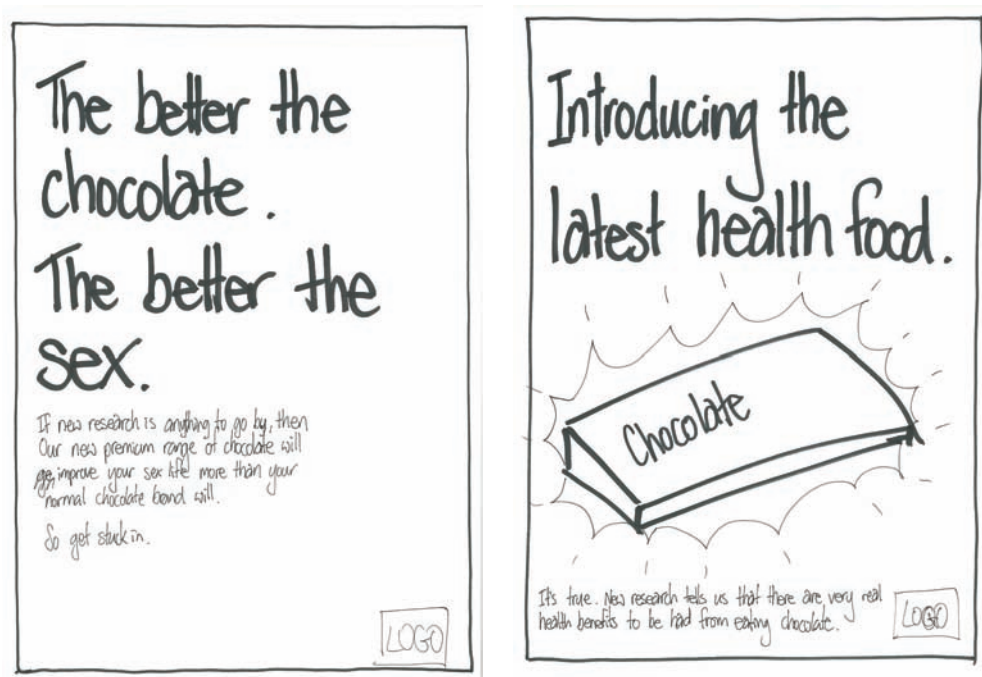
(a) Emphasise chocolate as an aphrodisiac (b) Emphasise health benefits of chocolate

Figure 5.14: Result B1. Two sketches of the ideas for task: a chocolate for women.

broken. She sees that chocolate starts melting. Trapped in traffic lights, she comes very desperate and finds no other solution than starting to eat chocolate bars. First the task seems very difficult but after few bars lady relaxes and continues to eat more like enjoying situation: she doesn't see lights go green. Other cars toot their horns. Police comes to check the situation. Lady opens car window smears of chocolate all over her face. "What's wrong my dear lady?" "My chocolate" She notices she has eaten it all. "I forgot the chocolate!!!" She makes a U-turn and car disappears at the destination of mall.

Here, the ideas are more concepts and stories than distinct brief ideas. This suggests that in some creatives the Creative Pad triggers a series of thoughts that are then described as scenes or moments in time where a particular event takes place. The sketched idea here is very different from the conceptual thinking in the ideas and shows how a concept can be executed in a simple

Selected Words	User's Ideas	Selected Sentences
dark hot healthy Addictive chemical treat affect active brown delicious amorous sold Giving overstuffed cozy celebrate fresh pimple-inducing fit fat sugary good-for-you rich calming relaxating satisfying	Sell chocolate at women but not in a girly way. Sell chocolate like beer. Testimonials: Randy, Truck driver enjoys few bits of tasty dark chocolate from Ecuador. Marlboro man look-alike chewing milky treat while watching at big american scenery from top of his horse. Wild college students having chocolate-eating contests. Hot cocoa spilling everywhere at reckless party. Lady shopping at local mall: After picking up all necessary items on trolley she stops at chocolate shelf. She hesitates for while, then picks up bar of tasty treat. hesitates more, picks another and another until trolley is almost filled. She goes out, it is VERY HOT. She loads items in car and starts driving. Traffic is very slow and air conditioning is broken. She sees that chocolate starts melting. Trapped in traffic lights, she comes very desperate and finds no other solution than starting to eat chocolate bars. First task seems very difficult but after few bars lady relaxes and continues to eat more like enjoying situation: she doesn't see lights go green. Other cars toot their horns. Police comes to check the situation. Lady opens car window smears of chocolate all over her face. "What's wrong my ear lady?" "My chocolate.." She notices she has eated it all. "... I forgot the damn chocolate!!!" She takes U-turn and car disappears at the destination of mall.	According to Italian researchers, women who eat chocolate regularly have a better sex life than those who deny themselves the treat Chocolate doesn't just tingle the tongue; it's a soup of many compounds that affect the brain, including caffeine and theobromines And it's true: chocolate does affect women differently than men, says Anthony Auger, an assistant professor of psychology at UW-Madison Addictive nature of chocolate among women Dark chocolate can provide as much as 3 grams of fiber per 1-ounce serving Strong Chick, the company's milk chocolate, is for the "fit and healthy leader with can-do attitude" and is fortified with calcium Dark chocolate has higher cocoa liquor percentages, which equals all the good-for-you stuff Because like smoking and beer chocolate is very addictive

Figure 5.15: Result B2. Selected words, sentences, and generated ideas for task: a chocolate for women. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

way (see figure 5.16). Figure 5.15 presents the user's selected words, selected sentences, and the ideas generated.

Result B3

Three ideas were generated by this participant:

- Chocolate-filled pool.

- With women in choc pool.

- Heated spa pool fill of chocolate.

Here, the ideas seem to follow a sequence of ideas triggered by the words: *Covered*, *hot*, *filled* and *full* (see figure 5.17). The final idea in the sequence is "a heated spa pool full of chocolate" which is visualised in figure 5.18.

Figure 5.16: Result B2. A sketch of the idea generated for task: a chocolate for women.

Result B4

One idea was generated by this participant:

- Fulfil your needs.

The idea appears to be triggered by the words *feel*, *need* and *treat*, and the sentences that describe the features of chocolate as an aphrodisiac as well as something that is associated with dreaming (see figure 5.19). The idea is visualised in figure 5.20.

Result B5

Fourteen ideas were generated by this participant:

- It's brown and sweet like you.

- You deserve it after all that exercise.

Selected Words	User's Ideas	Selected Sentences
Healthy enjoy feel Covered popular sweet true wonderful Giving British hot Festival feeling surveyed treat affect craving perfect Fits western called shopping wrong Filled full fat FREE top increased organic select brown imagine	chocolate filled pool with women in choc pool heated spa pool full of chocolate	Women really are hot for chocolate Sarah-Kate Templeton

Chocolate has also been called the food of the devil; but the theological basis of this claim is obscure |

Figure 5.17: Result B3. Selected words, sentences, and generated ideas for task: a chocolate for women. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- It loves you too.

- Give in.

- It wants you too.

- Satisfy.

- The chocolate that wants you too.

- The chocolate that wont make you feel bad.

- A little bit nutty.

- Delicious.

- Yum.

- The chocolate that craves you too.

- The chocolate that feels good when you eat it.

Figure 5.18: Result B3. A sketch of the idea generated for task: a chocolate for women.

- Chocolot.

Here, the ideas seem to be triggered by many words as described in figure 5.21. Also, the ideas seem to be in sequential order, progressing towards the idea that is then visualised: "the chocolate that craves you too" (see figure 5.22).

Result B6

Four ideas were generated by this participant:

- Rich/irresistible taste of chocolate gives one a moment of their own, enjoyment brings out the perfect you.

- X is there when life is happy, x is there when everything sucks, x is there to comfort, to cheer up, always there for one. -> x is chocolate

Selected Words	User's Ideas	Selected Sentences
good		According to Italian researchers, women who
eating		eat chocolate regularly have a better sex life
dark		than those who deny themselves the treat
Healthy		
much		Dark Chocolate
been		
many		Chocolate has also been called the food of the
true		devil; but the theological basis of this claim is
feel	fulfil your needs	obscure
need		
Sinful		In the UK, chocolate bars laced with cannabis
feeling		are popular with many victims of multiple
treat		sclerosis
different		
help		Make your dreams come true at the fifth
made		annual NC State Women's Center Chocolate
Fits		Festival

Figure 5.19: Result B4. Selected words, sentences, and generated ideas for task: a chocolate for women. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- Two scenarios: one trying many things to make oneself feel good, sweating over it, stressing and one in a hectic situation, taking a bite of chocolate and achieving perfect relaxation.

- History: ancient people and their "chocolate habits" and modern people with somewhat similar habits.

Here, the generated ideas focus on the effect chocolate has on women based on the words and sentences selected by the user in figure 5.23. The visualisation summarises the idea of chocolate as the perfect enjoyment (see figure 5.24).

Discussion

In this experiment, all creatives were able to generate ideas using Creative Pad. On average, twenty-five words and six sentences were selected and six ideas were generated. Also, all creatives were able to visualise the idea. In Result B1, the creative visualised two different ideas generated (see figure 5.14) suggesting that Creative Pad can prompt different ideas. Furthermore, in results B2 and
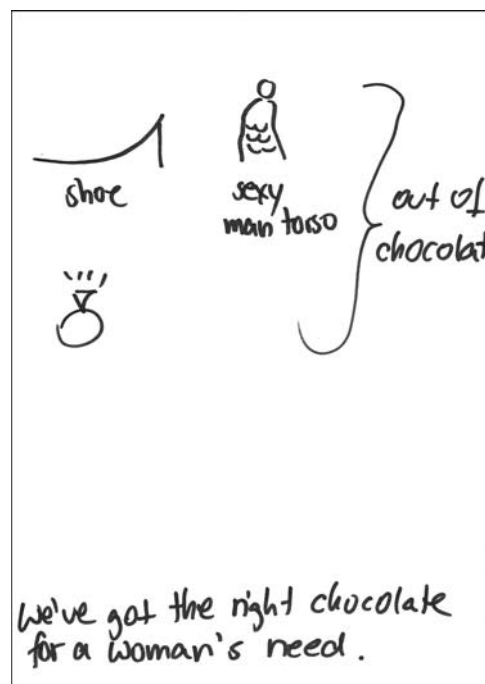
Figure 5.20: Result B4. A sketch of the idea generated for task: a chocolate for women.

B6, again a different style of expressing the idea is used, it being described as a concept or a short story or descriptions of different situations (see figures 5.15 and 5.23). In result B6, no link between the selected words and sentences and ideas could be observed. In result B2 no link between the ideas and the visualisation could be observed. Possibly when an idea is presented as a concept, a straight forward visualisation is more challenging. In four of the six results, a link from both words and sentences could be observed suggesting that the ideas were triggered by both words and sentences.

5.1.5 Task C: Coffee keeps you awake

In this experiment, the task was to create ideas for coffee, with the emphasis on the ability of coffee to keep you awake. The participant was asked to use *coffee+keeps+you+awake* as the search terms in the Creative Pad.

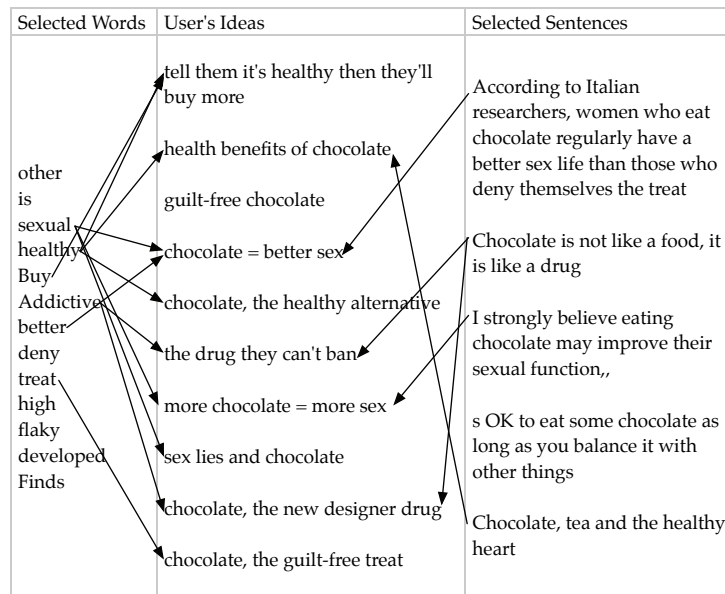| Selected Words	User's Ideas	Selected Sentences
more		
good		
eating		
eat		
contains		
Make		
Healthy		
dark		
much		
enjoy		According to Italian researchers,
give		women who eat chocolate regularly
high		have a better sex life than those who
popular		deny themselves the treat
contain		
Finest	it's brown and sweet like you	Women who have a daily intake of
Giving	you deserve it after all that exercise	chocolate showed higher levels of
makes	it loves you to	desire than women who did not have
feel	give in	this habit
Sinful	it wants you too	
treat	satisfy	I strongly believe eating chocolate may
present	the chocolate that wants you too	improve their sexual function,,
wonderful	the chocolate that wont make you	
craving	feel bad	Women who suffer mood swings as a
perfect	a little bit nutty	result of their menstrual cycle may
higher	delicious	also suffer a dip in their sexual
sexual	yum	function
Psychoactive	the chocolate that craves you too	
sweet	the chocolate that feels good when	In 2007, a UK study suggested that
shopping	you eat it	eating dark chocolate was more
Filled	chocolot	rewarding than passionate kissing
full		
fat		Chocolate clearly delivers far more
FREE		than a brief sugar high
Tell		
making		
rich		
brown		
buy		
delicious		
Annual		
eaten		
consumed		
special		
reciprocate		
soft		

Figure 5.21: Result B5. Selected words, sentences, and generated ideas for task: a chocolate for women. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

Experiment (30 minutes):

- Come up with an idea for a coffee that keeps you awake.

- Instructions:

  1. Enter search terms *coffee+keeps+you+awake* into Creative Pad.

  2. Run the visualisation and enter any ideas into the software. Save the report.

Use A4-sized paper and a black marker to draw or write whatever you think you need to describe your concept.

Figure 5.22: Result B5. A sketch of the idea generated for task: a chocolate for women.

Result	C1	C2	C3	C4	C5	C6	Average
Adjectives displayed	403	309	386	369	113	419	333
Verbs displayed	138	108	130	126	36	138	113
Random words displayed	20	20	30	20	30	30	25
Selected words	41	46	8	28	11	12	24
Selected sentences	14	3	4	18	6	9	9
Users ideas	3	5	3	13	3	5	5

Table 5.3: Data for task: coffee keeps you awake.

5.1.6   Results

The Creative Pad worked successfully in producing ideas for this task. Table 5.3 presents the data from task C: coffee keeps you awake.

Result C1

Three ideas were generated by this participant:

- Arty people watching Andy Warhol's "Sleep". Nothing happens on screen and all start looking tired and annoyed. One after another falls in sleep or

Selected Words	User's Ideas	Selected Sentences
Sensual perfect treats rich favorite Exotic happy irresistible Finest achieve fine startle successful Selected bake	Rich/irresistible taste of chocolate gives one a moment of their own, enjoyment brings out the perfect you. x is there when life is happy, x is there when everything sucks, x is there to comfort, to cheer up, always there for one. -> x is chocolate Two scenarios: one trying many things to make oneself feel good, sweating over it, stressing and one in a hectic situation, taking a bite of chocolate and achieving perfect relaxation. History: ancient people and their "chocolate habits" and modern people with somewhat similar habits.	Are you looking for that perfect Chocolate Slogan for you and your Chocoholic women friends I want nothing to do with an object that does to my wife in one bite what I've worked for an entire relationship to achieve Guys like chocolate just fine; it's just not essential to life as we know it For high cravers, the intensity of their eye blinking response - something known as "the startle reflex" - increased as they viewed chocolate images Chocolate is also very rich in polyphenols, a type of bioflavonoid and antioxidant; evidently, more so than green tea Chocolate is the most widely and frequently craved food and it is one of the most popular sweet-tasting treats in the world and has been for centuries For many individuals, chocolate is associated with happy memories such as holidays, birthdays, and other treats

Figure 5.23: Result B6. Selected words, sentences, and generated ideas for task: a chocolate for women. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

leaves the theatre. At the end camera zooms at one guy with bright open eyes and very excited features. He looks like he is watching something very exciting and impressive. Slogan: "Something to keep you awake in ANY situation".

- Very angry tiger elephant escaped from zoo. He rushes through town breaking up practically everything possible. All people fleeing terrified. Only one guy, sitting on bar terrace sipping coffee and listening metal very loud with earphones on, eyes closed, does not notice anything; raged elephant rushes closer: Zoo guards appear, they have guns loaded with anaesthetic bullets (arrows?). Gunman aims at elephant, but sneezes just in wrong time and arrow hits poor coffee drinker. He startles, sees
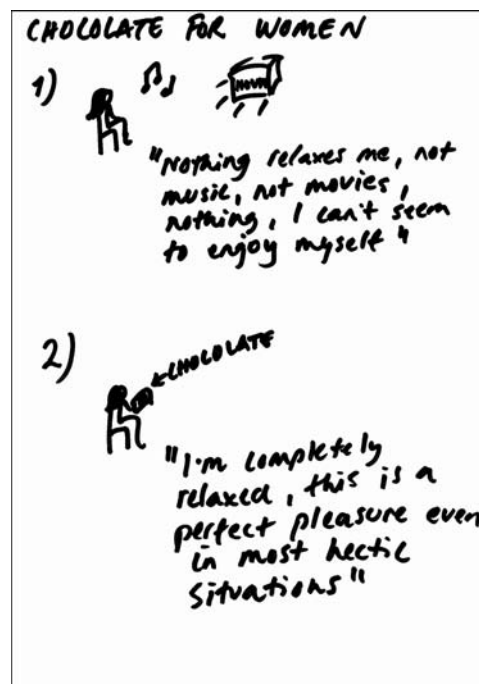
Figure 5.24: Result B6. A sketch of the idea generated for task: A chocolate for women.

what hell is going on. Just then he starts feeling fuzzy and is about collapse. But, suddenly he becomes very wakeful and runs like hell away from agitated beast. Slogan: "Something to keep you awake at ANY situation."

- Guy is watching TV at night. Something throws sand at his face continuously. He does not notice it at all. This goes on for a while. Then he pours cup of coffee and serves it for a guy sitting next to him. The guy is sandman, very tired. Watching also TV having his sandbag laying on the floor and mechanically throwing sand at guy, not even watching at him any more.

Here, the approach is focused on describing the ideas as concepts instead of brief distinct ideas. The links between the selected words and sentences and the concepts developed are presented in figure 5.25. The idea is visualised in

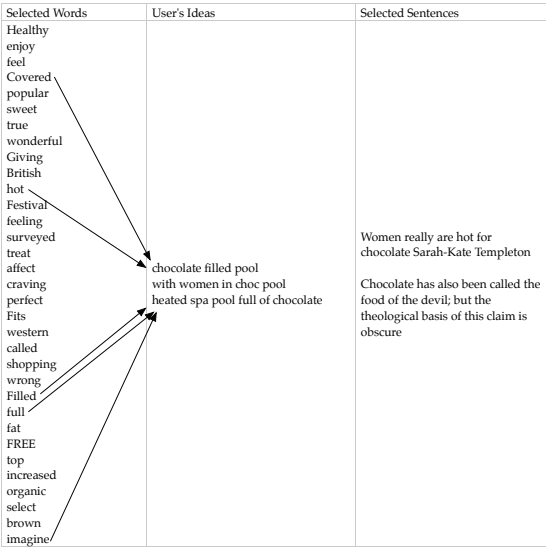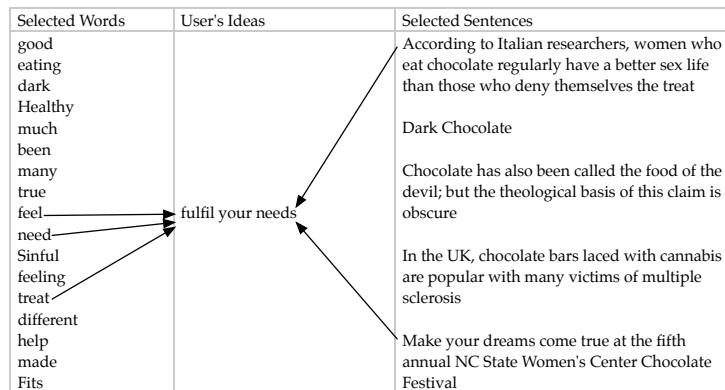| Selected Words	User's Ideas	Selected Sentences
awake sleep drinking morning start stay feel bed tired hot black break Brewed addicted tasting boost calm Instant strong caffeinated unique sipping stir add stimulating sweet Turkish Colombian Filtering liquid obsessed artsy warm busy sit chew spit tempting serve invented startle	Artsy people watching Andy Warhol's "Sleep". Noyhing happens on screen and all start looking tired and annoyed. one after another falls in sleep or leaves the theatre. At the end camera zooms zt one guy with bright open eyes and very excited features. He looks like he is watching something very exciting and impressive. Slogan: "Something to keep you awake in ANY situation." Very angry tiger elephant escaped from zoo. He rushes through town braking up practically everything possible. All people fleeing terrified. Only one guy, sitting on bar terrace sipping coffee and listening metal VERY LOUd with earphones on, eyes closed, does not notice anything raged elephant rushes closer: Zoo guards appear, they have guns loaded with anesthetic bullets(arrows?). Gunman aims at elephant but sneezes just in wrong time and arrow hits poor coffee drinker. He startles, sees what hell is going on. Just then he starts feeling fuzzy and is about collapse. But suddenly he becomes very wakeful and runs like hell away from agitated beast. Slogan "Somethin to keep you awake at ANY situation." Guy is watching TV at night. something throws sand at his face continuously. He does not not notice it at all. This goes on for a while. Then he pours cup of coffee and serves it for a guy sitting next to him. Guy is sandman, very tired and cashed. Watching also tv having his sandbag laying on the floor and mechanically throwing sand ar guy, not even watching at him any more.	The artsy coffee drinkers: These are the ones who are connoisseurs To survive work after an early work-out, how else could they stay awake without coffee Does Coffee Still Keep You Awake Anyhow, I realized that coffee does not really keep me awake anymore ‚Äì unless I have several cups in a row How Much Sleep Do You Need In the United States, there are about 160 million American who are hooked in drinking coffee Within a minute of drinking coffee, caffeine levels peak to generate vigilance, sharp concentration and improves mood The urge of drinking a coffee has no exact time However, what the rider did not know is that coffee is not a substitute to a normal sleep Drinking Coffee May Decrease Incidence of Alcohol Related Cirrhosis of the Liver Many small cups of coffee during the day keeps you awake better than few big cups The dessert that keeps you awake Do not use benzo's each time you feel bad Keeps You Alert When You Want To Be Awake

Figure 5.25: Result C1. Selected words, sentences, and generated ideas for task: coffee keeps you awake. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

figure 5.26.

Result C2

Five ideas were generated by this participant:

- Fresh coffee all the time.

- Coffee bean tree.

- Grind coffee then heat.

- Camping with coffee fresh.

Figure 5.26: Result C1. A sketch of the idea generated for task: coffee keeps you awake.

- Fresh coffee on open fire.

Here, the ideas generated suggest a sequential approach from the first idea to the last. The ideas start from fresh coffee, beans, grinding, to camping and making coffee on an open fire. The relationships between these selected elements are presented in figure 5.27. The final idea chosen for visualisation "fresh coffee while camping" is presented in figure 5.28.

Result C3

Three ideas were generated by this participant:

- Keep your daydreams undiscovered.

- Dry eyes.

- Heavy heart rate.

Selected Words	User's Ideas	Selected Sentences
awake regular sleep brings feel morning tired fresh advertising choose start wide drinking stay free alert economic enjoy buy wakes Roasting black obvious boost build avoid interfering hydrated chugging single Bring normal fill delicious sipping work-out warm linger Wanna listen ideal organic sprinkle pour local grab	fresh coffee all the time coffee bean tree grind coffee then heat camping with coffee fresh fresh coffee on open fire	Out here on the west coast, coffee drinking is an art You can buy it in mugs to stay or cups to go You can just enjoy your quiet corner, or share a table

Figure 5.27: Result C2. Selected words, sentences, and generated ideas for task: coffee keeps you awake. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

Here an association with open eyes and being awake is made although eyes are not among the selected words (see figure 5.29). The final visualisation is a description of a situation where daydreaming is not allowed (see figure 5.30).

Result C4

Thirteen ideas were generated by this participant:

- Small dosage.

- Mornings.
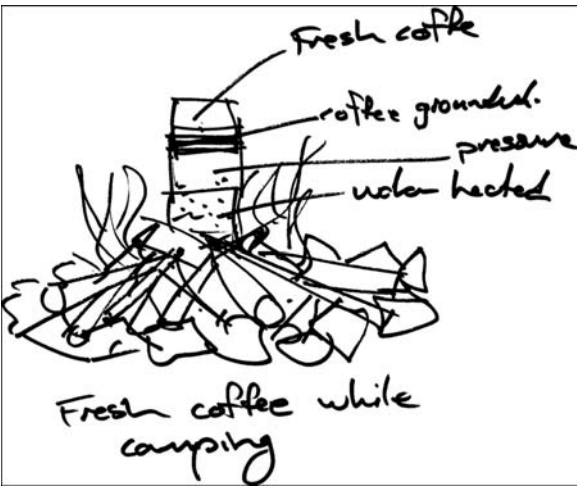
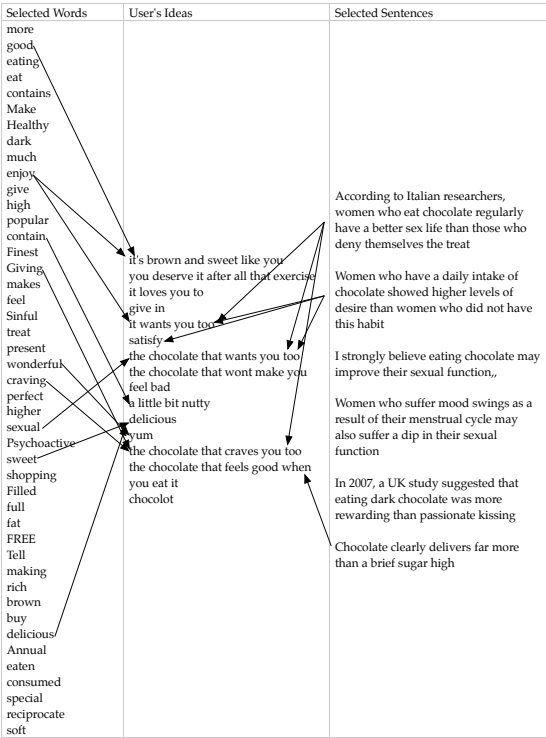Figure 5.28: Result C2. A sketch of the idea generated for task: coffee keeps you awake.

Figure 5.29: Result C3. Selected words, sentences, and generated ideas for task: coffee keeps you awake. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- Assignments.

- Better than all the others.

- Simply does its job. Does it well.

- Does what it's supposed to.

- As opposed to coffee that makes you sleep.

- It's like a screaming baby.

Figure 5.30: Result C3. A sketch of the idea generated for task: coffee keeps you awake.

- It's like a nagging wife.

- It's like a barking dog.

- Coffee thatttttt keeeeepppsss uy.

- The smell alone keeps you awake.

- Even in your sleep you are achieving stuff.

Here the data shows a high number of selected sentences, some of which show a direct link to the ideas generated (see figure 5.31). The visualised idea focuses on the smell of coffee as one of the associative elements of coffee (see figure 5.32).

Result C5

Three ideas were generated by this participant:

Selected Words	User's Ideas	Selected Sentences
make good more sleep warms decafinated big morning few small Many sleepy need decaffeinated choose bad feel keep stay start bed Reduce tired enjoy drinking hot buy wakes	small dosage mornings assignments better than all the others simply does it's job. does it well does what it's supposed to as opposed to coffee that makes you sleep it's like a screaming baby it's like a nagging wife it's like a barkingdog coffee thatttttt keeeeepppsss you the smell alone keeps you awake even in your sleep you are achieving stuff	To all students looking for a new university personality and identity: Out here on the west coast, coffee drinking is an art If you can't drink coffee after university, how will you ever make it in the business world To survive work after an early work-out, how else could they stay awake without coffee It's more than the coffee, it's the personality You can have small sizes or big sizes You can have it warm or cold, hot or slushy You can buy it in mugs to stay or cups to go To the over-achievers and academic whizzes: This is obvious - coffee keeps you awake or wakes you up The smell alone gives you a fresh start to a day of essay writing Many study groups survive long hours with a pot of coffee on In the morning when you have to get your kids ready for school, you'll need it to be awake Let's briefly start off with basic coffee fundamentals Many small cups of coffee during the day keeps you awake better than few big cups Main Category: Sleep / Sleep Disorders / Insomnia According to scientists at Harvard University, USA, a large cup of coffee in the morning gives you an initial boost that soon wears off They say lots of small coffees are better at keeping you alert You can read about their research in the journal Sleep They had to stay awake for 28-hour stretches - the same period some doctors and soldiers have to

Figure 5.31: Result C4. Selected words, sentences, and generated ideas for task: coffee keeps you awake. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- Life feels like trying to survive in a jungle. Be free to enjoy your life, free from tiredness.

- Life is like a jungle, where one must survive. With coffee, you're free to enjoy.

- When tired and trying to survive life, you can miss many things: the opportunity of a lifetime, love of life, friend, important message, etc. With coffee you're free from tiredness and ready to see everything meaningful around you.

Here, the ideas are related to coffee helping you survive through life. The ideas appear to be triggered by words such as *survive* and *aware* (see figure 5.33) and the creative has generated two different visualisations to describe

Figure 5.32: Result C4. A sketch of the idea generated for task: coffee keeps you awake.

the ideas; see figures 5.34(a) and 5.34(b).

Result C6

The ideas generated by this participant were:

- You can't drink coffee before bed. Why?

- It is not good to stay awake.

- Don't miss out on the mornings.

- Mornings are special.

- Kickstart your mornings.

Here, the ideas focus on the stimulating effects of coffee and the idea chosen for visualisation is centred around being awake and waking up in the mornings. Words associated with the ideas include: *awake, regular, sleep, wakes*. A more

Selected Words	User's Ideas	Selected Sentences
enjoy choose morning survive aware unique sprinkle ready boost helps enjoying	Life feels like trying to survive in a jungle. Be free to enjoy of your life, free from tiredness. Life is like a jungle, where one must survive. With coffee, you're free to enjoy. When tired and trying to survive life, you can miss many things: the opportunity of a lifetime, love of life, friend, important message etc. With coffee you're free from tiredness and ready to see everything meaningful around you.	Here are 10 reasons why I enjoy my java that will convert any coffee-hater into a coffee-addict that each one of you actually desires to become To survive work after an early work-out, how else could they stay awake without coffee When you drink coffee you get to choose what you want Many study groups survive long hours with a pot of coffee on You can also get to know someone by the type of coffee they choose to drink In the morning when you have to get your kids ready for school, you'll need it to be awake

Figure 5.33: Result C5. Selected words, sentences, and generated ideas for task: coffee keeps you awake. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

detailed analysis of links between the selected words and sentences is in figure 5.35. The main idea is visualised in figure 5.36.

Discussion

All the creatives were able to generate ideas in this experiment using Creative Pad. Also, all were able to visualise either one or more (see result C5) of the ideas generated. On average, twenty-four words and nine sentences were selected and five ideas were generated. Again, in result C1 the idea is presented as a concept or story rather than a brief sentence. Furthermore, similar to the discussion in the previous task in result C1, no link between the ideas in a story format and the visualisation could be observed. This provides more support for the notion that when an idea is expressed conceptually the link between the idea and its visualisation is not obvious. In all results a link between both words and sentences and the generated idea was observed suggesting that both

(a) Sketch 1   (b) Sketch 2
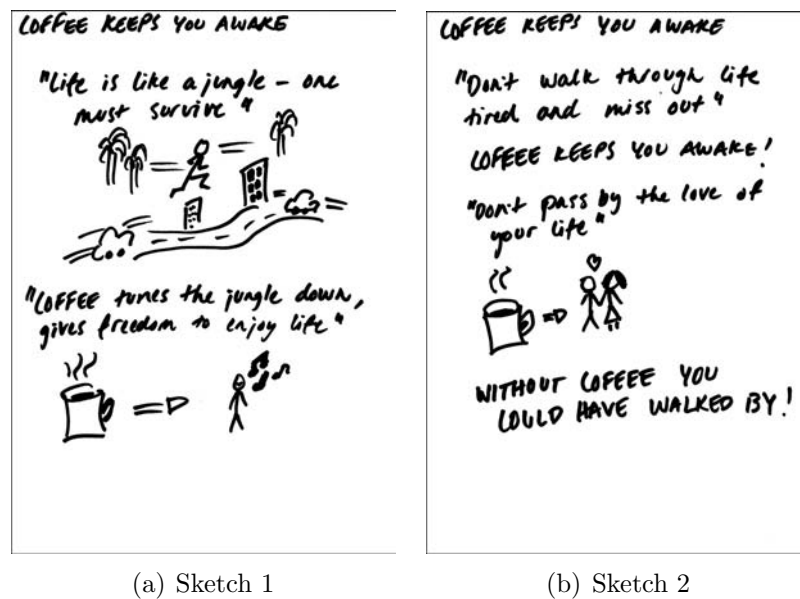
Figure 5.34: Result C5. Two sketches of the ideas for task: coffee keeps you awake.

were valuable in generating new ideas.

5.1.7 Generating ideas for a prospective client

Here, Creative Pad was installed in an advertising agency for a creative team to use in their daily work should such an opportunity arise, and to challenge their thinking. This result describes a situation where Creative Pad was used as a tool for idea generation for a prospective client, Mercury Energy. One of the ideas developed in this exercise was a billboard. An analysis of the results of this experiment (see figure 5.37) shows that a possible link between the selected words and sentences exists. Also, the idea for the billboard in figure 5.38 was developed based more on sentences than on words. In particular, three sentences provide a link to the result:

- It's not an estimate, it's just the price of that specific service.

- The Price is Right.

- We will tell you the exact charges for your desired item(s) before you

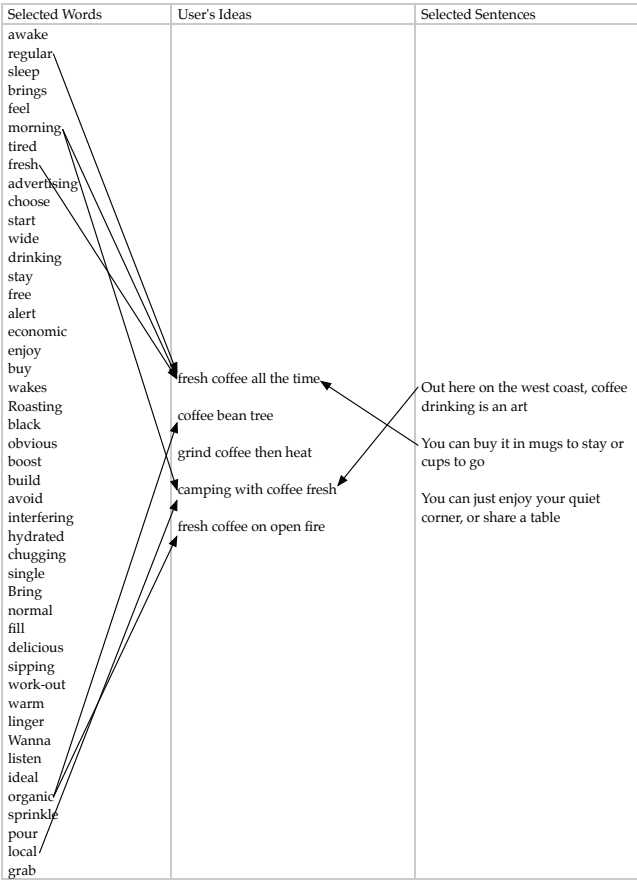| Selected Words	User's Ideas	Selected Sentences
		Late at night, chugging back coffee then keeps you working on that paper a bit longer than you could without it
		Does Coffee Still Keep You Awake
		Well he said that he just could not take the chance of drinking coffee and then not being able to sleep
awake keeps warms regular sleep decafinated few much Roasting wakes decaffeinated reduce	you can't drink coffee before bed. why? it's not good to stay awake don't miss out on the mornings mornings are special kickstart your mornings	So we got around to talking about how coffee keeps you awake and all that stuff
		How Much Sleep Do You Need
		Coffee brings people together, coffee keeps you awake, coffee warms you up and coffee tastes so good
		Anyhow, I realized that coffee does not really keep me awake anymore – unless I have several cups in a row
		This showed that although caffeine can keep you awake, it does not replace sleep - it just helps you stay awake while you build up a sleep debt
		If regular coffee keeps you awake nights; make with decafinated

Figure 5.35: Result C6. Selected words, sentences, and generated ideas for task: coffee keeps you awake. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

actually place an order.

From these selections the creative has generated the following ideas:

- Introducing an amazing new concept in power bills: You pay for exactly what you use.

- No guesswork. Pay for what you use.

- You use the power, then you pay for it. Genius.

- We match usage to price. Genius!

- No estimates, you just pay for what you use.

- Mercury energy: the price is right.

- You use the power. You pay for the power. Simple.

Figure 5.36: Result C6. A sketch of the idea for task: coffee keeps you awake.

- The power is in your hands.

The idea of matching power usage to price was developed into a sketch of a billboard (see figure 5.38).

5.2   Student experiments

The participants in this experiment were students at Auckland University of Technology, none of whom had an advertising background. The participants completed two different experiments using Creative Pad:

- A general brainstorming task for "Ideas for a dream holiday."

- An advertising-related task for "Slogan for Lotto."

First, I will describe the experiments and results for "Ideas for a dream holiday". Second, I will present the more advertising-related task of "Slogan for Lotto."

Selected Words	User's Ideas	Selected sentences
exact is See get same specific Determine match given hard Make provide quote tailored quoted used shown displayed read recorded selected	Introducing an amazing new concept in power bills: You pay for exactly what you use. No guesswork. Pay for what you use. You use the power, then you pay for it. Genius. We match usage to price. Genius! No estimates, you just pay for what you use. mercury energy: the price is right You use the power. You pay for the power. Simple. The power is in your hands.	it's not an estimate, it's just the price of that specific service Exact Detail In some cases we are unable to get an exact meter reading at your house In those circumstances you will be given an estimated bill Exact Synergy The Price is Right We will tell you the exact charges for your desired item(s) before you actually place an order To know the exact price before you buy, simply add items to your order and check out through our Canadian Check Out

Figure 5.37: Selected words, sentences and generated ideas for experiment: Mercury Energy. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

The participants were given 20 minutes to complete the task, an estimate of how long the process of completion with Creative Pad would take. The subjects were given a short demonstration of how Creative Pad works. They were not told what the input sentence nor the seed input into the Creative Pad were so that their thinking would not be misdirected. These experiments are now described in detail.

5.2.1 Task D: Ideas for a dream holiday

The experiment was to create ideas for a dream holiday using Creative Pad: "Come up with some ideas that describe your dream holiday." The keywords used as search criteria in Creative Pad were *dream+holiday.*

Experiment: Come up with some ideas that describe your dream holiday.

- Task (20 minutes):

Figure 5.38: Sketch of a billboard for Mercury Energy.

Result	D1	D2	D3	D4	D5	D6	Average
Adjectives displayed	907	957	177	179	889	165	546
Verbs displayed	209	196	45	45	190	42	121
Random words displayed	10	20	20	30	20	10	18
Selected words	118	21	34	11	28	56	45
Selected sentences	8	17	14	8	10	10	11
Users ideas	20	7	22	16	10	30	18

Table 5.4: Data for task: a dream holiday.

– Use Creative Pad to come up with ideas for a dream holiday. You
will be given a demo of how the program works.

5.2.2   Results and discussion

Every participant was able to generate ideas using Creative Pad. On average,
45 words and 11 sentences were selected and 18 ideas were generated by the
participants. A detailed table of the results is in table 5.4. In all of the results
except D3 the ideas appear to be triggered by both words and sentences (see
figures 5.39, 5.40, 5.42, and 5.43).

Figures 5.39, 5.40, 5.41, 5.42, 5.43 and 5.44 present the results of the
participants and the possible relationships between the selected words and

Selected Words	User's Ideas	Selected Sentences
sleeps private Reserved Digital Personal Stay original Buy offers Romantic ideal Enjoy spend swimming meet relax fresh beautiful Clothing sunny wonderful yummy HAPPY royal Camping Environmental dining Fishing	reserved island Enjoy fresh air buy clothing enjoy yummy food happy swimming swimming and fishing Fresh Royal Fishing relax stay relaxing, camping, swimming and enjoying the yummy food be purely yourself and forget the rest of the world for the timebeing	Digital Cameras Clothing and Accessories Clothing, Luggage, Lingerie, Shoes Health and Beauty Cosmetics, Fragrances, Personal Care Stay Organized Fine wines, elegant dining & other facilities Dining & Entertainment Fishing like on a sunny day when the sea is quiet and looks like blue glass Be purely yourself and forget about the rest of the world for the time that you stay with us I'll spend all day at the beach

Figure 5.39: Result D1. Selected words, sentences, and generated ideas for task: a dream holiday. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

sentences, and generated ideas. From these figures one can draw some interesting conclusions:

1. The generation of ideas was influenced by the triggering words; thus, Creative Pad is successful in helping to create ideas.

2. Most of the ideas were generated from words instead of sentences.

3. Two different styles of using the Creative Pad could be observed:

   (a) The user selects only a small number of words, and generates a small number of ideas (see figures 5.39 and 5.41).

   (b) The user chooses a large number of words and accordingly generates

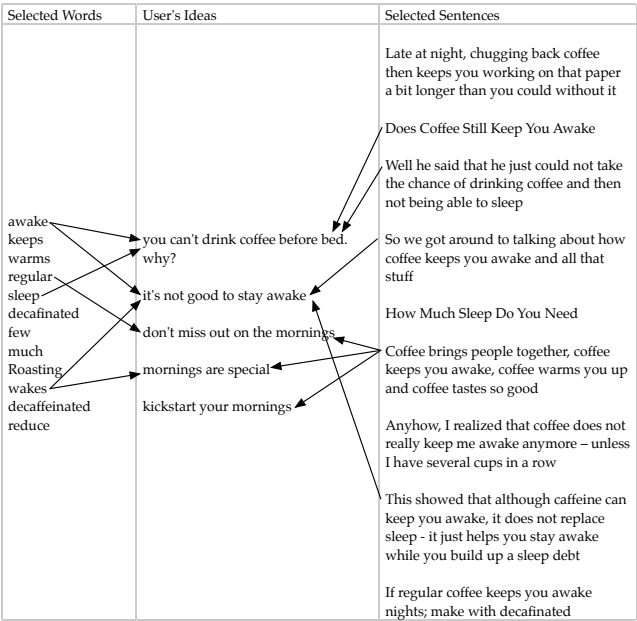| Selected Words	User's Ideas	Selected Sentences
Asian Original beautiful ideal enjoy Catering enter true wonderful relaxing FREE Simple direct shared Parenting special comfortable French add Irish choose complete describe dynamic left Landing connected kissing calm assist picturesque classic meet Combine	family enjoy international choice clarity creative love at ease nature new friends yummy, healthy food enjoyment and freedom spontaneous adventure joy of children rich tasting pumkin pie for thanksgiving seat of your pants adventure surprise around every turn irish humor I love! let freedom reign visualize world peace exotic connections	If you were asked to describe the ideal holiday season what would you say It's your holiday wish come true How did holly come to be connected with the holiday, and why is mistletoe supposedly good for kissing And thats where we have our wonderful calm and relaxing Dream Holiday retreat 1 Quart Soy Dream Classic Original or Vanilla 3/4 cup Soy Dream Classic Original Slowly pour Soy Dream Classic Original mixture into pumpkin puree, stirring constantly Top with Soy Dream French Vanilla Frozen Dessert Find a Self Catering Holiday Home in Ireland What's your ideal holiday and why This Dream Speech is Beautiful and So Historical I Learned alot From it help the dream come true advantage of last minute airfares, you may still enjoy a fabulous holiday at highly competitive prices

Figure 5.40: Result D2. Selected words, sentences, and generated ideas for task: a dream holiday. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

a large number of ideas (see figures 5.42 and 5.44).

5.2.3 Task E: Slogan for lotto

In this experiment, the task was to come up with ideas for a slogan for Lotto. The keywords used as search criteria in Creative Pad were *Lotto+great+feel.* A few examples of advertising slogans were given to the participant to introduce the concept of a slogan.

Experiment: Come up with a slogan for Lotto.

- Examples of a slogan:

Selected Words	User's Ideas	Selected Sentences
	family holiday	
	historical	New Dream Gift Memberships - get 3 at a special rate for friends and family
	private holiday	
Asian	relaxing holiday	What's your vision of a perfect holiday
perfect	sceneric places	Are You Dreaming of the Perfect Holiday
private	beatiful places	And thats where we have our wonderful calm and relaxing Dream Holiday retreat
beautiful	comfortable	
enjoy	enjoyable private, relaxing, exclusive family holiday	But nothing really compares to staying in a comfortable, relaxing Holiday house which you don't have to share with anyone
relaxing	beach views	
exclusive	exotic foods	Bali Dream Holiday is a marketing and management company for exclusive private villas in Bali
special	spa treatments	
comfortable	historical and cultural values	It is our goal to assist you in selecting the right villa for a truly relaxing and unforgettable holiday in Bali
picturesque	relaxing and calming	
extravagant	interesting tourist spots	From picturesque rice field views to classic beach front sunsets, we have a Balinese villa to meet your idea of a dream holiday in Bali
	snow	
	family tour	

Figure 5.41: Result D3. Selected words, sentences, and generated ideas for task: a dream holiday. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

- Volvo. For life.

- Apple. Think Different.

- Del Monte. The man from Del Monte says yes.

- DHL. We keep your promises.

- Esso. Put a tiger in your tank.

- Guinness. Guinness is good for you.

- Nokia. Connecting people.

• Task (20 minutes):

- Come up with a slogan for Lotto using the Creative Pad.

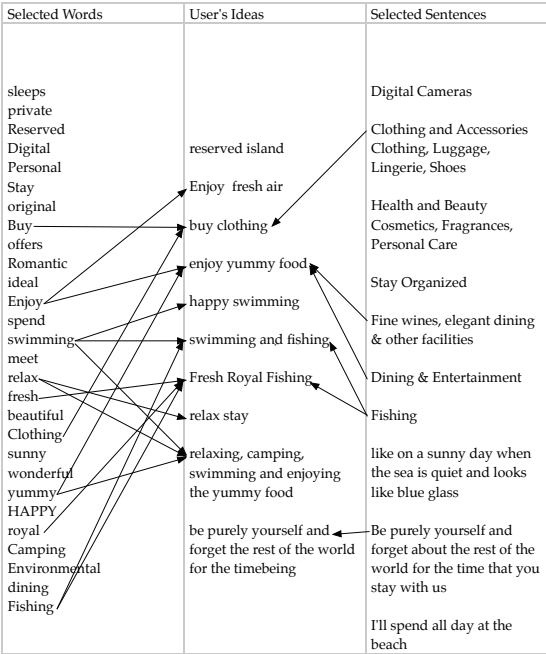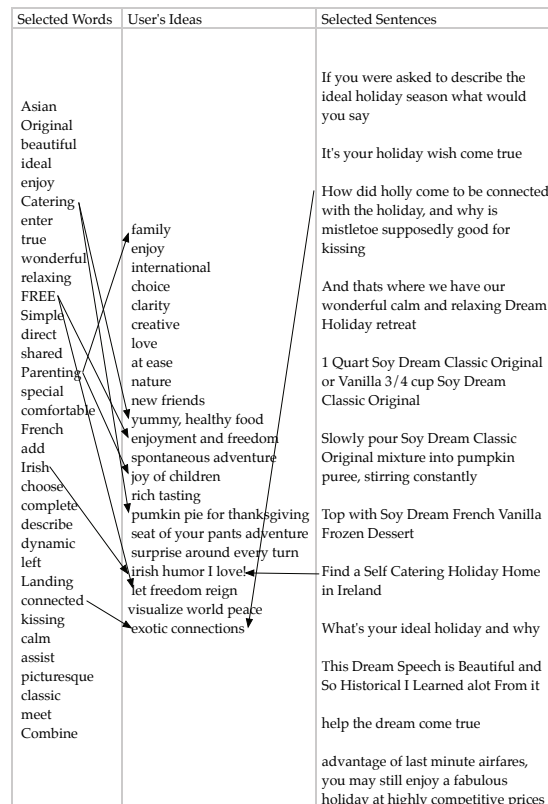| Selected Words	User's Ideas	Selected Sentences
Original private staying enjoy beautiful Catering simple test-drive relaxing exclusive Pick Call FREE on-site win direct Parenting special wonderful comfortable add Set Irish choose rental left Landing connected kissing calm picturesque meet Top cheap absolute full self-catering Offers largest exciting facing holding organize mobile sounds cool extravagant setting swimming Diving Inexpensive Shopping feeling surveyed Dreaming individual	- stay with friends - barbeque by the beach at night - sun set - play games - relaxing by the bautiful beach - kissing under the moonlight - cheap souvenirs - take pictures - enjoy chatting and connecting with the locals - make freinds with other tourists - wonderful feeling - enjoy wave sounds - swimming and playing in the ocean - meet other people from other places - pick fruits from local market - diving and splashing water to others - jumping high and landing on soft sand - race others to top of hills - buy cheap things - eat in private and exclusive restaurants - pamper self with cool spa - spending time swimming in the blue ocean is the perfect activity for me - have bon-fire and barbeque with family and friends at night by the beach - i want to feel connected to everybody during the holiday - set the mood by choosing great tasting food - take picture of myself during the sun set - get cheap and even nicer- free gifts to bring home - beautiful villas - win free holiday is great - diving is a new skill to learn	- Inexpensive, Creative and Eco-friendly Gift Ideas from New Dream staff - New Dream Gift Memberships - get 3 at a special rate for friends and family - Get more gift ideas in our Conscious Consumer Holiday Shopping Guide - Over three quarters surveyed in our 2002 holiday poll expressed a desire for a more simplified holiday - Are You Dreaming of the Perfect Holiday - Win Your Dream Holiday Landing - WIN THE DREAM HOLIDAY HOME - And thats where we have our wonderful calm and relaxing Dream Holiday retreat - But nothing really compares to staying in a comfortable, relaxing Holiday house which you don't have to share with anyone - From picturesque rice field views to classic beach front sunsets, we have a Balinese villa to meet your idea of a dream holiday in Bali

Figure 5.42: Result D4. Selected words, sentences, and generated ideas for task: a dream holiday. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

5.2.4 Results and discussion

Each participant was successful in producing ideas with the Creative Pad. On average, 27 words and five sentences were selected and 13 ideas were generated. As observed from the data:

1. The users selected more words than sentences.

2. The number of words chosen hints at the amount of ideas generated, suggesting that there are different styles of using Creative Pad, one where the user chooses few words and generates few ideas and another where a larger number of words is chosen, and a greater number of ideas

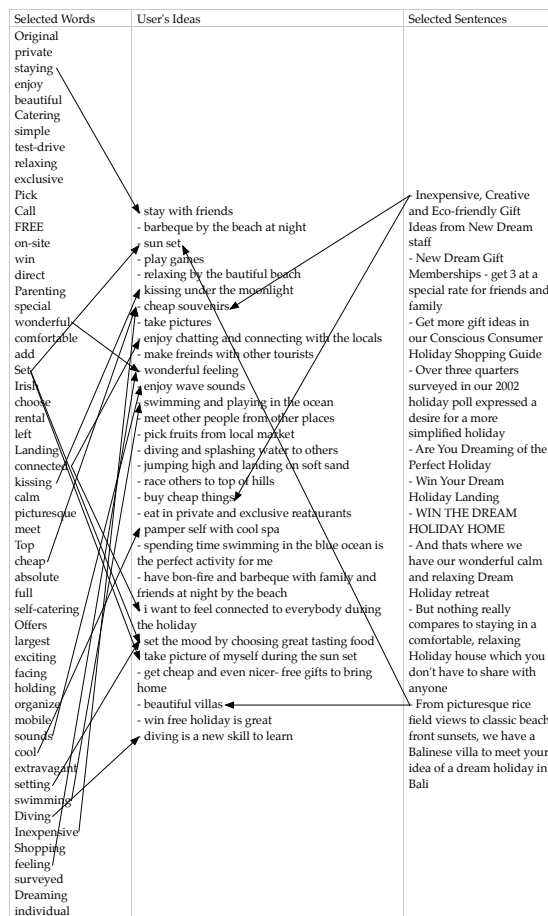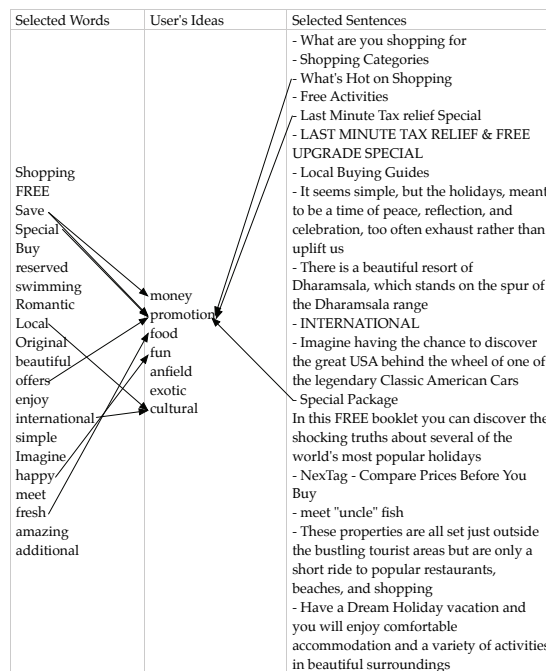| Selected Words	User's Ideas	Selected Sentences
Shopping FREE Save Special Buy reserved swimming Romantic Local Original beautiful offers enjoy international simple Imagine happy meet fresh amazing additional	money promotion food fun anfield exotic cultural	- What are you shopping for - Shopping Categories - What's Hot on Shopping - Free Activities - Last Minute Tax relief Special - LAST MINUTE TAX RELIEF & FREE UPGRADE SPECIAL - Local Buying Guides - It seems simple, but the holidays, meant to be a time of peace, reflection, and celebration, too often exhaust rather than uplift us - There is a beautiful resort of Dharamsala, which stands on the spur of the Dharamsala range - INTERNATIONAL - Imagine having the chance to discover the great USA behind the wheel of one of the legendary Classic American Cars - Special Package In this FREE booklet you can discover the shocking truths about several of the world's most popular holidays - NexTag - Compare Prices Before You Buy - meet "uncle" fish - These properties are all set just outside the bustling tourist areas but are only a short ride to popular restaurants, beaches, and shopping - Have a Dream Holiday vacation and you will enjoy comfortable accommodation and a variety of activities in beautiful surroundings

Figure 5.43: Result D5. Selected words, sentences, and generated ideas for task: a dream holiday. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

Result	E1	E2	E3	E4	E5	E6	Average
Adjectives displayed	1042	214	902	900	801	872	789
Verbs displayed	225	52	194	198	169	186	171
Random words displayed	10	20	20	30	20	30	22
Selected words	59	23	37	8	29	8	27
Selected sentences	1	14	9	1	5	2	5
Users ideas	19	5	29	8	10	7	13

Table 5.5: Data for task: a slogan for Lotto.

generated.

A detailed table of the results is in table 5.5. It appears that although sentences expand the framework around a given word, words lead to more ideas being directly created.

Selected Words	Selected Words	User's Ideas	Selected Sentences
Search save has please Compare Best Take great Posts know Reserved enter Own Try Few large need Turn Come located Rental Buy Personal offers cool learn complete Stay Print ideal swimming Simplify Local Getting Sold set Parenting spend full enjoy beautiful meet amazing everything national latest living close fresh booking Asian live shared Clothing International Imagine Sponsored Celebrate yummy	Shopping free GO Good Midtown Want meaning remaining simmer sunny viewed break nice hands-on Virtuoso green Bed Individual Check feel create King Surprising red discover given natural staying Limited hot HAPPY exclusive valuable royal ultimate left decorating popular Italian British wet build Arrival panoramic Tropical Camping Sustainable fair Japanese Environmental Official true fantastic learning known kissing waiting Redefining highest	try great shopping learn about local lifes imagine amazing scenery see sunny green landscapes stay in exclusive midtown go swimming under the sun go for sustainable tourism try fresh local food climb the highest tops and go camping spend less while shopping more discover amazing views at one of the last remaining tropical rainforests get hands-on experience check out the latest exclusive offers everything is fresh and hot compare prices of holiday offers and stay organised during your preparations live life to the fullest enjoy planning your holidays without spending a fortune discover beautiful destinations from amazing luxury to hands-on camping celebrate life	- com - Find, Compare and Buy Online Shopping - Personal Care - Clothing and Accessories Clothing, Luggage, Lingerie, Shoes - Compare Prices - Everything - Stay Organized - Individual Sports, Outdoors - Compare Hotel Rates

Figure 5.44: Result D6. Selected words, sentences, and generated ideas for task: a dream holiday. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

5.2.5 Conclusions

The students were able to use Creative Pad successfully in both an advertising-related experiment and a general brainstorming exercise. If we use the number of words and sentences chosen and number of ideas generated as criteria, it seems that the advertising-related task "Slogan for Lotto" was more constrained as the average number of selected words and sentences and generated idea was lower than in the general brainstorming task. This supports the notion that the task of producing creative ideas in advertising is "creativity-
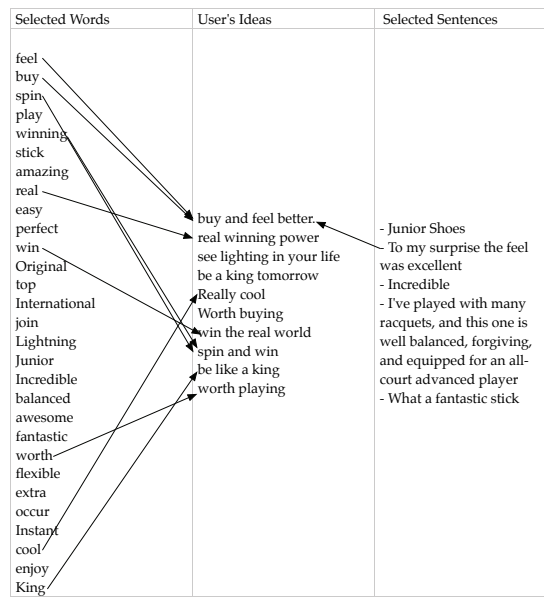
Figure 5.45: Result E1. Selected words, sentences, and generated ideas for task: design a slogan for Lotto. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

on-demand" and creativity with a deadline. Specific constraints about the outcome constrain the process as well as the creative product (in the latter task the outcome of the process was constrained to a slogan). Simply analysing the selected data reveals little insight into how the participants perceived the experience of using Creative Pad as a tool for triggering new ideas. This issue is discussed in the next section.

5.3 Questionnaire results

An online questionnaire was conducted among the participants of the experiments. The goal was not only to gain a better understanding of how they would evaluate Creative Pad as an idea generation tool, but also to gain a deeper understanding of their experience using Creative Pad and to understand the participants' thinking surrounding creativity and Creativity Support Tools in general. Subsection 5.3.1 presents results from the questionnaire related

Figure 5.46: Result E2. Selected words, sentences, and generated ideas for task: design a slogan for Lotto. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.
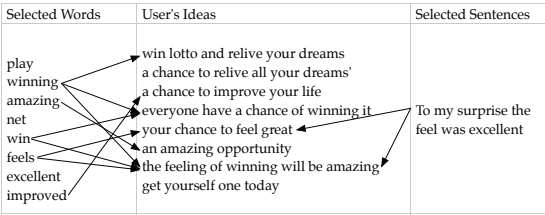
Figure 5.47: Result E3. Selected words, sentences, and generated ideas for task: design a slogan for Lotto. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

directly to Creative Pad. Subsection 5.3.2 describes the participants' thinking around creativity.

5.3.1 Questions about Creative Pad

Most useful phase of creative process for using the Creative Pad

The creative process can be divided into three phases:

1. Beginning, which is normally the divergent phase where the goal is to produce many ideas.

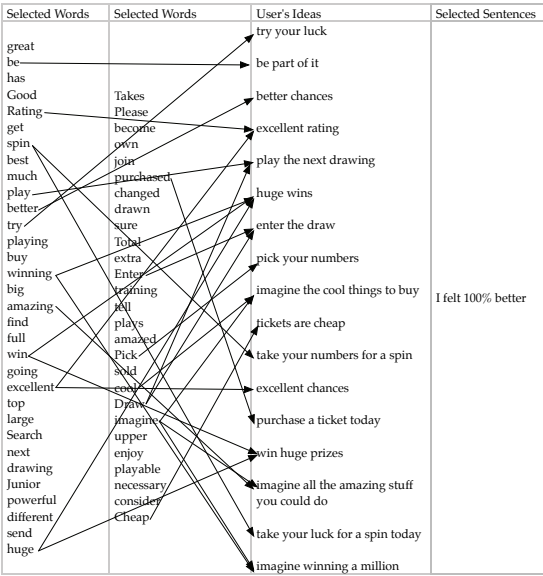| Selected Words	User's Ideas	Selected Sentences
feel		
play		
spin		
playing	happy	
nice	thoughtful	
recommend	alive	
amazing	lasting	
Radical	fun	
perfect	emotion	
swing	flavored	- International
real	on-course	- Solid from the baseline,
Solid	inclusive	accurate and powerful
easy	out and about	serves and easy to
comfortable	connected	volley with
Indoor	ocean	- To my surprise the feel
soft	dialogue	was excellent
Search	out there, man!	- I can believe the
feels	intense visual imagery	control and spin I got
excellent	all-around winner	with this racquet
full	why not?!	- Incredible
improved	its all there, baby!	- I've played with many
Draw	keep it coming--rage it!	racquets, and this one is
stable	i am feeling the sweet music	well balanced, forgiving,
Original	incredible ability	and equipped for an all-
International	never before in the history of human	court advanced player
Incredible	kind have we seen a creature of such	- Radical, i
join	prowess	- Awesome racquet
Lead	moving with the shakers	- The volleys are perfect
left	oh yeah, this is good shit, man!	
send	rock and roll	
Lightning	on the edge	
drawing	this game is yours--victory!	
awesome	comes highly recommended as the	
balanced	ultimate swing	
Related	perfection, here and now!	
extra		
sweet		

Figure 5.48: Result E4. Selected words, sentences, and generated ideas for task: design a slogan for Lotto. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

2. Middle, where the ideas are being processed and selected.

3. End, where the ideas are processed in a convergent manner in order to narrow down the ideas to a final few or one that will then be produced into a creative product.

The participants were asked to identify in which part of the creative process Creative Pad would be most useful (see figure 5.51).

Most of the participants considered the beginning of a creative process to be the most suitable for using Creative Pad, associating it with kick-starting the creative process: "When the designers have an empty wall in front of them, they will need help. This will save time and money;""To get your thoughts to fly, to mobilise your creativity, to kick off the imaginative process"; "It works like a brainstorming for me, which I usually employ at the beginning;""In the

Selected Words	User's Ideas	Selected Sentences
feel win Draw Nice buy easy comfortable amazing Direct playable Winning Pick top sweet fantastic simple Instant free Radical Feels Straightforward BETTING lucky	retire fun exciting excitement dream	- To my surprise the feel was excellent - Who will win that great Mustang GT - How does the winner feel - A lotto win would be life-changing - A jackpot win with Oz 7 Lotto could change your life forever and fulfill all of your wildest fantasies - Feel safe when buying online - Queenslander's who want to step up and get involved with the fun can now register with Golden Casket's Lotto Direct online - The process is simple and our seven methods of ensuring online safety make it the easy lotto purchase option - Sat Gold Lotto Draw: 2799 - Wed Gold Lotto Draw: 2800 - Lotto Draw Statistics - See everything in Queensland with a lotto win - With a Powerball jackpot win, you could see all the attractions, meet all kinds of interesting people, and feel all the comforts of a life of luxury - Feel the excitement of a chance at a first division prize with Powerball

Figure 5.49: Result E5. Selected words, sentences, and generated ideas for task: design a slogan for Lotto.

first phase of brainstorming, the main thing is to generate as many ideas as you can;""The early stage requires the user to form and generate ideas about topic, at which the mind is 'working out' and 'grasping' for inputs - this task is simplified by the randomly appearing words from Creative Pad."

Would you use the Creative Pad as a tool for triggering new ideas?

All of the fourteen participants said they would use the Creative Pad for triggering new ideas.

Most responses were related to using the Creative Pad as an associative tool: "use the Pad as a word association tool" and "finding more associations than your own mind could create". Also, the usefulness of the tool in starting the creative process was mentioned: "makes it easier to jump out of the box"; "could be used as an idea pool during workshops"; "to help kick-start the creative process."

Figure 5.50: Result E6. Selected words, sentences, and generated ideas for task: design a slogan for Lotto. Arrows depict a possible relationship between the selected word or sentence, and the generated idea.

How well does Creative Pad work for triggering new ideas?

When asked how well Creative Pad performs in triggering new ideas most answers were divided between well and very well (see figure 5.52). Participants attributed Creative Pad's ability to trigger new ideas well/very well to its ability to generate topics outside of normal thinking. Also, the Creative Pad forces the user to focus on the task during a limited time. "I was presented with topics that were not familiar and been given quite limited time - I don't think I could have generated many interesting ideas on my own;""It makes you concentrate and focus your attention to the acute issue but gives a universe of opportunities that you may not be able to shape in your mind alone."

Usefulness of Creative Pad in the creative process

All the participants except one found Creative Pad to be useful in the creative process (see figure 5.53). The one reason for not finding it to be useful was that
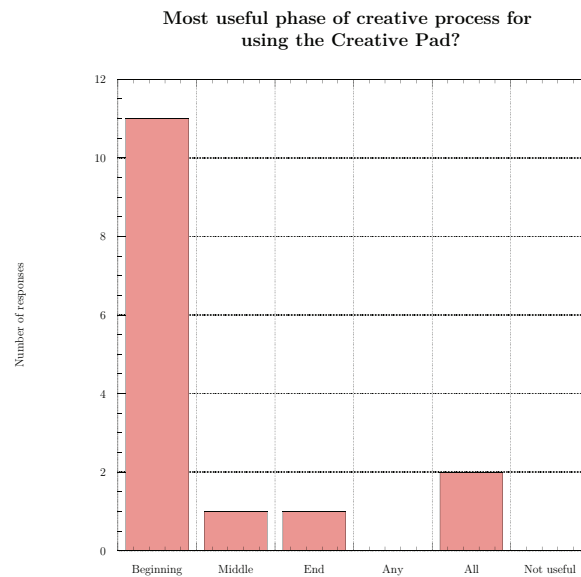
Figure 5.51: Most useful phase of creative process for using the Creative Pad.

it could be used only as a replacement for human brainstorming - for which it is designed. Reasons for finding Creative Pad useful were that it works as a catalyst and that there are not many tools available for this specific purpose. "It may be a helpful tool, even a catalyst. Anyway it will brush your mind up when you are stuck with your limited imagination's capacity in your tiny head."

Most interesting phase of Creative Pad

The participants were given three options to choose as the most interesting phase of the creative pad:

1. Displaying words.

2. Displaying sentences.

3. Mixing words.

Here the results were mixed between all three (see figure 5.54). Those that chose displaying words as the most interesting phase commented: "Because
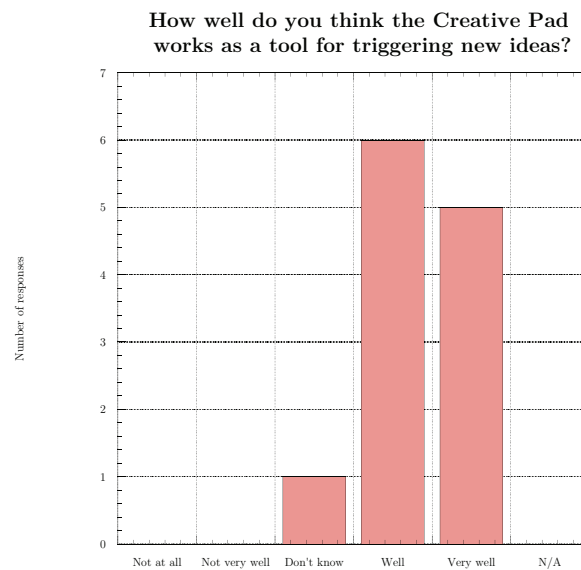
Figure 5.52: How well does Creative Pad work for triggering new ideas?

the words came out one at a time and they were clear and related"; "Words are interesting;""The variety of word meanings is an eldorado." Support for sentences was described: "The sentences triggered a better response from me. Words are just words. I think when they are in the context of other words (sentences) it helped me better;" and "Whole sentences are understood faster than random words with no interconnection." Reasons for choosing mixing words were "The phase where words are mixed is great in inspiring ideas and connections between seemingly unrelated things;""The surprising connections are great."

Most difficult part in a creative process

The participants were asked to identify the most difficult part in a creative process (see figure 5.55). According to the results, the beginning part was identified as the most difficult, middle second and end the least difficult. This result is noteworthy since it is evidence that the Creative Pad supports the most difficult part of the creative process well.
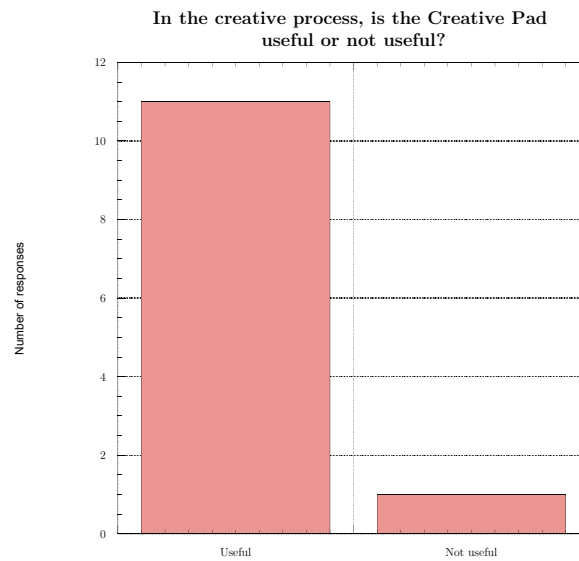
Figure 5.53: Usefulness of Creative Pad in the creative process.

5.3.2 Questions about creativity

Participants were then asked general questions about creativity.

What is creativity?

When the participants were asked to define what creativity is, the responses followed the general understanding of how creativity is often defined (described in chapter two) quite well. Creativity was described as "Coming up with insights to a problem that are unique, correct and engage with people", "Shedding new light on particular insight", "Problem-solving" and "Simplifying complicated things". One participant focused on the importance of visualising symbols in an interesting way:

> The words, the tones, the numbers, the figures, different kind of symbols, any kind of linguistic and visual systems comprise a universe of potential combinations. The decisive skill is to be able to find those and use them effectively for your creative works.

What was the most interesting phase of the Creative Pad?
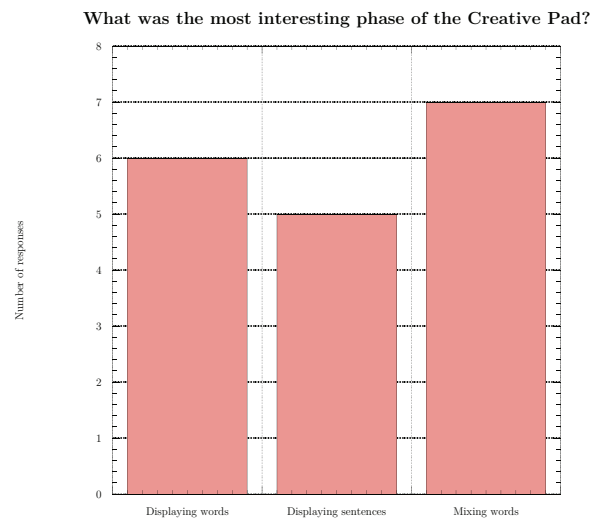
Figure 5.54: The most interesting phase of Creative Pad.

What is the most difficult part in a creative process?
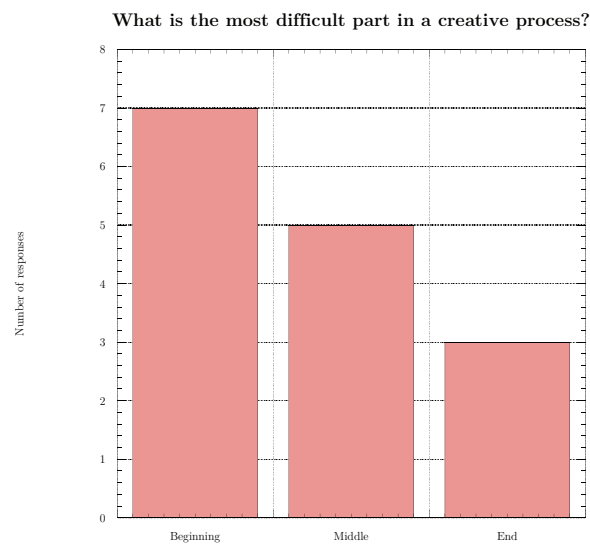
Figure 5.55: The most difficult part in a creative process.

What makes an advertisement or communication creative?

Uniqueness, originality, being different and insightful were some of the attributes the participants used to describe a creative advertisement. Some focused on the creative product being more than the sum of its parts: "A masterpiece of creation is a work where the audiences can find more meanings than the creator herself;" and "When the words and pictures talk together in a way that is witty and new".
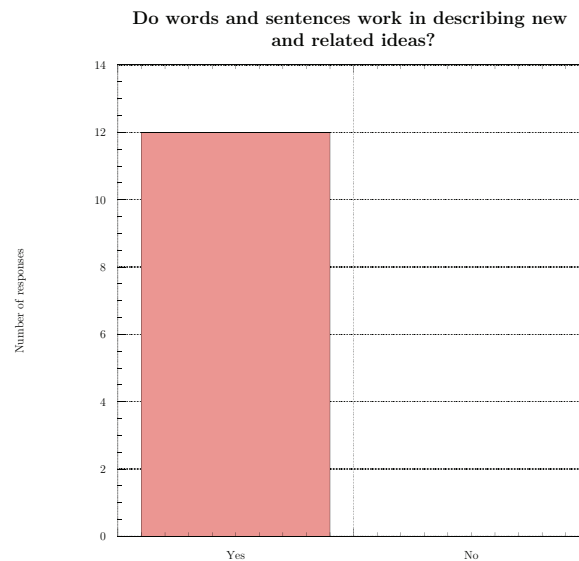
Figure 5.56: Words and sentences in describing new and related ideas.

Words and sentences in describing new and related ideas

All of the participants thought that words and sentences work in describing new and related ideas (see figure 5.56), confirming one of the fundamental ideas behind the Creative Pad that:

1. Every idea can be described as a sentence.

2. Words can trigger ideas and sentences extend that framework.

Can a software create seeds of ideas on its own?

All the participants considered that a software (not referring to Creative Pad specifically) can assist in the creative process. But results of whether a software can create seeds of ideas on its own were mixed (see figures 5.57 and 5.58). This question is perhaps slightly outside the scope of this research, but the answers from those participants who thought a software cannot produce seeds of ideas on its own emphasised the importance of the human factor in the creative process. Perhaps the participants did not understand the distinction

Do you believe a software can assist in the creative process?
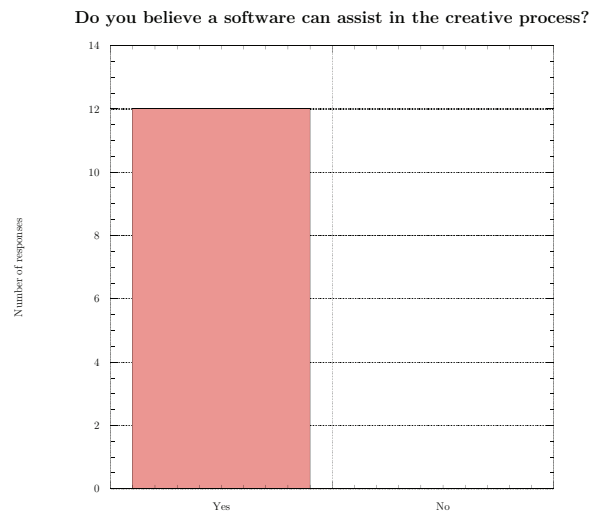
Figure 5.57: Can a software assist in the creative process?

Do you believe a software can create seeds of ideas on its own?
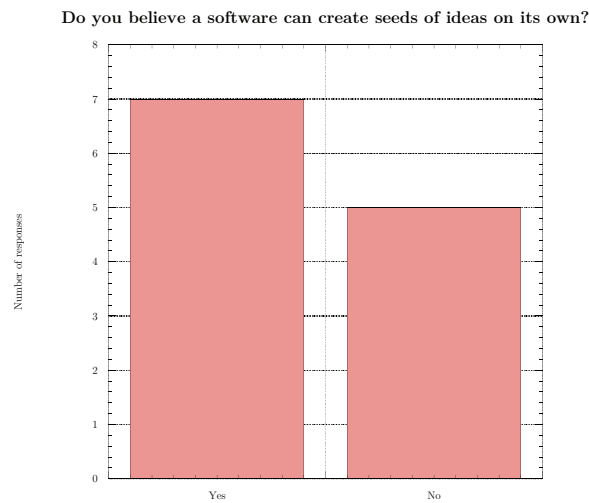
Figure 5.58: Can a software create seeds of ideas on its own?

between an "idea" and a "seed of an idea". One of the responses manages
to describe this difference well: "Depends on how you define that. Random
things could be seeds of ideas, too, because they could trigger something in
the user. Or presenting known information about a topic, because the user
could not have thought about something".

5.4   Conclusions

The Creative Pad does successfully support the generation of new ideas
both in advertising related experiments by professional creatives and general
experiments conducted by students. This claim is upheld by evidence that
shows a possible link between the words and sentences selected and the ideas
generated. The reason for claiming only a possible relationship is that although
even the same word would appear in the selected words and generated ideas,
there is no way to be absolutely certain that the idea was generated from
selecting the word except by asking the participant. In this study, however,
the focus was on analysing the selected data rather than the participants'
subjective thinking. Furthermore, other selected words that might bear a
semantic relationship with the generated ideas could be as important as those
that are obvious, but again this semantic relationship is difficult to identify.

Data from the experiments show that on average students selected more
ideas than creatives (see figure 5.59). The students also produced more ideas
on average than the professional creatives. It seems, however, that professional
creatives are better at conceptualising ideas on an abstract level, needing fewer
carefully selected words to trigger ideas than did students.

From analysing the data from the experiments conducted by the creatives
the following observations were made, two styles of generating ideas being
identified:

1. A conceptual style, where the creative describes the idea almost as a
   movie scene or a short story where a particular event takes place that
   describes the main concept. The concept is not necessarily the idea,
   which can then again be something completely different (see figure 5.1).

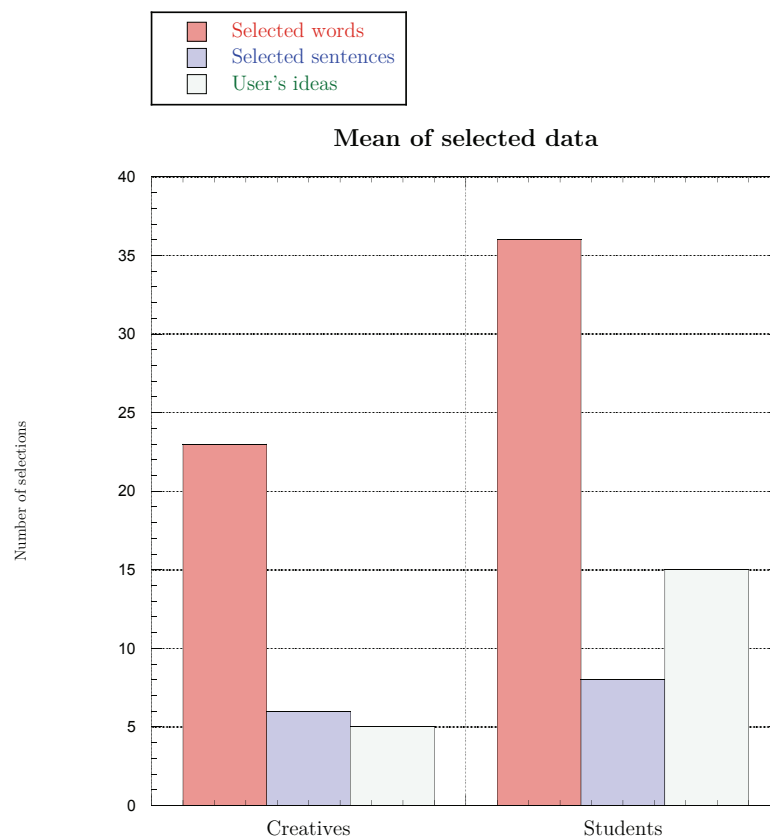2. A sequential style where the creative starts typing ideas and the idea

Figure 5.59: Students selected more data on average than advertising professionals

develops into a final representation of an almost evolutionary process of generating ideas (see figure 5.27).

The creatives also seemed to be able to generate a vision of the idea, during the process, which rarely changed, signifying that once a basic idea was generated other ideas were built around it instead of generating a multiplicity of different ideas from different view points.

The students' approach was more straightforward. One can observe a connection in most if not all of their selected words, sentences and ideas. This suggests that they were indeed able to use Creative Pad as a support tool for generating ideas. The students seemed to lack the ability to think conceptually or see the "big picture", implying that ideas were often generated directly from the selected words and sentences.

I further conclude that a connection appears to exist between:

1. The words and generated ideas.

2. The sentences and generated ideas.

Thus words and sentences can act as a trigger for new ideas. More words were selected than sentences suggesting that words may have more relevance in generating ideas than do sentences. The challenge in analysing data in the manner described is that no value is placed on the ability of a single word to prompt ideas. Some words might turn out to be more relevant or powerful in suggesting new ideas than others. This indicates a need for further study.

In conclusion, the Creative Pad successfully supported the generation of new ideas for both professional advertising creatives and students with no background in creating ideas for advertising. This suggests that the Creative Pad appears to work as a tool also for purposes other than advertising and that although advertising creativity is creativity with particular constraints it can be supported by a relatively simple approach. This approach takes advantage of the Internet as a source of dynamic data and focuses on finding data relevant to the original task, which is to transform the communicational objective of the task into a creative idea.

Chapter 6

Conclusions

This thesis has investigated how a tool for supporting the generation of new ideas in advertising might be developed (as discussed in chapters 2 and 3). The essential question first addressed was: What is advertising creativity? The second was: Which aspects of the creative process could be supported by a tool?

After researching the field of Creativity Support Tools, a lack of a creativity support tool for advertising was identified. Thus, the major part of work conducted in this thesis was aimed towards an investigation and development of a blueprint and concept behind a tool that could assist in triggering new creative ideas. As a result, the goal of testing in the form of experiments and a questionnaire about the Creative Pad with creatives and non-creatives was to provide initial feedback and evaluate whether Creative Pad was being developed in the right direction rather than compare it against other creativity support tools or to confirm a specific hypothesis about the Creative Pad except that it could perform as a tool for supporting the development of creative ideas. Also, the results of the questionnaire presented in this thesis provided a possibility for open comments toward Creative Pad that proved useful in expanding the conceptual framework round the tool. These results however,

do not confirm a specific hypothesis about the tool.

Although the research showed that Creative Pad could act as a tool for triggering and developing new ideas in advertising and in general brainstorming, a full evaluation of how Creative Pad could perform as a tool compared to other similar tools was outside the scope of this project and could be an interesting topic for further research.

An inquiry into advertising creativity showed that the process of creating ideas in advertising is complex and rarely studied and that the task of developing ideas in advertising is not a straightforward one. The beginning of a creative process is often difficult. While tackling the problem of developing a creative idea the creatives often experience a "fear of the blank page". Thus, a central element can be helpful in kick-starting the creative process and focusing on the problem at hand. Other triggers will support the state of flow and ensure that the process keeps moving. I argue that this central element can be the communicational objective of the client stated succinctly as a sentence, acting as the starting point for finding more relevant triggers. I also propose that the focus should be on the information input into the creative process; this focus will help to provide the relevant triggers for developing ideas as an "understanding, insight, or some primitive forms of solution to a problem" (Sugiyama et al., 1996) before the creative product is produced. Furthermore, it is proposed here that the search for these unrelated items is tied to the original communicational objective to ensure that a link between the generated idea and the message exists.

Keeping in mind the mysterious nature of creativity as described earlier, developing tools for supporting a process that is not well understood is challenging. There are several aspects that need to be considered. For example: the user's mind must be able to wander around the problem freely. Also, a central element is needed to start the creative process, one that can assist

in avoiding the fear of a blank page that often stalls it at the outset. This central element can then trigger the associative thinking considered central to advertising creativity and which, according to research, is a skill possessed by successful advertising professionals.

I conclude that in order to develop a successful tool for supporting creativity, the tool should:

1. Allow the user to extend the semantic framework around the problem and possibly allow exploration and transformation of conceptual spaces.

2. Support the state of flow.

In designing a Creativity Support Tool one should also take advantage of a dynamic database for the raw material. Two observations were made:

1. A static database can lead to static domain knowledge and thus to less creative results.

2. Search is an integral part of a creative process but is currently treated as a separate tool for creativity support.

Based on the conclusions presented above, I created a framework for such a tool (see chapter 4). In addition to the conclusions already mentioned, a key to developing the framework was an insight gained from analysing advertisements and understanding the implicit and explicit levels of communication involved. This insight was that an idea exists somewhere between the original task or problem to be solved and the creative product. This notion had significant implications for the development of the framework, namely that the framework could be constructed from three parts:

1. Message.

2. Idea.

3. Execution.

This approach was different to those existing in that it focused on developing a framework based on the notion that a tool for creating new ideas should provide the necessary freedom in the beginning of the creative process, where the human mind is allowed to participate in the necessary associative tasks involved. It also recognised the need to produce relevant triggers for the task at hand by acknowledging the importance of the message as the source for finding the relevant prompts. Furthermore, such a view highlights two important ideas:

1. Goal-related ideation. The framework is created to support ideation that begins from the communicational objective and should produce ideas related to the original task. Ideas emerge from the message.

2. Ideas exist as a separate entity, independent from the execution.

Existing models focus on developing a framework by using the creative product to guide creative thinking. The danger in this approach is that it can lead to formulaic thinking where new ideas are based only on thinking that has proven to be successful in the past.

As a result of developing the framework a tool based on it was implemented. This implementation proved that the framework can be transformed into a computational model where a straightforward algorithm is used to generate ideas for advertising creatives and an interface is created whereby they have less to actually do or perform: their thought will thus be least interrupted.

The experiments conducted with the Creative Pad show that the tool supports the generation of new ideas and that a connection appears to exist between:

1. The words and generated ideas.

2. The sentences and generated ideas.

These findings suggest that the Creative Pad can trigger the creative human mind and support the creative process in advertising in a manner that is relevant to the original task, which is to transform a communicational objective into a creative idea.

In conclusion, the Creative Pad successfully supported the generation of new ideas for both professional advertising creatives and students with no background in creating ideas for advertising. This suggests that the Creative Pad appears to work as a tool also for purposes other than advertising and that although advertising creativity is creativity with particular constraints it can be supported by a relatively simple approach. This approach takes advantage of the Internet as a source of dynamic data and focuses on finding data that are relevant to the original task.

For future work, Creative Pad now provides a platform for further investigation into Creativity Support Tools for advertising in particular and for other areas in general. More carefully controlled experiments would be needed to evaluate the usefulness and power of Creative Pad. More powerful algorithms, both for searching and presenting of ideas, could now be developed for and tested with Creative Pad.

Appendix A

News article

Car enthusiasts turning to condos to store their treasures - Boston Globe - 24 minutes ago By Dee-Ann Durbin, AP Auto Writer, May 21, 2006

David deMartino just bought a 760-square-foot, one-bathroom condo for $212,900 in the booming market of Fort Lauderdale, Fla. He's already ordered custom flooring and cabinets and a flat-screen TV, but he has no plans to move there. That's because the condo is for his collection of cars and motorcycles. The idea of buying a parking space is nothing new in crowded urban areas. A 180-square-foot space at the Brimmer Street Garage in Boston's exclusive Beacon Hill neighborhood just sold for $200,000, according to a garage manager. But a parking space may be exposed to the elements, or next to a rowdy family's hulking sport utility vehicle. That's why some enthusiasts with money to burn are turning to car condos, where their vehicles will be stored in individual, weatherproof, air-conditioned garages with 24-hour security and concierge services. "It's just peace of mind for my collection," said deMartino, 47, who plans to store a 1930 Ford Model A coupe, a 1961 Corvette convertible, a 1970 Mercedes-Benz 280SL and three special edition motorcycles in his condo. Three car condo developments are scheduled to open in south Florida by the end of 2007, and developers say they've already sold between 20 and 30 percent of the condos available. Park Place Car Condo is opening a 224-garage facility in North Miami and a 179-garage facility in Fort Lauderdale and plans to open locations in New York, Las Vegas, Orlando, Fla., and Scottsdale, Ariz., in the next few years. Developer Kevin Buckley said Park Place condos start at $150,000 for a 620-square-foot condo for three cars and go up to $400,000 for an 1,800-square-foot condo that can house a bus. Buckley said so far, typical buyers have been men in their late 40s to early 60s who have earned enough to buy the muscle cars that enchanted them in

high school. Others plan to use their condos for boats and Jet Skis, he said. "It's part car culture and then a lot of people who are just interested in safe, secure storage," he said. Another car condo development, DreamCar Carriage House, plans to open a 120-car facility in the Fort Lauderdale area next spring and is scouting for more Florida locations in Naples, Miami and Palm Beach, said Dayna Heit, a car collector who is developing the facility along with her husband. Prices range from $59,000 for a 300-square-foot condo to more than $200,000 for a 972-square-foot condo. Heit says an antique Rolls Royce and a 1955 Chevrolet Bel Air are among the future tenants. Buckley and Heit say Florida was a logical place to start their businesses because of the number of nearby high-rise housing developments with ocean views but little storage space. "In most of the new urban high-rises, the average guy has 100 cubic feet in a little cage somewhere," said Buckley, who has previously developed high-end retail complexes. "You've had this massive redevelopment in affluent urban areas in the last five to 10 years, but the storage market really hasn't kept up with that." "It's a piece of real estate as well as a place to put your car," Heit said. "It's very minimal compared to what you're paying for the homes down here." The threat of hurricanes also is a problem for car collectors. Right now, deMartino keeps half his collection in his two-car garage in Boca Raton, Fla., and half in a warehouse, which has been breached by flood waters and damaged by high winds. "It kills me. I can't have it," said deMartino, an entrepreneur and chief executive of Ozonelite Inc., a company that makes air-purifying light bulbs. Both Park Place and the DreamCar Carriage House will offer concierges to take care of details such as picking up and dropping off owners, tuning up the cars before a drive or washing and waxing. The Carriage House will have an onsite photography studio where owners can commission portraits of their cars. Park Place offers infrared cameras that will allow owners to view their cars 24 hours a day, and it will send a message to an owner's cell phone if security is breached. Car collectors don't have to own a condo to get those kinds of services. At the Collectors Car Garage in Bedford Hills, N.Y., members can rent a parking space in a secure, environmentally controlled facility with concierge service for $345 a month. Manager James Machinist says the rental concept seems to work for his customers. His facility, which has been open since January 2005, already is over capacity with 191 cars ranging in price from $5,000 to $1.5 million. "I liken it to a yacht club. Instead of having a slip, you have a car space," he said. But Buckley says he thinks people will prefer owning a condo because they can customize it. Among the options offered to Park Place buyers are custom rubber flooring and hydraulic lifts so they can store more cars. "We felt like people would want to be able to put everything they wanted in there and be able to control the entire thing once they closed the door," Buckley said. "We didn't want to be in the business of running a warehouse full of cars." DeMartino said he's more willing to invest in extras because he'll own the condo. He'd also consider buying a car condo in another city so he can use his cars and motorcycles when he travels. For now, deMartino is just happy that his days of running back and forth between his

hot garage, where he works on his cars, to his air-conditioned home to watch NASCAR races will be coming to an end. "I spend a lot of my time in the garage polishing them," he said. "To me, they're artwork."

Appendix B

Extracted words from the article

Adjectives: Space	Verbs: Space	Nouns: Space	Adjectives : Car
parking (space) urban	buying	idea	weather-proof
parking (space) rowdy	parking	space	air-conditioned
hulking?	hulking	area	24-hour
logical	say	space	620-square-foot
high-rise	start	elements	1800-square-foot
ocean (views)	housing	family's	safe
parking (space)	rent	(sport utility) vehicle	secure
secure	controlled	place	car condo (development)
environmentally-controlled	having	businesses	120-car
	have	number	two-car
		developments	high
		ocean	rubber
		views	hydraulic
		storage	hot
		space	air-conditioned
		collectors	
		car	
		garage	
		members	
		space	
		facility	
		concierge	
		service	
		month	
		yacht	
		club	
		slip	
		car	
		space	

Table B.1: Extracted words 1.

Nouns: Car	Nouns: Car	Nouns: Car	Verbs: Car
car	house	condo	turning
enthusiasts	car	services	store
condos	facility	collectors	is (int 1)
treasures	locations	car	burn
condo	car	garage	turning stored (int 2)
collection	collector	members	scheduled
cars	facility	space	to open
motorcycles (int 1)	husband	facility	say
enthusiasts	piece	concierge	sold
money	estate	service	opening
car	place	month	plans
condos	car (int 3)	manager	to open
vehicles	hurricanes	concept	start
garages	car	customers	go
security	collectors	facility	house
concierge	collection	cars	interested
services (int 2)	car	price	said
car	garage	million	plans
developments	warehouse	yacht	to open
developers	waters	club	scouting
condos	winds	slip	said
car	car	car	developing
condo	house	space	put
garage	concierges owners	park	said (int 3)
facility	cars	place	is
garage	studio	buyers	keeps
facility	portraits	rubber	breached
locations	cars	flooring	damaged
years ?	park	hydraulic	offer
developer	place	lifts	take
condos	cameras	cars	picking
condo	owners	business	dropping
cars	cars	warehouse	
condo	hours	cars	
bus	day	car	
car	message	condo	
culture	ownerscell phone	city	
people	security	cars	
storage	car	motorcycles	
car	collectors	days	
condo		garage cars home races	
development			

Table B.2: Extracted words 2.

Adjectives + car From sentences with space	Adjectives + car From sentences with car	Nouns + car From sentences with space	Nouns + car From sentences with car
parking car	weather-proof car	idea car	car car
urban car	air-conditioned car	space car	enthusiasts car
parking car	24-hour car	area car	condos car
rowdy car	620-square-foot car	space car	treasures car
hulking car	1800-square-foot car	elements car	condo car
logical car	safe car	family's car	collection car
high-rise car	secure car	(sport utility) vehicle car	cars car
ocean car	car condo car	place car	motorcycles car(int 1)
parking car	120-car car	businesses car	enthusiasts car
secure car	two-car car	number car	money car
environmentally-controlled car	high car	developments car	car car
	rubber car	ocean car	condos car
	hydraulic car	views car	vehicles car
	hot car	storage car	garages car
	air-conditioned car	space car	security car
		collectors car	concierge car
		car car	services car (int 2)
		garage car	car car
		members car	developments car
		space car	developers car
		facility car	condos car
		concierge car	car car
		service car	condo car
		month car	garage car
		yacht car	facility car
		club car	garage car
		slip car	facility car
		car car	locations car
		space car	years car
			developer car
			condos car
			condo car
			cars car
			condo car
			bus car
			car car
			culture car
			people car
			storage car
			car car
			condo car
			development car

Table B.3: Extracted words 3.

Nouns + car From sentences with car	Nouns + car From sentences with car	Verbs + car From sentences w space	Verbs + car From sentences w car
house car	condo car	buying car	turning car
car car	services car	parking car	store car
facility car	collectors car	hulking car	is car(int 1)
locations car	car car	say car	burn car
car car	garage car	start car	turning car
collector car	members car	housing car	stored car(int 2)
facility car	space car	rent car	scheduled car
husband car	facility car	controlled car	to open car
piece car	concierge car	having car	say car
estate car	service car	have car	sold car
place car	month car		opening car
car car(int 3)	manager car		plans car
hurricanes car	concept car		to open car
car car	customers car		start car
collectors car	facility car		go car
collection car	cars car		house car
car car	price car		interested car
garage car	million car		said car
warehouse car	yacht car		plans car
waters car	club car		to open car
winds car	slip car		scouting car
car	car car		said car
house car	space car		developing car
concierges car	park car		put car
owners car	place car		said car(int 3)
cars car	buyers car		is car
studio car	rubber car		keeps car
portraits car	flooring car		breached car
cars car	hyraulic car		damaged car
park car	lifts car		offer car
place car	cars car		take car
cameras car	business car		picking car
owners car	warehouse car		dropping car
cars car	cars car		
hours car	car car		
day car	condo car		
message car	city car		
ownerscell car, phone car,	cars car		
security car	motorcycles car		
car car	days car		
collectors car	garage car		
	cars car,		
	home car		
	races car		

Table B.4: Extracted words 4.

Adjectives + space From sentences with space	Adjectives + space From sentences with car	Nouns + space From sentences with space	Nouns + space From sentences with car
parking space	weather-proof space	idea space	car space
urban space	air-conditioned space	space space	enthusiasts space
parking space	24-hour space	area space	condos space
rowdy space	620-square-foot space	space space	treasures space
hulking space	1800-square-foot space	elements space	condo space
logical space	safe space	family's space	collection space
high-rise space	secure space	vehicle space	cars space
ocean space	car condo space	place space	motorcycles space(int 1)
parking space	120-car space	businesses space	enthusiasts space
secure space	two-car space	number space	money space
environmentally-controlled space	high space	developments space	car space
	rubber space	ocean space	condos space
	hydraulic space	views space	vehicles space
	hot space	storage space	garages space
	air-conditioned space	space space	security space
		collectors space	concierge space
		car space	services space(int 2)
		garage space	car space
		members space	developments space
		space space	developers space
		facility space	condos space
		concierge space	car space
		service space	condo space
		month space	garage space
		yacht space	facility space
		club space	garage space
		slip space	facility space
		car space	locations space
		space space	years space
			developer space
			condos space
			condo space
			cars space
			condo space
			bus space
			car space
			culture space
			people space
			storage space
			car space
			condo space
			development space

Table B.5: Extracted words 5.

Nouns + space From sentences with car	Nouns + space From sentences with car	Verbs + space From sentences w space	Verbs + space From sentences w car
house space	condo space	buying space	turning space
car space	services space	parking space	store space
facility space	collectors space	hulking space	is space(int 1)
locations space	car space	say space	burn space
car space	garage space	start space	turning space
collector space	members space	housing space	stored space(int 2)
facility space	space space	rent space	scheduled space
husband space	facility space	controlled space	to open space
piece space	concierge space	having space	say space
estate space	service space	have space	sold space
place space	month space		opening space
car space(int 3)	manager space		plans space
hurricanes space	concept space		to open space
car space	customers space		start space
collectors space	facility space		go space
collection space	cars space		house space
car space	price space		interested space
garage space	million space		said space
warehouse space	yacht space		plans space
waters space	club space		to open space
winds space	slip space		scouting space
car space	car space		said space
house space	space space		developing space
concierges space	park space		put space
owners space	place space		said space(int 3)
cars space	buyers space		is space
studio space	rubber space		keeps space
portraits space	flooring space		breached space
cars space	hydraulic space		damaged space
park space	lifts space		offer space
place space	cars space		take space
cameras space	business space		picking space
owners space	warehouse space		dropping space
cars space	cars space		
hours space	car space		
day space	condo space		
message space	city space		
ownerscell space,,	cars space		
phone space	motorcycles space		
security space	days space		
car space	garage space		
collectors space	cars space		
	home space		
	races space		

Table B.6: Extracted words 6.

Adjectives + family From sentences w space	Adjectives + family From sentences with car	Nouns + family From sentences with space	Nouns + family From sentences with car
parking family	weather-proof family	idea family	car family
urban family	air-conditioned family	space family	enthusiasts family
parking family	24-hour family	area family	condos family
rowdy family	620-square-foot family	space family	treasures family
hulking family	1800-square-foot family	elements family	condo family
logical family	safe family	family's family	collection family
high-rise family	secure family	vehicle family	cars family
ocean family	car condo family	place family	motorcycles family(int 1)
parking family	120-car family	businesses family	enthusiasts family
secure family	two-car family	number family	money family
environmentally- controlled family	high family	developments family	car family
	rubber family	ocean family	condos family
	hydraulic family	views family	vehicles family
	hot family	storage family	garages family
	air-conditioned family	space family	security family
		collectors family	concierge family
		car family	services family(int 2)
		garage family	car family
		members family	developments family
		space family	developers family
		facility family	condos family
		concierge family	car family
		service family	condo family
		month family	garage family
		yacht family	facility family
		club family	garage family
		slip family	facility family
		car family	locations family
		space family	years family
			developer family
			condos family
			condo family
			cars family
			condo family
			bus family
			car family
			culture family
			people family
			storage family
			car family
			condo family
			development family

Table B.7: Extracted words 7.

Nouns + family From sentences with car	Nouns + family From sentences with car	Verbs + family From sentences w space	Verbs + family From sentences with car
house family	condo family	buying family	turning family
car family	services family	parking family	store family
facility family	collectors family	hulking family	is family(int 1)
locations family	car family	say family	burn family
car family	garage family	start family	turning family
collector family	members family	housing family	stored family(int 2)
facility family	space family	rent family	scheduled family
husband family	facility family	controlled family	to open family
piece family	concierge family	having family	say family
estate family	service family	have family	sold family
place family	month family		opening family
car family(int 3)	manager family		plans family
hurricanes family	concept family		to open family
car family	customers family		start family
collectors family	facility family		go family
collection family	cars family		house family
car family	price family		interested family
garage family	million family		said family
warehouse family	yacht family		plans family
waters family	club family		to open family
winds family	slip family		scouting family
car family	car family		said family
house family	space family		developing family
concierges family	park family		put family
owners family	place family		said family(int 3)
cars family	buyers family		is family
studio family	rubber family		keeps family
portraits family	flooring family		breached family
cars family	hyraulic family		damaged family
park family	lifts family		offer family
place family	cars family		take family
cameras family	business family		picking family
owners family	warehouse family		dropping family
cars family	cars family		
hours family	car family		
day family	condo family		
message family	city family		
ownerscell family,	cars family		
phone family,	motorcycles family		
security family	cars family		
car family	days family		
collectors family	garage family		
	home family		
	races family		

Table B.8: Extracted words 8.

Appendix C

Print: Message-Idea-Execution

This appendix presents examples of how the Message-Idea-Execution framework applies to various print advertisements (Reprint of these advertisements with permission from Scott Kelly/TBWA).

Figure C.1: Message: The Business Saver account earns you more interest. Idea: Make your money your hardest worker. Execution: Show a business shirt made out of money.

Figure C.2: Message: ASB has sponsored tennis for over 100 years. Idea: A 100 years is a long time. Execution: Show the umpire's chair like a rocking chair.
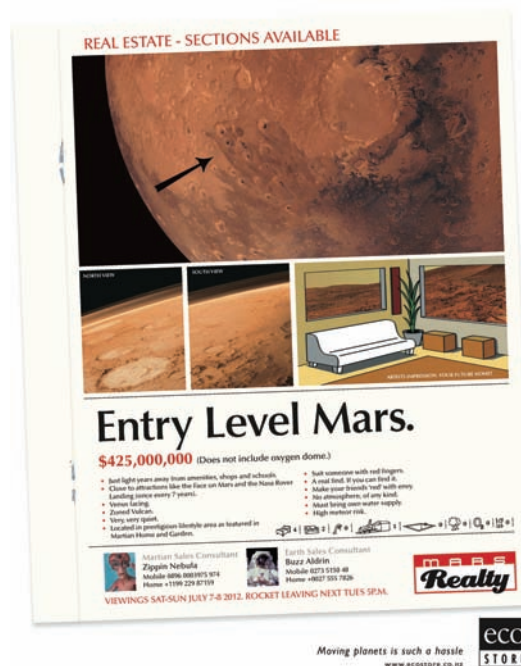
Figure C.3: Message: Use Eco store's eco-friendly products and you'll be helping save the earth. Idea: Make people think about what it would be like if we did actually ruin the earth; "moving planets is such a hassle." Execution: Sell real estate on other planets, make it undesirable.

Figure C.4: Message: Radio Sport. Just sport. Idea: Men can listen to sport whenever they like and do other things at the same time. Execution: Show a variety of funny situations where men are multi-tasking, sport and something else.

Figure C.5: Message: GT concept is the arcade racing game anyone can play - it's so easy. Idea: Even an average family can be race car drivers. Execution: Show an awkward family portrait.

Figure C.6: Message: Listen to Radio Hauraki for an A-Z of Rock music marathon. Idea: The ABC of rock. Execution: Show it like a children's ABC illustration.
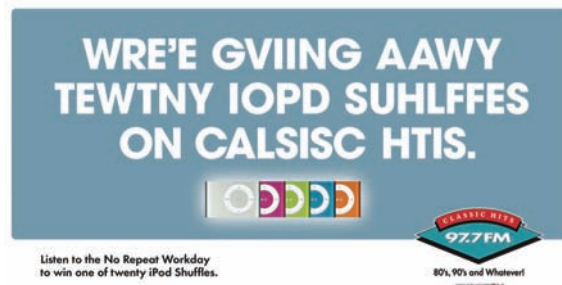
Figure C.7: Message: Listen to Classic hits and win an iPod Shuffle. Idea: Use shuffle as a verb. Execution: Shuffle the words on the billboard.

Figure C.8: Message: Thank all the supporters of the Lion's Rugby Tour. Idea: Thank everyone. Execution: List everyone individually.
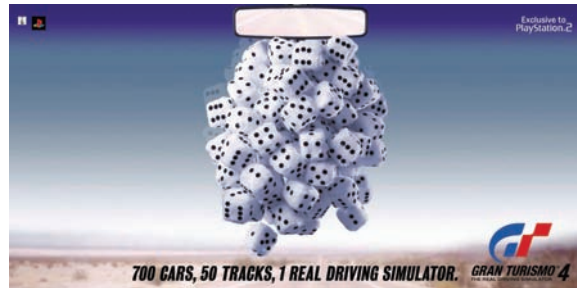
Figure C.9: Message: GT4 now has more cars in it. Idea: Present the high number of cars conceptually. Execution: Show lot of fluffy dice hanging in car.

Figure C.10: Message: The new look small PS2 is here. Idea: Show the product. Execution: Show it in actual size on large media spaces, billboards and buses.

Figure C.11: Message: Playstation2 has dropped it's price. Idea: Show the new price. Execution: The "x" symbol crosses out the old price.

Figure C.12: Message: There's another Spyro the Dragon game out. Idea: Spyro - now even hotter. Execution: The dragon has burnt through the pages of a magazine.

Figure C.13: Message: Tiger Woods is playing in the NZ open (this ad is running in the program). Idea: The world's greatest sports man is coming to heartland New Zealand. Execution: Show a meatpack as his prize.

Figure C.14: Message: Tune your mind to Newstalk ZB for the latest news and information and commentary on current affairs. Idea: Get people thinking about topical issues. Execution: Present a topical issue.

Figure C.15: Message: ZM plays all the latest music. Idea: You can listen to whatever is on this billboard, sticker, poster on this frequency (changed throughout country). Execution: Collage of bands - listen to this poster on...

Figure C.16: Message: Listen to Stu the night time host on ZM. Idea: He only comes out at night. Execution: Show nocturnal animal.

Appendix D

TV: Message-Idea-Execution

This appendix presents examples of how the Message-Idea-Execution framework applies to various TV advertisements (Reprint of these advertisements with permission from Scott Kelly/TBWA).

Figure D.1: Message: Classic hits plays all that music that's a part of your life. Idea: People using lyrics in real life. Execution: A bride singing a song on her wedding day.

Figure D.2: Message: PS2 graphics are so awesome you'll think you're in real life. Those who do not play are missing out. Idea: Show real life and gaming crossing over. Execution: Mix parts of gameplay with real life.

Figure D.3: Message: GT concept is the arcade racing game anyone can play - it's so easy Idea: Even an average family can be race car drivers. Execution: Show an awkward family portrait.

Figure D.4: Message: Rugby is a part of your life, Nike is associated to rugby. Idea: Rugby, even after the game is finished you are still thinking rugby. Execution: Rugby players using rugby moves in real life.

Figure D.5: Message: Playstation platinum games are cheap and there are lots of them. Idea: Why play bad games when you can play Playstation platinum. Execution: Show some really bad games that you could be playing if you didn't buy Playstation platinum games.

Figure D.6: Message: PSP is portable and cool Idea: Show someone using it outside. Execution: Show someone jumping out of a plane with it.
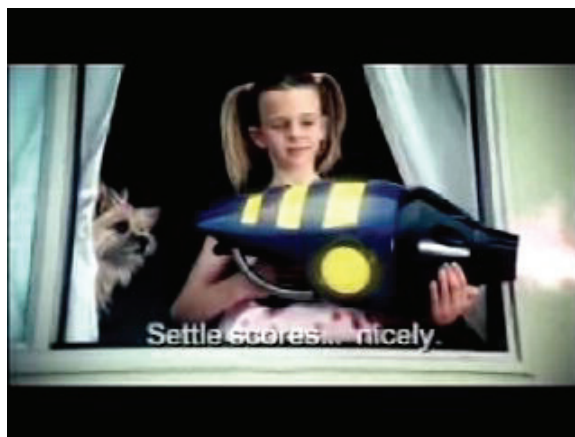

Figure D.7: Message: Ratchet and Clank 3 is out and it has got more weapons. Idea: Show kids using the weapons in a backyard fight. Execution: Show kids using the weapons in a backyard fight.

Figure D.8: Message: playstation have a cool range of games Idea: Stay inside and work on your PlayStation Tan. Execution: Bring it to life with a song and music video styles.

Figure D.9: Message: Jak 2 is out now and he is out for revenge. Idea: Show a moment when someone gets revenge on their friends. Execution: Show a moment when a friend tries to get revenge on his friends but is unsuccessful - just stick to playing the game.

Figure D.10: Message: ASB have an account called fastsaver. Idea: Use the brand mascot "Ira Goldstein" to tell the story. Execution: Ira buys a bike with his savings and uses it to explain the product to his boss.

Figure D.11: Message: Newstalk ZB gives you right up to the second news. Idea: Show a situation where the people are hearing about what they are doing live on the news. Execution: Bank robbers find out they are being chased by the police by tuning into the radio.

Figure D.12: Message: Listen to ZM and win free rent for a year. Idea: What happens when someone wins this prize? All their friends move in for free. Execution: Show a house full to the brim of flatmates.

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