receive
medical care

Elsa

receive
nutritional advice

Johanna

no mother to child
transmission

Lisa

Adrian

Deidre

# Being positive about VCT & HIV

*"Experimental research into the effect of metaphors in a web site on Voluntary Counseling and Testing in South Africa and the Netherlands."*

Maria

Beryl

Marten

stay
disease free

keep community
disease free

Faculty of Arts          Prof. Dr. Alfons A. Maes          A.J.A.M. van Zandvoort
Tilburg University        Prof. Piet H. Swanepoel           January 2004

# Being positive about VCT & HIV

*"Experimental research into the effect of metaphors in a web site on Voluntary Counseling and Testing in South Africa and the Netherlands."*

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| Faculty of Arts | Prof. Dr. Alfons A. Maes | A.J.A.M. van Zandvoort |
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**PREFACE**

Ik moet eerlijk toegeven, het onderwerp van de scriptie maakte me in eerste instantie niet zoveel uit. Ik had mijn zinnen gezet op Zuid-Afrika. Een klein berichtje op het UvT-web was genoeg om mij over te halen naar dit land af te reizen en er mijn onderzoek uit te voeren.

Na een aantal gesprekken met Fons Maes was ook het onderwerp een feit. Samen met Iris Nieuwboer bereidde ik me voor op het grote Zuid-Afrika avontuur en het onderzoek dat we daar uit gingen voeren. We hebben het daar geweldig naar onze zin gehad en zelfs nog tijd gevonden om aan de scriptie te werken.

Zoals elke student in de afstudeerperiode heb ik ook mijn ups en downs gekend en het resultaat liet een jaar op zich wachten. Maar nu kan ik met trots mijn doctoraal scriptie presenteren.

Graag wil ik Fons Maes en Piet Swanepoel bedanken voor hun begeleiding tijdens het afstuderen, Denise Lindenau voor de voorbereidingen op Zuid-Afrika en Harry Bunt voor het plaatsnemen in de examencommissie.

Tot slot hoop ik dat ik met mijn scriptie een waardevolle bijdrage heb kunnen leveren aan de grote AIDS-problematiek in Zuid-Afrika.

Anouk van Zandvoort
Liempde, January 2004

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## EXECUTIVE SUMMARY

This research is linked to one of five sub projects within the Epidasa project, a cooperation between Dutch and South African universities, on *improving the effectiveness of public information documents on HIV/AIDS in South Africa.*

South Africa is the country with the most people living with AIDS in the world. The number of people suffering from AIDS/HIV in South Africa will continue to rise without radical changes in personal behavior and effective governmental intervention. Voluntary Counseling and Testing (VCT) has proven to be an effective way of slowing the transmission of the disease.

The aim of this study was to measure the effect of metaphors in a web site which intends to persuade people to voluntary report for Counseling and testing. The second aim is to measure the differences in persuasive power of the web site and metaphors between South Africa and the Netherlands.

In this respect two web sites on VCT had been developed, one containing metaphors in testimonials on the web site and one without metaphors. This web site was used in an experiment conducted at three universities, two in South Africa and one in the Netherlands. After reading the web site the students had to fill out a questionnaire. The results of the questionnaire were used to answer the research question.

The results showed that metaphors hardly had any effect on persuasiveness of the web site. The design of the material and the type of information could account for the lack of effect. Nationality did seem to influence evaluation of the web site, but this effect was not real. Differences in evaluation between the two nationalities were the result of a difference in scoring.

# 1    INTRODUCTION

## 1.1    RELEVANCE

This research is linked to one of five sub projects within the Epidasa project (a cooperation between South African and Dutch universities) on *improving the effectiveness of public information documents on HIV/AIDS in South Africa.*

South Africa is the country with the most people living with HIV in the world. It is estimated that more than 50,000 South Africans are infected each month (South African Medical Research Council, 2001). A survey by UNAIDS (United Nations, 2003) showed that an estimated 20.1 percent of the population (4.8 million people) between the ages of 15 and 49 is infected with HIV. Without radical changes in personal behavior and effective governmental intervention, the cumulative AIDS deaths will raise to 5 to 7 million in South Africa by 2010 (South African Medical Research Council, 2001). With this research I will try to make a contribution to the design and evaluation of effective communication on AIDS/HIV in South Africa.

Because AIDS is a usually fatal and usually sexually transmitted disease it often provokes strong images in people's minds; HIV is like a ticking time bomb, "The Valley of the Shadow", and dead flower all refer to HIV/AIDS. These examples show that metaphors are used to illustrate the concept of HIV/AIDS and that AIDS/HIV and metaphors are often linked.

A metaphor can be used as a mean to influence and increase the persuasive power of a communication. Metaphors have the capacity to structure, transform, and create new knowledge as well as evoke emotions, and influence evaluations (Sopory & Dillard, 2002, 382). Ottati et al (1999) claimed that a metaphor offers possibilities for more elaboration on the message content by adding interest to a communication. Moreover metaphors can provide vivid and suggestive images and express multiple meanings in a concise way (Ottati et al, 1999). Sopory and Dillard's (2002) meta-analytic summary of existing empirical studies affirms metaphor's persuasive effectiveness over their literal counterparts.

In this research metaphors are investigated in a context of HIV/AIDS. This context regards Voluntary Counseling and Testing (VCT), which has proven to be an effective way of slowing down the transmission of HIV.

In 1992, the government of South Africa launched the National AIDS Coordinating Committee of South Africa (NACOSA) to develop a national strategy on HIV/AIDS. The goals of this plan were to prevent HIV transmission, reduce the personal and social impact of HIV infection, and mobilize and unify provincial, international and local resources. In line with this plan the Department of Health conducted the South African National STD & HIV/AIDS Review in 1997. Some of the recommendations made in this review have been implemented. Biomedical interventions and research have received primary attention, particularly on the development of an AIDS vaccine. However, there is still no cure or vaccine. The only medical and social services available, are VCT (see appendix 1: the process of VCT) together with Nevirapine to prevent transmission from mother to child (Gangla, 2003). To reduce the chance of infection with the virus, it is of great importance that people voluntarily apply for HIV/AIDS tests.

*"Research by the University of Cape Town's Centre for Actuarial Research (Care) shows that nearly three million Aids deaths can be averted and over 2,5-million HIV infections prevented in the next 13 years by implementing VCT, mother to child transmission of sexually transmitted infections (STIs) and anti-retroviral therapy (ART)."* (Treatment Action Campaign, 2002).

The Care study showed that voluntary counseling and testing resulted in "*substantial reductions in the level of unsafe sex both by those who tested negative and positive for the virus. The reduction in the number of new HIV infections that would result from a comprehensive VCT program would be about 35,000 a year. By 2015 about 360,000 infections could be averted by VCT alone*." (The Daily Dispatch, 4 October 2002).

VCT is still in its infancy in South Africa and there are many challenges as well as opportunities facing the health services in the country. Although the necessary infrastructure in terms of clinics and hospitals exists, and even though it is one of the top priorities in the government's HIV/AIDS plan, a VCT culture is not yet established in South Africa (Van Dyk & van Dyk, 2002a). VCT is still mainly perceived and used for diagnostic as opposed to prevention and treatment purposes. Many of the clients who present for counseling, are referred by doctors due to symptoms or because they are already in an advanced stage of AIDS (Van Dyk & Van Dyk, 2002a). In this research emphasis will be put on the importance of VCT in order to persuade people to voluntary report for Counseling and Testing.

Many efforts have been taken to bring VCT to the attention of the people in South Africa. The Government and specialised HIV/AIDS organizations in South Africa have set up several HIV/AIDS prevention, care and support interventions and programmes. One initiative that emerged from the NACOSA plan was the *Beyond Awareness Campaign.* This campaign ran from 1997 to October 2000, and focused on advertising, materials development, training and research. The main objective of the campaign was to develop and distribute communications resources that can support action around HIV/AIDS. Other communicative interventions are run by NGO partners such as LoveLife and Soul City (Institute for Health and Development Communication). LoveLife is a nationwide campaign, which aims to promote healthy sexual behavior among adolescents, reduce the incidence of HIV/AIDS, sexually transmitted diseases and teenage pregnancies. It uses a widespread media campaign targeting adolescents, and offers educational, recreational and sexual health services in under-resourced areas. Soul City uses the mass media to promote awareness around health issues.

These prevention initiatives have only met with mixed levels of success. In AIDS Foundation of South Africa (2000) it is stated that *"The results of campaigns and prevention programs has been largely disappointing..."* A crucial problem in this regard is the fact that there have been hardly any attempts at a systematic evaluation of the impact that current prevention interventions are having on the epidemic in South Africa (University of South Africa et al, 2002). Very little exists by way of documented research on the impact that specific programs and prevention messages have on the South African population.

The aim of this research is to investigate the effect of metaphors is a context of Voluntary Counseling and Testing, where people will be persuaded to report for VCT. Moreover, the experiment is conducted in two countries to measure the effect of cultural differences on the design of persuasive texts on HIV/AIDS. Research (Sears et al., 2000, Le Pair et al., 2000, Hofstede, 1991) showed that culture and cultural differences exist and

that they can have an effect on the persuasiveness of texts. Besides South-Africa, a developing country with a high HIV prevalence, the Netherlands, South Africa's opposite regarding the level of prosperity and HIV prevalence were investigated. In the Netherlands a total of 8.496 HIV infected individuals were registered on august 1st 2003 (Rijksinstituut voor Volksgezondheid en Mileuhygiëne, 2003).

To measure the impact of metaphors in a context of VCT an experiment will be conducted in which university students from both countries form the target group. The communicational efforts will be aimed at them. Besides the obvious pragmatic reason of easy availability, university students are still in the position of making an informed choice about whether or not to go for VCT. University students live in cities where there is good access to VCT facilities. Both at University of South Africa (UNISA) and University of Pretoria (UP) a medical centre is present on campus where students can talk to a counselor. However Van Dyk & Van Dyk (2002a) found in their study that young people prefer to go to a distant clinic for VCT, where no one knows them. In another study Van Dyk and Van Dyk (2002b) discovered that people with a higher level of education showed higher intention to change their sexual behavior (van Dyk & van Dyk, 2002a).

The intended message will be communicated to the students by means of a web site on the Internet. A web site on Internet has the potential to reach a vast number of students both in the Netherlands and South Africa. In 2001 the number of regular Internet users in South Africa was estimated at 1.600.000 (InfoSud, 2002). It is hard to give a precise number, since different sources use different numbers. It should be noted that every computer with an Internet connection is used by an average of 3 to 5 people. When we look at it this way, the total number of Internet users in South Africa can accumulate to 3.5 million in total. This is 8% of the total population. For the Netherlands this number was 51% in 2002 and 57% in 2003 for the population of 16 years and older (NFO Trend box, 2003). In South Africa about 82% of the Internet users are below 45 years of age. Internet is most frequently used by employees (33%), followed by students (26%). The vast majority of Internet users lives in cities (InfoSud, 2002), where universities and students can be found. Besides availability, novelty of the medium (mainly in South Africa), cultural differences with respect to how a web site is perceived (Sears et al, 2000), and the lack of research into the use of this type of medium in a context of HIV/AIDS can be given as reasons to support the choice of a web site in this research.

The aim of this research is to measure the effect of metaphors in a web site which intends to persuade people to voluntary report for Counseling and testing. The second aim is to measure the differences in persuasive power of the web site and metaphors between South Africa and the Netherlands.

## 1.2    THEORECTICAL FRAMEWORK

In this section, current research on metaphors and cultural differences and their impact in the context of AIDS/HIV and Voluntary Counseling and Testing in particular will be described.

### 1.2.1    The role of cultural sensitive communication

South Africa and the Netherlands, the two countries where the experiment was conducted, differ on many cultural aspects. These differences in culture can account for a difference in the evaluation of the web site. Sears, Jacko & Dubach (2000) already found that international differences exist on the perceived usability of web sites. Corpus analytical research by Le Pair, Crijns & Hoeken (2000) showed that members of different cultures react differently on certain design choices. This section deals with aspects of culture which could account for the difference in evaluation of the web site in general or the metaphors in particular.

A culture can be described on the basis of values. Values represent explicit goals that are pursued in life by a group of people. Different people pursue different goals and as a result cultures differ in the relative importance attributed to values (Le Pair et al., 2000, p.359). Values play an important role in the persuasion process and consequently the persuasion process is also sensitive to cultural differences (Le Pair et al., 2000, p.369-370). Hofstede (1991) describes 4 dimensions based on values. One of the dimensions, which is most relevant in this context is individualism versus collectivism:

*"the degree to which individuals are integrated into groups. On the individualist side we find societies in which the ties between individuals are loose. On the collectivist site, we find societies in which people from birth onwards are integrated into strong, cohesive in-groups"* (Hofstede 1991, 71).

The score on Hofstede's individualism-index (1991, p.73) indicates that the Netherlands are more individualistic than South Africa[1]. The relative importance of this dimension (value) for the Netherlands and South Africa can be marked as a cultural difference**.**

Involvement with HIV and AIDS is another aspect in which the two cultures differ. The number of HIV-infected people in South Africa is substantially higher than the number of HIV-infected people in the Netherlands. In South Africa each person has a family member, friend or colleague, who is suffering or died from HIV/AIDS. South Africans are also more exposed to advertising and information about this subject (LoveLife, Soul City, Beyond Awareness campaign). From these two facts, it can be expected that South Africans are more involved in this matter than the Dutch students. High involved people, in this context the South Africans, are more inclined to read the web site thoroughly and to think about what is stated**.**

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[1] It must be taken into account that this information is gathered from employees in 66 different countries all working for the same organization. This can affect the score. People who all work for the same organization can share the same values, which do not necessarily reflect the values of that specific country.

A third aspect in this matter is the literacy level of the two countries. Metaphors require cognitive processing to be fully understood. Even when a metaphor is processed affectively, the metaphor must be read to be recognized. This does not only apply to metaphors but to the whole web site. An article in De Morgen of 14 June 2003 (*Zuid-Afrikaanse leerlingen kunnen niet lezen of rekenen*) describes a research by the South African government that investigated literacy levels on 1.400 South-African schools (3rd grade). The results indicated that 61% of the students did not pass a literacy test. Similar findings were presented in the research proposal by Lilian Gangla (2003). Only 33.6% of grade 5 learners were found to possess "average" reading skills, with 38.5% of the grade 6 learners and 45.5% of the grade 7 learners. The number of functional literates in the Netherlands accumulates to 90% (International Adult literacy survey, 1999). The low literacy level of South Africans could see to it that metaphors (and the rest of the web site) are not fully understood.

The cultural differences between the two nationalities also serve as guidelines for the design of the experimental material. For example, the web site should address both the community-oriented South Africans, as well as the individualistic Dutch and the language should be kept simple and understandable for both nations.

**1.2.2 The metaphor**

In literature, many definitions of metaphor can be found. What all definitions have in common is the mapping of the base on the target. The definition I will use is from Sopory and Dillard (2002): "*An implied comparison between two dissimilar objects, such that the comparison results in aspects that normally apply to one object being transferred or carried over to the second object*". Metaphors allow a person to understand one concept (the target) in terms of another (the base) by suggesting a relation between two things that would normally not be considered equivalent. This relation consists of the similarities and/or analogies between the two concepts known as the common grounds (Goatly, 1997, p. 9). An example of a metaphor, which is used in the web site is: *Using a condom is like wearing a seatbelt; it gives you the safe feeling of being protected* (testimonial Berry). The concept *wearing a seatbelt* is the base, the concept *using a condom* is the target and the similarity, the common ground, is the fact that both a condom and a seatbelt give you *the safe feeling of being protected.* As long as one element of the metaphor is understood, you can learn something about the other. Thus, metaphors encourage looking for parallels between a concept that is known and an object of interest.

A metaphor is a rhetorical figure, which can be defined as "*an a*r*tful deviation in (expected) language use designed to enhance communication*" (Mc Quarrie and Mick, 1996). McQuarry and Mick (1996) state that rhetorical figures can motivate the potential reader and that deviation is a factor that attracts and holds attention. To understand the concept of metaphors I will first explain more about rhetorical figures in general, which form the basis of metaphors.

McQuarrie and Mick (1996) provide a framework for categorizing rhetorical figures (figure 1: Taxonomy of rhetorical figures in advertising). An important distinction is that between schemes and tropes. Metaphors are a (complex) form of a trope. Examples of a scheme are rhyme and alliteration: *Veni, vidi, vici* (Julius Caesar). Schemes and tropes differ in two ways with respect to how they deviate from expected language.

Schemes represent deviation focused on surface-level or sensory aspects, as when one repeats sounds to achieve a rhyme. In addition schemes involve excessive regularity in the way that multiple, redundant cues communicate the intended meaning (meaning certainty). Schemes are overcoded and add redundancy to the message. This means that schemes offer multiple possibilities to retrieve the intended meaning and to enhance recall. Alliteration, for example, creates a phonemic link between the elements, for example *Safe Sex.* The encoding possibilities for this phrase include the prepositional content and the phonemic equivalence of the initial consonants. Schemes fit a model of overcoding, while tropes fit a model of undercoding. In undercoding the readily available organizations of information are insufficient.

Tropes represent incongruity focused on semantic aspects and background knowledge. Tropes are created by the substitution of one meaning for the other or by implying more than is said. An example of a trope, which Love Life uses in their campaign against AIDS, is: *Too smart for just any body.* A picture of a black woman in her underwear accompanies this slogan. The part that creates the double meaning is *any body. Any body* can firstly refer to a *male body* and secondly to *everyone.* The memorability of tropes (including metaphors) differs from schemes. Tropes involve irregularity such that existing cues do not fully communicate the intended meaning or communicate multiple possible meanings (meaning uncertainty). Because they are

undercoded, tropes are incomplete in the sense of lacking closure. Tropes encourage filling lexical gaps and thus invite elaboration by the reader. Tropes may lead to multiple encodings and/or the strengthening of existing conceptual linkages in memory. The additional cognitive activity spent on reinterpretation increases the number of associative pathways stored in memory (McQuarry & Mick, 1996).
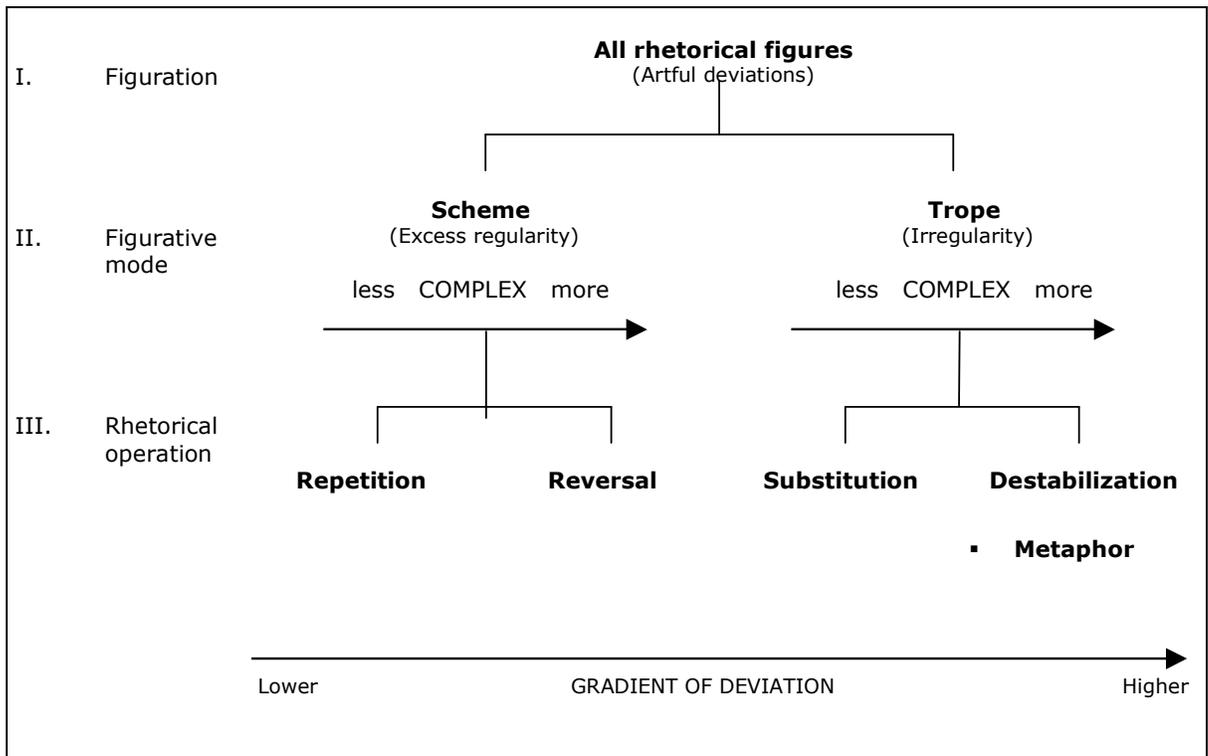


**Figure 1**: Taxonomy of rhetorical figures (McQuarry & Mick, 1996)

The distinctions between tropes and schemes have implications for the processing of arguments. McQuarrie and Mick (1996) argue that arguments containing schemes will be processed heuristically, while arguments containing tropes will lead to more information-processing activity. According to them metaphors, which are a form of a trope, require a more thorough processing to be fully appreciated. Moreover McQuarrie and Mick (1996) claim that both schemes and tropes are more memorable than literal arguments.

### 1.2.3 Integrative model of behavioral prediction

The aim of the web site is persuading people to voluntary report for counseling and testing. In this respect metaphors are used to make the web site more convincing. This aim suggests that it should be possible to influence behavior in a persuasive context. In this section the integrative model of behavioral prediction (Fishbein & Yzer, 2003) is used to explain how behavior is determined.

The integrative model of behavioral prediction (Fishbein & Yzer, 2003) is a behavioral theory that focuses on changing beliefs about consequences, normative issues, and efficacy with respect to a particular behavior. This model combines three theories that have been widely used in health behavior research and interventions (Fishbein & Yzer, 2003, p. 165).

First the health belief model, which proposes that in order for someone to perform recommended health behavior, the person must first believe that he or she is at risk for acquiring a serious and severe negative health outcome (e.g. HIV/AIDS). At the same time, the person must believe that the benefits of performing the recommended protective behavior outweigh the costs of performing that behavior. In the context of VCT this means that a person must understand that he or she is at risk for being infected with HIV by having unsafe sex and that VCT can offer him or her help.

Second the social cognitive theory. This theory claims that there are two primary factors that determine the likelihood that someone will adopt a health-protective behavior. First, the person must believe that the positive outcomes of performing the behavior outweigh the negative outcomes. Second, the person must have a sense of self-efficacy with respect to performing the behavior. Self-efficacy means that the person must believe that he or she can perform the recommended behavior, even when facing barriers that make it difficult to perform that behavior. With respect to VCT a person must believe (as with the health belief model) that the benefits of VCT outweigh the costs and that he or she has the opportunity to overcome the barriers to report for VCT.

Finally, Fishbein and Azjen's Theory of Reasoned Action (TRA) is a behavioral theory, which provides insight into the determinants of human behavior (Hoeken, 1998). The TRA emphasizes that all behavior is controlled and reasoned. It states that a person's behavioral intention is normally the best predictor of how someone will actually behave. Behavioral intention consists of two factors, namely the person's own attitude toward the behavior and the subjective norm about what "significant others" (i.e. people whose opinion is valuable) think he or she should do. To have a person report for VCT, he or she must have a positive attitude towards VCT as well as his or her peers.

These three behavioral theories suggest three critical determinants of a person's intentions and consequently a person's behavior (Fishbein & Yzer, 2003, p. 166): first, the person's attitude toward performing the behavior, which is based upon one's beliefs about the positive and negative consequences of performing that behavior. Metaphors can play an important role in determining these beliefs. Sopory and Dillard (2002, 382) claimed that metaphors have the capacity to influence evaluations. Evaluations form the basis of the beliefs. Metaphors that influence the evaluations in the advocated direction create stronger beliefs.

The second determinant of a person's intentions is perceived (subjective) norms. This includes the perception that those with whom the individual interacts most closely support the person's adoption of the behavior, and that others in the community are performing the behavior. And thirdly, self-efficacy. The relative importance of these three psychosocial variables as determinants of intention will depend upon both the behavior and the population being considered.

The recommended behavior in this context is reporting for VCT. VCT is still the only medical and social services available, besides Nevirapine, in the fight against HIV/AIDS. As van Dyk and van Dyk (2002a) already mentioned a VCT culture is not yet established in South Africa. The number of people that have themselves tested is still relatively low. Barriers to greater use of high quality VCT include low awareness of the psychosocial benefits of counseling and testing, fear of stigma and rejection or violence, and low access to trusted services because of cost, distance, quality, confidentiality (see appendix 2: determinants of VCT). These beliefs prevent people from reporting for VCT. These have to change in order to have more people adopt the desired behavior.

The two nationalities in this research are South Africans and Dutch. It is hard to determine the relative influence of each of the three determinants on intention in this context. However, differences between South Africa and the Netherlands can be expected. South Africans are more community-oriented, which can account for more influence of perceived norm on intention compared to the Netherlands. Figure 2 shows the integrative model of hehavioral prediction.
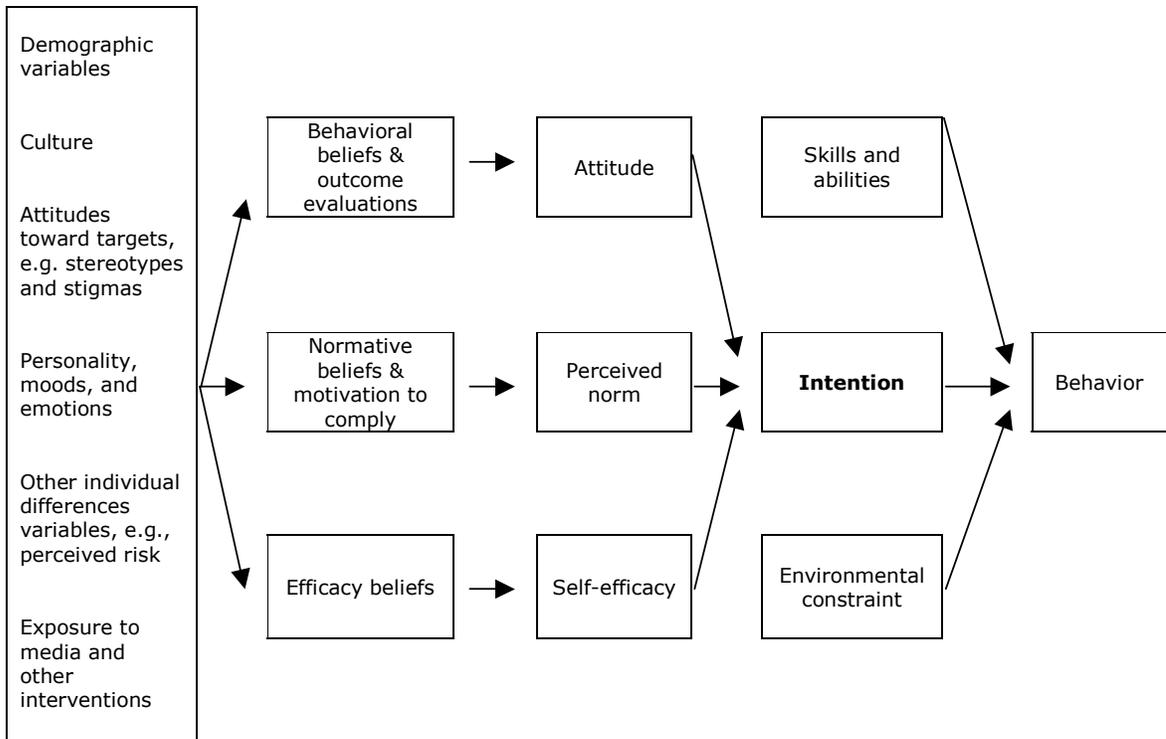


**Figure 2**: integrative model of behavioral prediction (Fishbein & Yzer, 2003)

According to this model, any given behavior is most likely to occur if one has a strong intention, the necessary skills and abilities required to perform the behavior and there are no environmental constraints preventing behavioral performance. The focus in this research is on intentions. The integrative model of behavioral prediction proposes four ways on how persuasive texts can influence intention. First by changing attitudes, second by changing the perceived norm, thirdly by changing self-efficacy and finally by changing the relative influence of subjective norm, attitude and self- efficacy on intention. Key elements in persuasion are the primary beliefs and the normative beliefs, which are both cognitive. These two elements can affect a change in respectively attitudes and perceived norms. The focus in this research is on these two elements.

Attitude change is the result of the evaluation of information, emotions, and previous displayed behavior and based on primary beliefs. Supplying a person with information can help to adjust his primary beliefs. Strong arguments are an information source that can help changing beliefs (and attitudes as a result) in the advocated direction. To change primary beliefs, the arguments must differ from the initial beliefs and they must relate to the beliefs to change. The determinants analyses (see appendix 2) revealed why people choose whether or not to report for VCT. These reasons can be considered the primary beliefs of the target group. In order to change these beliefs the arguments have to stress the consequences of behavior by addressing the reasons pro and/or con VCT. In this respect metaphors can be used to make the arguments more persuasive. Metaphors have the capacity to structure, transform, and create new knowledge (Sopory & Dillard, 2002, 382). Moreover, they can add interest to a communication (Ottati et al, 1999).

Normative beliefs (or peers) can influence the perceived norm. The influence of peers occurs when people continually compare themselves with others to ascertain whether or not their own behavior is appropriate (Maxwell, 2002). Physical proximity, age, and lifestyle similarities determine the degree of identification with a peer (Maxwell, 2002).

In conclusion I can state that both arguments and peers can influence a person's intention. Metaphors can be used to make the message more convincing.

### 1.2.4  Elaboration Likelihood Model

Previously was stated that arguments and testimonials could influence behavioral intentions. In this section I will discuss two dual-process models that indicate how people will evaluate the arguments presented on a web site to determine their opinion. These models are Petty and Cacioppo's Elaboration Likelihood Model (ELM) and Chaiken's Heuristic Systematic Model (HSM). Both models distinguish between two processes regarding persuasion: central (or systematic) and peripheral (or heuristic) processing. Metaphors can affect both processes.

*Central or systematic processing*

When people process information centrally, they will devote much time and energy to evaluate the arguments. Arguments are a cue for central processing. Central processing is careful and systematic. It assumes that the person is highly motivated and able to think about the message. When a person scrutinizes the arguments, his attitude will be influenced mainly by the strength of the arguments. HSM calls this systematic processing; ELM emphasizes high elaboration and persuasion occurs via the central route. Attitudes, which are formed by this process, are well integrated in the person's belief system and persist for a long time.

There are many theories on how metaphors influence central processing. These theories are discussed in 1.2.5 This includes all theories except for the *communicator credibility theory,* which describes the effect of a metaphor on peripheral processing. The other theories state that metaphors can affect central processing in situations where the reader is expected to elaborate on information. The stimulated elaboration view, for example, states that in order to understand the metaphor or to form a common ground, the metaphor has to be processed thoroughly. The superior organization theory proposes that the associations evoked by the metaphor help to structure the arguments. The process of structuring the arguments can be seen as systematic processing.

*Peripheral or heuristic processing*

This process is much less focused on the content of arguments. It assumes that motivation and ability to scrutinize the arguments are low. Instead, people use existing rules in their minds, or heuristics, to judge the message. In this context the credibility of the source, the number of arguments or the form of a message can influence the attitude. For this process to occur, heuristic cues have to be present (HSM). ELM calls these peripheral cues. Testimonials can be seen as heuristic cues. Heuristics are often based on experience. Attitudes that are changed by the peripheral route are weaker and more superficial.

When a metaphor is processed heuristically, its persuasive power depends less on its content and more on its form. The form of a metaphor deviates from expected (literal) language use. A metaphor does not literarily state what is intended to be said. Instead, it makes a comparison between two objects to pass on the meaning. According to McQuarry and Mick (1996) deviation is a factor that attracts and holds attention. A metaphor itself can also serve as a peripheral cue that triggers heuristic inference. The communicator credibility mentioned in 1.2.5 uses metaphors as a heuristic cue.

*Experiential processing*

Meyers-Levy & Malaviya (1999) propose an extension to the dual process-models in which a third way to persuasion and a correction phase emerge. This "third way" is the experiential processing strategy. This strategy assumes that motivation and ability to process a message are so meager that only the most fleeting and scant message processing occurs. Judgments of the message are not based on the content or peripheral cues but rather on sensations or feelings prompted by the act of processing. "*These might include a vague sensation of familiarity caused by prior exposure to an item or a sensation of competence generated by the apparent ease with which obviously degraded items are noticed*" (Meyers-Levy & Malaviya, 1999). In situations where a person is more motivated and able experiential processing can also occur and sometimes influence judgments about the message. Judgments can be influenced by the autonomic sensations that people experience from the process of message processing.

Form and content have very little or no effect when a message is processed experientially. Metaphors can influence this process only by the emotions or mood it invokes. These might include a sensation of familiarity caused by prior exposure to a metaphor in the persuasive message or the reward of pleasure or relief for relieving the negative tension associated with the recognition of the metaphor.

After going through one of the three routes to persuasion it is possible that a person remains with unanswered questions or an unsatisfied feeling. That is why a correction on the initial judgment is possible. It allows people to attempt to correct their initial judgments for biases that they perceive may have affected such judgments. People generally are inclined to correct their judgments because they prefer to hold views that are reasonable accurate and free from bias. In that case, the dual-process model will be walked through again in a way that requires more attention of the reader.

*Motivation and ability*

According to the ELM, a key element in persuasion is matching the message to the motivation level and ability of the individual. Low-involved people, whose motivation and ability levels are low, are more persuaded with messages containing peripheral cues. When they become more involved, the persuasive arguments are more important. Petty, Wheeler and Tormala (2000) give an overview of motivational and ability variables, which are responsible for the amount of processing. It can be expected that South Africans and Dutch differ on these aspects.

One of the most important variables influencing a person's motivations to elaborate is the perceived personal relevance or importance of the communication. In addition, people are more motivated when they expect to discuss the issue with a partner.

Need for cognition refers to the pleasure to elaborate on information (Hoeken 1998, 91). A high need for cognition means that a person is more inclined to think about the arguments whereas people with a low need for cognition are less motivated to do so. Need for cognition can predict to a great extent the level of elaboration on the quality of arguments in a persuasive message (Hoeken, 91).

Individual differences exist in the ability of people to think about a persuasive message. For example, as prior knowledge about VCT increases, people can become more able (and perhaps more motivated) to think about VCT-relevant information. When knowledge is low or inaccessible, people are more reliant on simple cues.

Anxiety is the last factor I would like to discuss in this matter. Anxiety can be defined as: *abstract threats in which there is uncertainty about what will happen* (Millar & Millar, 1998). Increase in anxiety with regard to VCT can disrupt the ability of persons to process information, even when a person is involved. VCT is seen as detection behavior. Detection behaviors do not provide any immediate plan of action to deal with health threats. Instead of reducing anxiety, detection behaviors may threaten the person's perception of good health and actually generate anxiety by confronting the person with the possibility of finding a health problem. Less processing of a message about detection behaviors (VCT) occurs as a result. Anxiety in the absence of a plan of action can even motivate people to defensively avoid thinking about the behavior.

Metaphors are capable of influencing processing both affectively and cognitively. This characteristic makes metaphors useful for communicating about VCT, since it is hard to predict how people will react (cognitively or affectively) on such a stigmatized subject. Based on the 5 perspectives on metaphors and persuasion discussed in the next section, metaphors most often serve as a cue for central processing. Metaphors are a form of a trope and require cognitive elaboration to be understood. More elaboration leads to more central processing. Peripheral processing only focuses on the structure of the metaphor and experiential processing on the emotions it invokes. Central processing on the other hand starts from the moment a person reads the metaphors and makes an effort to understand it.

In the next section the 5 perspectives on metaphor comprehension are dealt with.

**1.2.5 Theories of metaphor comprehension**

Sopory and Dillard (2002) give an overview of three theories, which deal with the understanding of metaphors. These theories will help to explain the persuasive effect of metaphors. These three theories will be described next.

*Literal-primacy view*

In this view a metaphor is considered exceptional language that is literally false. It suggests that the process of understanding the metaphor requires three stages. The first stage is deriving the literal meaning of the metaphor. The second stage is to test whether the literal meaning makes sense and detect an anomaly or a violation of semantic rules. The third stage is to seek an alternative meaning when the literal meaning fails to make sense. This view claims that a metaphor is understood when all three phases are met. As an example the metaphor: *Practicing safe sex only half of the time is like hiding a landmine in the garden where play (and risk their life stepping on it).* Deriving the literal meaning results in an image where safe sex and landmines and playing children are combined (stage 1). The combination of these three aspects is seen as an anomaly (stage 2). The alternative meaning is that practicing unsafe sex is a risk for life (stage 3). At this point the metaphor is understood.

There is an interesting analogy between this view and the correction phase of the model of Meyers-Levy & Malaviya (1999). In this phase readers adjust their initial judgment about a communication. The model, consisting of three routes to persuasion, will be gone though again and the initial judgment will be adjusted. The correction phase corresponds with the second phase of the literacy-primacy view when the literal interpretation of the metaphor fails. Deriving the meaning of the metaphor can be considered as following a route in the model again.

*Salience -imbalance*

The salience-imbalance theory uses the notion of attribute prominence to explain how metaphors are comprehended. *Salience* is defined as the relative importance of an attribute. The first attribute that comes to mind when encountering a metaphor is the most salient, and so on. A metaphor emphasizes certain aspects (or attributes) of the target that are most central. An example of a metaphor used in the web site is: *The medicine is like a group of brave soldiers killing the evil viruses in my body*. The most prominent attribute in this respect is that medicines FIGHT the disease as soldiers fight the enemy. Other metaphors can highlight other attributes of medicines. For example, the metaphor: *The medicine is like a nurse*, emphasizes the CARING aspect.

*Structure-mapping*

The most popular view nowadays is the structure-mapping theory. This theory departs from a system of connected knowledge. People have associative networks or pathways in memory for different concepts. With regard to comprehension, instead of comparing lists of attributes, it proposes that the relations among the attributes themselves are compared for similarities. Gentner (1983) linked metaphor explicitly to analogy. In

interpreting a metaphor people rely on stored pathways in memory, which are most connected. For example, the metaphor: *Donating blood is like replacing an old battery with a new one* is interpreted by noting the relation: *giving new energy by replacing something old and broken by something new* rather than the independent attributes.

The three theories I have just described are used to set up theories on the persuasive power of metaphors. In this section I will elaborate on 5 perspectives on metaphor and persuasion (Sopory and Dillard, 2002). These theories can explain (combined or separately) the persuasive power of metaphors.

### Communicator Credibility

Communicators who use metaphors are judged more favorable than those who use literal language. In this context credibility may occur because the reader is impressed by the source, which may point out previously unknown similarities between concepts regarding HIV and VCT. The creativeness of the source is appreciated and the reader may return a favorable judgment of communicator credibility. Use of metaphors is also a sign of genius (Ottati et al., 1999). It can be expected that a person using metaphors is judged positively. The use of metaphors can thus make the people telling their stories in the web site look more credible. Credibility in turn can lead to more persuasion.

### Stimulated elaboration

The stimulated elaboration view is linked to two previously mentioned processing theories, which can both explain why the web site with metaphors leads to more agreement with the message than the web site without metaphors.

First the structure mapping view. Some metaphors can be seen as high-quality arguments. The metaphors in this research are placed within a testimonial which support the arguments claim. In order to understand the metaphorical argument, it has to be processed thoroughly (a similar relational structure must be found between the target and the base of the metaphor). Processing the metaphorical argument results in more elaboration on the message and on VCT compared to literal language. If both motivation and ability are high, the effect is a greater number of thoughts supporting VCT.

The salience-imbalance theory also offers an explanation for stimulated elaboration of the message containing a metaphor. In order to understand a metaphor, this theory states that common attributes of target and base have to be brought together to form the common ground. The evaluation associated with the attributes is also part of the ground. The process of forming the common ground requires elaboration of all attributes, which could be used to form this ground, as well as their associated valence. Thus, elaboration leads to more thinking in accordance with what is advocated in the message (reporting for VCT) and as a result to greater persuasion to voluntary report for counseling and testing.

In short, the stimulated elaboration view proposes that a message containing a metaphor requires more elaboration, which will lead to more agreement-with-message thinking and less message counter beliefs. In

evaluating the message, the reader will be more positive about voluntary counseling and testing and HIV compared to literal language use.

### *Superior Organization*

The superior organization theory is derived from the structure-mapping theory and can explain why a message with metaphors is easier to understand. The superior organization theory proposes that a metaphor helps to structure and organize the arguments of a message better than literal language. A metaphor accounts for more associations in memory. When these associations are consistent with the metaphor, the arguments are connected more coherently via the different semantic pathways in memory. Moreover, the associations evoked by the metaphor "highlight" the context of the metaphor making it more salient. The coherent organization and the highlighting of the arguments improve comprehension of the metaphor. This should increase persuasion.

### *Resource Matching*

This perspective accounts for a better integration of the arguments in memory. It proposes that understanding a metaphor requires cognitive elaboration. Maximum elaboration occurs when the cognitive resources of the reader match the resources required to understand the message containing a metaphor. Maximum elaboration leads to maximum comprehension. Too much or too little resources available by the reader disturb comprehension. Cognitive elaboration, which is necessary to understand the metaphor, leads to a better integration of arguments regarding VCT in memory and hence a greater persuasion compared to literal language use. A better integration of message arguments means that a reader can better recall the message arguments after reading the metaphorical message.

### *Pleasure or Relief*

The theory of pleasure or relief is linked to the literacy-primacy view mentioned above. It proposes that a metaphor is a semantic anomaly. Recognizing this anomaly leads to negative tension. When the metaphorical meaning is understood the negative tension is relieved. The reward of pleasure or relief for relieving the negative tension associated with the recognition of an anomaly, leads to reinforcement of the metaphorical meaning and the evaluation associated with it. This theory confirms the claim that highly novel metaphors are more persuasive than low novel ones can be. All metaphors, especially novel ones, account for pleasure or relief of recognition and hence more persuasion.

The 5 theories I have described previously all account for the superiority of metaphorical language over literal language in persuasive messages. It can be expected that metaphorical messages are more persuasive than literal messages.

**1.2.6 The testimonial**

The metaphors will be integrated in testimonials on the web site. Testimonials build on the notion of peer influence or perceived norm to persuade the reader to report for VCT. Testimonials take the human interest of the receiver into account, which has to attract the attention of the reader or to keep his interest (Steehouder, 1992). The source of a testimonial has to be a person whose opinion is valuable to the target group and with whom they can identify. Identification is the first function of a testimonial. The second function is supporting the argument. Testimonials are an extension of the arguments. Strong argumentation influences persuasion in a positive way. It can be expected that testimonials, which support the argument's claim, are also considered persuasive.

A testimonial can be seen a narrative. The character in the testimonial is the narrator and the testimonial itself the narrative. Narratives are capable of influencing a person's behavior. The character in a narrative may function as a role model for the audience. Hoeken (2003) refers to the work of Slater and Rouner (2002) who claim that narratives can influence the beliefs and attitudes underlying the behavior. Even if this character holds beliefs or values that are incongruent with the beliefs or values the audience holds, the audience may still identify itself with the character. Furthermore, the more absorbed the audience is, the less likely it is to generate counterarguments and the more likely it is to accept the beliefs and values indirectly expressed in the narrative. When a testimonial is regarded as a narrative the character in the testimonial can influence the reader, who identifies himself with the character. This accounts for the persuasive effect of the testimonial.

Regarding testimonials Hoeken (1998, 147-148) makes a distinction into three types of characters:

1. *A famous person.* Famous people are real, their expertise on a subject is clear and some famous people are seen as reliable. This makes them good witnesses
2. *An unknown expert.* In this type of testimonial the expertise of a person is the crucial factor.
3. *Man/women in the street.* In this type of testimonial experience is the crucial factor. It is important that the reader can identify him or herself with the witness.

In the web site a combination of the second and third option: *experience experts* is chosen.

According to the Elaboration Likelihood Model the persuasive power of testimonials depends mostly on peripheral processing. One of the most important heuristics is: "A credible source is always right". The same source can be regarded as both credible and not credible depending on the evaluation of the reader. The evaluation of the credibility of the source is determined by two factors: expertise of the source and reliability of the source (Hoeken, 1998). The more reliable and expert a source is the more credible it will be regarded. The degree of perceived reliability and expertise differs per person. The reliability of the source, even when the source is regarded an expert, is often perceived as low because the source has an interest in the acceptance of the message. In this respect testimonials can be used to make the source more reliable. The character in the testimonial will gain reliability because he or she has no interest in the acceptance of the message and is independent.

Another heuristic people sometimes use is: "*a nice source is more credible than an unpleasant source*". Hoeken and Van Wijk (1997) found evidence that supports this heuristic.

Hoeken & Van Wijk (1997) claim that the credibility of the source is most important in those cases where the reader is not involved. When the reader is more involved, characteristics of the source have less influence. Furthermore they claimed that a larger perceived resemblance with the source could increase the expertise when the reader considers himself to be capable of giving a professional judgment about the subject.

Central processing of testimonials will occur when the reader is motivated and able to think about the content of the testimonial.

In the next section the research questions will be presented

## 1.3 RESEARCH QUESTIONS

The first aim of this research is to measure the effect of metaphors in a web site which intends to persuade people to voluntary report for Counseling and testing. The second aim is to measure the differences in persuasive power of the web site and metaphors between South Africa and the Netherlands.

*The effect of metaphors*

The 5 perspectives on the persuasive power of metaphor (1.2.5) all account for the superiority of metaphorical language over literal language. The first hypothesis can be deduced from this finding: The web site with metaphors will be evaluated more positively than the web site without metaphors. In line with these five perspectives, the superiority of metaphors has consequences for the persuasiveness of the web site on VCT. In accordance with the communicator credibility perspective the source of the web site with metaphors is expected to be more credible. In accordance with the stimulated elaboration view, the web site with metaphors will lead to better integration of message arguments and less message counter beliefs compared to the web site without metaphors. The resources matching perspective suggests that arguments in a web site with metaphors are better recalled. In line with this perspective, McQuarrie and Mick (1996) claimed that tropes are more memorable than literal arguments. In accordance with the superior organization view a web site with metaphors is better understood than a web site without metaphors.

Metaphors are capable of creating vivid and suggestive images in mind and it can add interest to a communication. (Ottati et al ,1999). This will result in a more appealing web site and testimonials when metaphors are integrated.

Metaphors have the capacity to influence evaluation which form the basis of beliefs in the integrated model of behavioral prediction behavior (Sopory and Dillard (2002). Metaphors that influence the evaluations in the advocated direction create stronger beliefs regarding reporting for VCT. Stronger beliefs result in stronger attitudes and stronger intentions. In summary, the hypothesis regarding the effect of metaphors are presented next.

1. The web site with metaphors will be evaluated more positively than the web site without metaphors.
   a. *The source will be more credible in the web site with metaphors compared to the web site without metaphors.*
   b. *The web site with metaphors will lead to better integration of message arguments compared to the web site without metaphors.*
   c. *The web site with metaphors will be better understood than the web site without metaphors.*
   d. *The web site with metaphors will be more appealing than the web site without metaphors.*
   e. *The web site with metaphors will arouse more empathy than the web site without metaphors.*
   f. *Testimonials with metaphors are more interesting than testimonials without metaphors.*
2. (Behavioral) beliefs, attitudes and intentions in the web site with metaphors will be influenced more positively compared to the web site without metaphors

*The effect of cultural differences*

Sears et al. (2000) and Le Pair et al. (2000) showed that differences in culture can directly effect the evaluation of certain design choices (1.2.1). It can be expected that the source and the information are evaluated differently by South African and Dutch students. These differences in evaluation of information and source can result in a difference in beliefs, attitudes and hence intentions.

There are two reasons why it can be expected that Dutch students are more influenced by metaphors than South African students. Literacy level of South Africans is low and this could see to it that metaphors (and the rest of the web site) are not fully processed and understood. Moreover, South Africans are more involved in VCT and HIV (1.2.1). It can be expected that metaphors in this context have less influence on them, since they are already inclined to read the web site thoroughly. The amount of processing will account for better recall of the arguments in the web site for South Africans.

South Africans are more community-oriented than the Dutch. As a result, normative beliefs play a more important role in South Africa compared to the Netherlands. It can be expected that testimonials, which makes use of peer influence, are rated higher in South Africa than in the Netherlands.

Finally, the perceived personal relevance, the need to discuss VCT with a partner, and the need for cognition (1.2.4) can influence motivation and hence the amount of processing for both nationalities.

3.  Evaluation of source and information will differ for South African and Dutch students.
    a.  *South African students will better recall the arguments in the web site than Dutch students.*
    b.  *Testimonials are rated higher in South Africa than in the Netherlands.*
    c.  *Both South African and Dutch students evaluate the testimonials with metaphors higher than testimonials without metaphors.*
    d.  *Both South African and Dutch students evaluate the web site with metaphors higher than the web site without metaphors.*
4.  South African and Dutch students will differ in their beliefs, attitudes and intentions regarding VCT after reading the web site.

## 2     <u>DESIGN OF THE EXPERIMENT</u>

### 2.1     <u>MATERIAL</u>

In this section, the design of the web site used in the experiments and the elements on the web site will be discussed. The web site was developed both by Iris Nieuwboer (design) and Anouk van Zandvoort (texts).

#### 2.1.1     Design of arguments

*Choice of arguments*

The integrative model of behavioral prediction (Fishbein & Yzer, 2003) can be used to identify the determinants of Voluntary Counseling and Testing (see appendix 2). These determinants can be seen as the specific beliefs that need to be addressed to change or maintain a given behavior. The arguments were composed based on these determinants. The arguments can be found in appendix 3 (Arguments and testimonials). One of the arguments related to the determinant *low awareness of the psychosocial benefits* is *knowing your result can reduce the stress associated with uncertainty*.
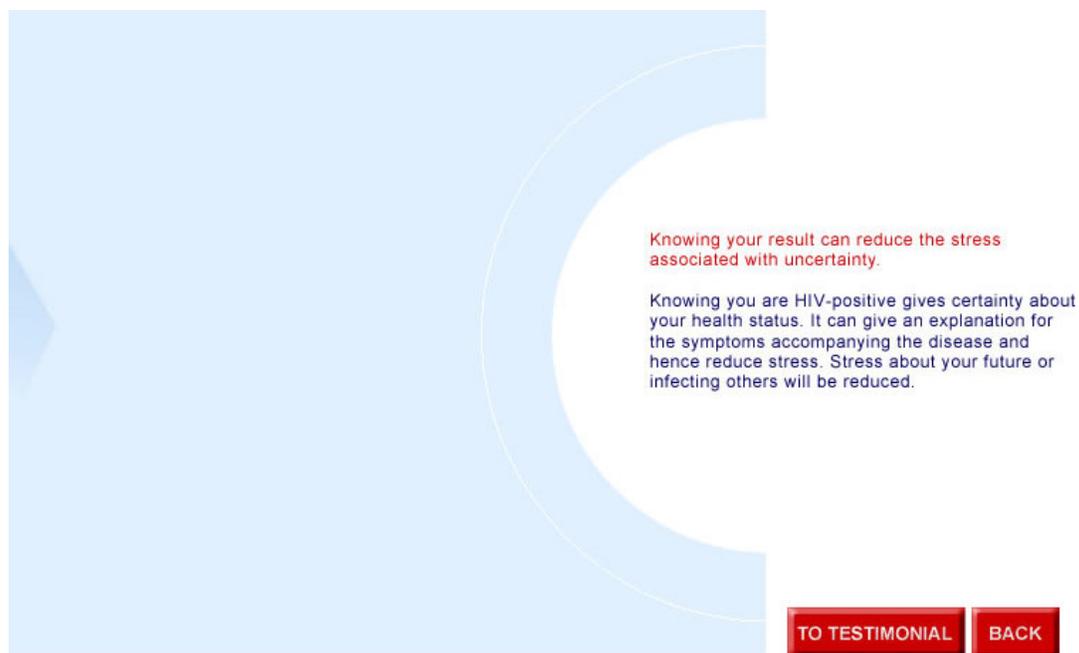


Figure 3: argument: reduce uncertainty

*Formulation of arguments and testimonials*

The message can be formulated positively, negatively or neutrally. Positive messages emphasize the positive consequences that certain behavior can have. Negative messages stress the negative consequences of neglecting the behavior. Both positive and negative messages lead to the desired behavior (Gutteling, 1993). Neutral messages reach the opposite effect. The nature of the subject (HIV) gives priority to a positive formulation of the arguments. A negative formulation of the arguments can cause anxiety or fear. Increases in fear can disrupt the

ability of persons to process information (Millar & Millar, 1998). Hoeken & Geurts (2003) showed that testimonials with a positive ending, meaning testimonials in which a person succeeds in carrying out the desirable behavior, leads to a more positive intention to actually perform the behavior. This is called the increase of self-efficacy: "*If they can do it, I can do it*".  Based on this research, the arguments were formulated positively.

Gutteling (1993, 82) claims that the judgment of the consequences of a certain action can be based on time perspective of the arguments used in a message. When a negative consequence occurs further away in time, people feel less concerned and this consequence is judged less seriously. To ensure that the readers judge the consequences seriously it is important to formulate the arguments and testimonials in terms of nearness. As an example to illustrate nearness a part of Deidre's testimonial: "*I knew that the risk of being infected myself was high. Of course, we talked about it and we will use a condom from now on....*"

To make the arguments more personal in a way that the readers can identify themselves with the arguments the reader is directly addressed by using *you* instead of *people* or *a person.*

*Ordering of arguments and testimonials*

The arguments, accompanied by the testimonials, are all placed in a circle (see figure 4).
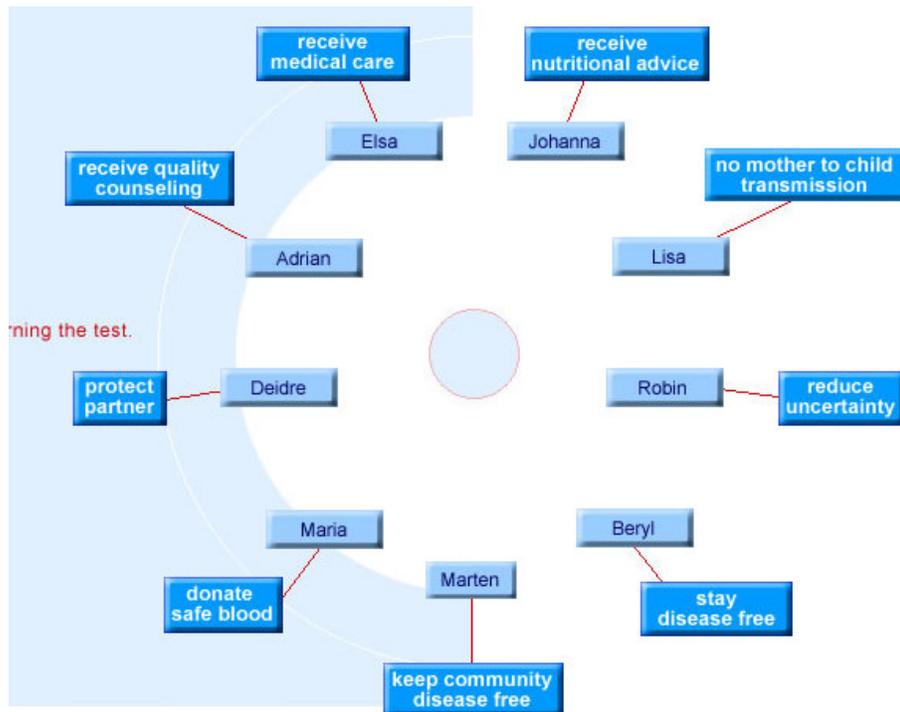


**Figure 4**: the ordering and design of arguments and testimonials

A circle has no beginning and no end. This will prevent the subject from clicking in a fixed order. From the centre of the circle, each argument-testimonial duo has an equal chance to be chosen.

The arguments can be divided into three categories: *VCT and personal health* (3 arguments), *VCT and psychological self* (2 arguments) and *VCT and the relationship with others* (4 arguments). Five arguments are individualistic and four are related with the community. The arguments were placed randomly in the circle.

### 2.1.2    Design of testimonials

*Content*

All testimonials are attached to an argument and its content is related to the content of this argument. The text of the testimonials can be found in appendix 3. As an example the testimonial of Deidre (protecting partner).
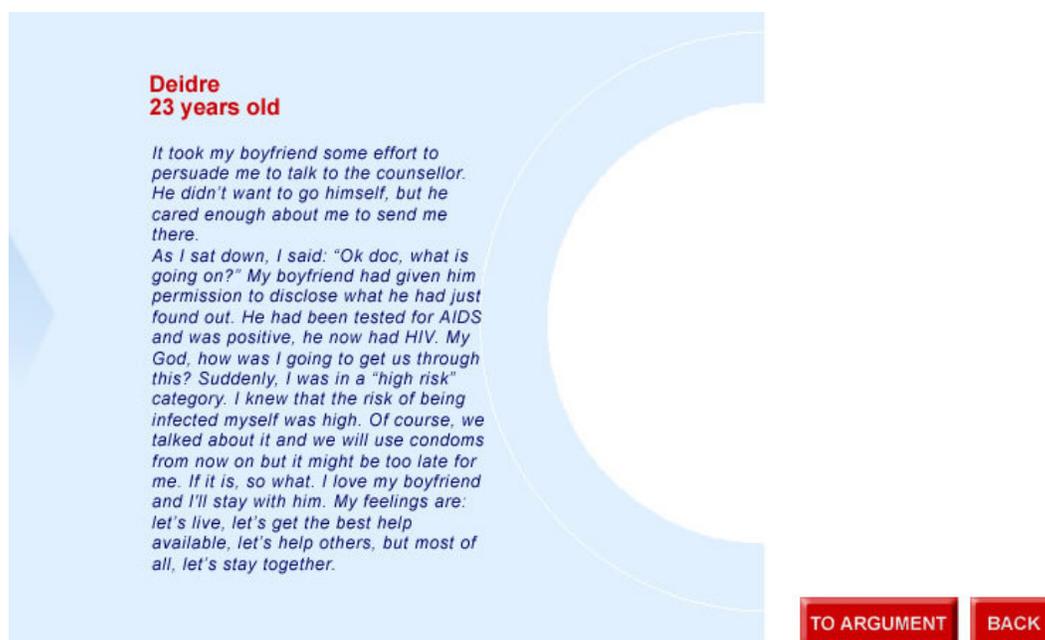


**Deidre**
**23 years old**

It took my boyfriend some effort to persuade me to talk to the counsellor. He didn't want to go himself, but he cared enough about me to send me there.
As I sat down, I said: "Ok doc, what is going on?" My boyfriend had given him permission to disclose what he had just found out. He had been tested for AIDS and was positive, he now had HIV. My God, how was I going to get us through this? Suddenly, I was in a "high risk" category. I knew that the risk of being infected myself was high. Of course, we talked about it and we will use condoms from now on but it might be too late for me. If it is, so what. I love my boyfriend and I'll stay with him. My feelings are: let's live, let's get the best help available, let's help others, but most of all, let's stay together.

**TO ARGUMENT**    **BACK**

**Figure 5**: testimonial Deidre

The testimonials were both existing testimonials on the Internet and invented testimonials. They are written from the point of view of *experience experts*. Physical proximity, age, and lifestyle similarities determine the degree of identification with a peer (Maxwell, 2002). The stories come from young people who are in a situation where they have to choose whether or not to apply for VCT. These situations are recognizable for university students. Readers of the web site can identify themselves with these "experts". To stimulate this identification, the testimonials were written from the *I-perspective*.

*Structure*

Petty, Wheeler and Tormala (2000) claim that increasing the number of message sources can stimulate information-processing activity especially when the sources are viewed as providing independent assessments of

the issue. Adding multiple testimonials to the web site can thus increase motivation to scrutinize the arguments. The length of the text is for all testimonials about the same. This length was kept short to hold the reader's attention.

### 2.1.3    Design of metaphors
*Content and target*

Ottati et al (1999) proved that the content of a metaphor could increase or decrease motivation to systematically scrutinize a persuasive message.  A metaphor, which is attractive and interesting to the listener, stimulates processing. A metaphor that bores the listener will have the opposite effect. This effect is the result of the state of interest an attractive metaphor causes and the state of disinterest a boring metaphor causes. The state a person is in determines how the whole message is perceived. The content of a metaphor can thus increase or decrease motivation to elaborate on a persuasive message depending on the interests of the listener. The target of the metaphor is another factor of meaning. The target can be familiar to a greater or lesser extent depending on the reader. Higher prior knowledge of the target allows readers to better organize the target-base linkages. A higher familiarity of target should thus lead to greater persuasion of the message. The target in the metaphor: *Donating blood is like replacing an old battery with a new one* is *donating blood.* Both South Africans and Dutch students are familiar with this subject.

All metaphors are composed in a way to make them interesting for and applicable to both South African and Dutch students. The metaphors can be found in appendix 3, in which the metaphors are highlighted.

*Placement*

A metaphor is most persuasive when it is used at the beginning of the message. A metaphor in the introduction can immediately help to structure the arguments (Sopory & Dillard, 2002). The metaphors in the web site are placed (when possible) in one of the first sentences of the testimonial.

*Extendedness*

Sopory and Dillard (2002) claim that a non-extended metaphor is more persuasive than an extended metaphor. *Non-extended* means that the base is used to create only one metaphor. Extended metaphors use one base to generate multiple metaphors. All metaphors in the web site are non-extended.

*Number*

A single metaphor is more persuasive than greater numbers. This result is concluded from the research of Sopory and Dillard (2002). In their research Sopory and Dillard used texts which consisted of an introduction, body, and a conclusion. All texts were in one piece, unlike a web site where the reader is offered pieces of text, divided over different pages. In this experiment each testimonial contains one metaphor.

*Novelty*

Metaphors can be divided into novel and conventionalized (or "death") metaphors. Novel metaphors create new information about the target. For example: *Donating blood is like replacing an old battery with a new one*. This metaphor gives more information on what donating blood can mean for a person who needs it. A death metaphor no longer deviates from expected language use, because it has become expected language. The meaning of the metaphor is now conventionalized, for example: the *foot* of the mountain or a *death* metaphor. High novel metaphors produce less counterarguments, are more credible, better structured and arguments are better organized. This enhances more elaboration and persuasion as a result.

Novel metaphors are interpreted as comparisons and conventional metaphors as categorizations. When metaphors become increasingly conventional, there is a shift from comparison to categorization. Novel figurative statements are preferred in the simile form ("*is like*") rather than the categorization form (Gentner et al., 2001, 230-231). This is because novel figurative statements are easier to process in the simile form (comparison) than in the metaphor form (categorization). A simile invites comparison processing while a metaphor invites subjects to search for a pre-stored category in memory. Such a pre-stored category does not yet exist for novel figurative statements. In figure 6 the shift from novel to conventional metaphor is visualized.
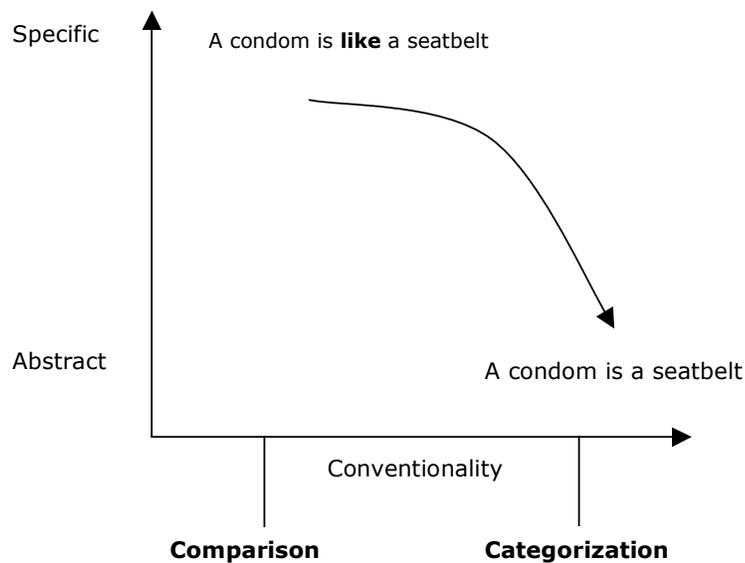


**Figure 6**: The career of metaphor from novel to conventional metaphor (Gentner et al., 2001)

The metaphors in the web site are novel and written in the simile form.

**2.1.4** **Design of the rest of the web site**

*Content*

Besides the page with circle with the paired arguments and testimonials, the web site has three more pages: *home*, *HIV/AIDS information*, and *VCT information* (see appendix 4: the web site). These three pages form the context in which the arguments and testimonials are placed. Figure 7 shows the homepage of the web site.
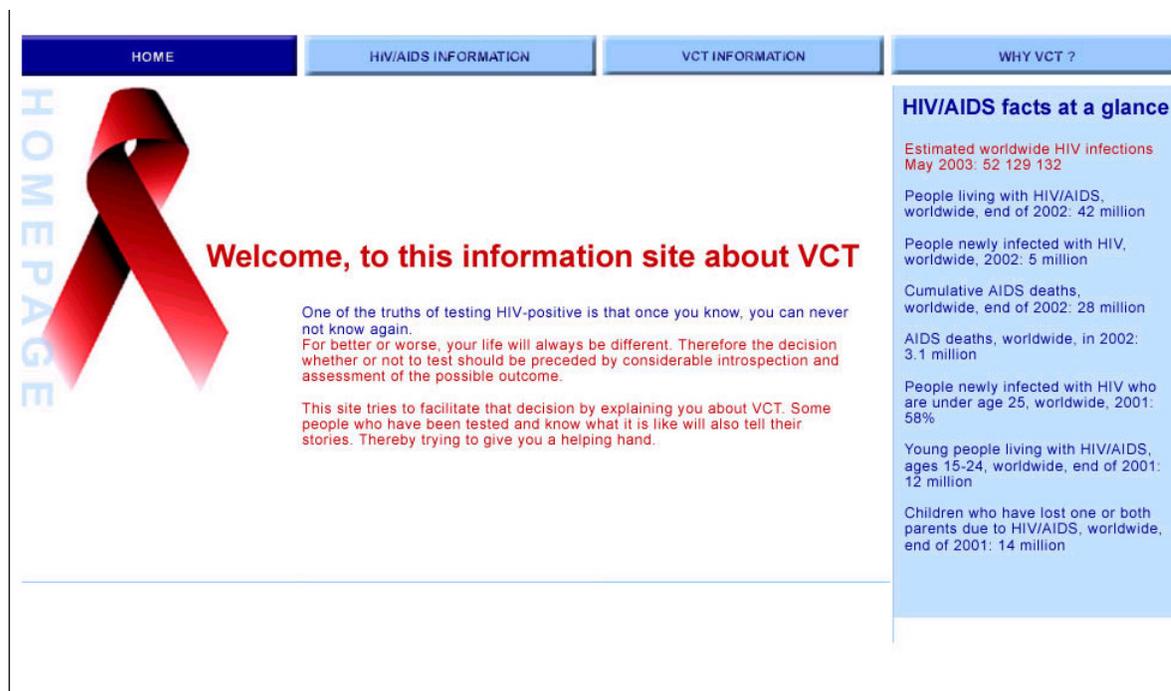


**Figure 7**: homepage of the web site

Throughout the whole web site the literacy level of SA is taken into consideration. Gangla (2003) already pointed out in her research proposal that the literacy level in South Africa is low.

The whole web site was written in English to make comparison between the Netherlands and South Africa possible. English is not the native language of either country, but in both countries courses at university level are given in English. The low literacy level of South African students and English not being the native language of either country resulted in a simple and clear formulation of the texts on the web site and the items in the questionnaire. As an example the argument *protect partner: If you know you are HIV positive you can protect your sexual partners to remain disease free. Adjustments to your life style and sex life can protect your sex partners from infection.*

*Structure*

The web site was built according to the principles of Nielsen (2001) (see appendix 5: ten usability heuristics). One of these heuristics is: *Aesthetic and minimalist design:* dialogues should not contain information which is irrelevant or rarely needed. To focus the reader's attention on the arguments and testimonials, no distracting elements (such as pictures and animation) were integrated in the web site.

## 2.2    SUBJECTS

The people that participated in the experiment were all university students (University of Tilburg, University of South Africa, and University of Pretoria). The number of South Africans that participated in the experiment was 39 compared to 31 Dutch students. The average age of the target group was 22 years. The youngest was 17 and the oldest was 29. The average age of South African students was lower (21.3) than that of Dutch students (23.0).

The number of male students was 38 and the number of female students 32. 34 students received the version of the web site *with* metaphors and 36 students received the version of the web site *without* metaphors.

**Table 1**: Division of nationality and gender to version

*With metaphors* (N=34)

| | Male | Female |
|---|---|---|
| **South African** | 10 | 9 |
| **Dutch** | 8 | 7 |

*Without metaphors* (N=36)

| | Male | Female |
|---|---|---|
| **South African** | 11 | 9 |
| **Dutch** | 9 | 7 |

## 2.3    EXPERIMENTAL DESIGN

This research intends to explore a certain behavior (reporting for VCT). For that purpose, an experiment with a questionnaire afterwards was designed. The experiment was held both in the Netherlands and South Africa. The experiment had a posttest-only control group design. The experimental group had to take a look at the manipulated version of the web site (*with* metaphors) and the control group at the objective version (*without* metaphors).

The subjects were approached by the experimenter and asked to participate in the experiment. Each subject was randomly assigned to the experimental group or the control group. Randomization was based on global control (frequencies of man, woman and South African, Dutch is equal for both versions, see table 1). The results of the control group and the experimental group were compared afterwards in a between subject design.

## 2.4    <u>INSTRUMENTATION</u>

The questionnaire (see appendix 6: the questionnaire) was given to the subject after reading the web site. It consisted of 7 points semantic differentials, Likert scales and one open question. All semantic differentials were presented on one page. Each time, the positive pole was placed on the left and the negative pole on the right. This was done to avoid mistakes for not reading properly. An example of a semantic differential is:

| The source of the web site seems: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Honest | 1 | 2 | 3 | 4 | 5 | 6 | 7      Dishonest |

The semantic differentials were followed by the Likert scales. The Likert scales were formulated both negatively and positively to avoid automatic answering and to hold the subject's attention. An example of a Likert scale is:

| The information on the web site evokes imagination. | | | | | | | |
|---|---|---|---|---|---|---|---|
| I totally agree | 1 | 2 | 3 | 4 | 5 | 6 | 7      I totally disagree |

The questionnaire was the same for both nationalities. A problem with intercultural testing can be that some cultures are more inclined to use scale extremes compared to other cultures (Hoeken & Korzilius, 2001). This is the result of experience, interpretation of the numbers, and the use of scale extremes. This problem was solved by using a verbal label for each scale point.

       The dependent factors in this experiment will be discussed next.

### *Evaluation of the source*

Evaluation of the source was divided into five categories; credibility, appeal, expertise, empathy, and formality. Each category consisted of two semantic differentials, and two Likert scales, one formulated positively and one formulated negatively. Only the category formality consisted of three semantic differentials.

### *Evaluation of the information*

Evaluation of the information was divided into four categories; appeal, understandability, appropriateness, and persuasive power. The category appeal consisted of four semantic differentials and four Likert scales, two formulated positively and two formulated negatively. Understandability consisted of two semantic differentials and two Likert scales, one formulated positively and one formulated negatively. Appropriateness and persuasive power both consisted of two semantic differentials, and two Likert scales, both formulated positively.

### *Persuasive power*

Evaluation of the information was divided into three categories; beliefs, attitudes, and intentions. Each category consisted of four Likert scales each. For attitudes, all scales were formulated positively. For beliefs and

intentions, two scales were formulated positively and two negatively. Attitude was measured with only two Likert scales, one formulated positively and one negatively.

*Evaluation testimonials, arguments, and rest of information*

Testimonials, arguments and rest of information were measured with a rating question ranging from 1 till 10 (with 10 being the highest). The question for testimonials read:

| I rate the stories with a (with 10 being the highest) |
|---|
| 1   2   3   4   5   6   7   8   9   10 |

*Integration of message arguments*

The integration of message arguments or the memorability of the arguments was measured with an open question. This question read:

| Which of the reasons (pro VCT) presented on the web site can you recall? |
|---|
| Please write them down: |

*Extra dependent variables*

Five more questions were added to the questionnaire, which could not be assigned to an existing variable. These five questions (Likert scale) were all formulated positively:

| |
|---|
| 1.  I feel personally addressed when I read the web site |
| 2.  This site makes the concept of VCT clearer |
| 3.  This site convinced me of the necessity of VCT |
| 4.  The style of the web site fits the topic |
| 5.  The information on the web site gave me a more positive perception on VCT. |
| I totally agree   1   2   3   4   5   6   7   I totally disagree |

*Involvement, need for cognition, and peer influence*

Furthermore, three independent variables were integrated in the web site; involvement, need for cognition, and peer influence. These three factors can influence the judgment of the dependent variables and therefore need to be measured. Involvement and need for cognition were measured with four Likert scales, two formulated negatively and two formulated positively. Peer influence was measured with two Likert scales, one formulated negatively and one formulated positively.

**2.5     PROCEDURE**

The subjects first had to read the assignment (see appendix 7: the assignment), then the web site (see appendix 4) and afterwards fill out the questionnaire (see appendix 6).

The experiment was first conducted in the Netherlands in May and June 2003. In South Africa the experiment was conducted in July 2003. In the Netherlands 21 subjects were asked in the library of the University of Tilburg to participate in the experiment. The experiment was also held in the library on one of the computer there. Ten subjects participated in the experiment at home at a PC. In South Africa, the experiment was held at the coffee room at the University of Pretoria (30 subjects), at the ELC (Electronic Learning Centre)-lab at the University of South Africa (UNISA) (4 subjects) and at the library of UNISA (5 subjects). Except for the ELC-lab, all experiments were conducted on a laptop.

At the start of the experiment, the subjects were told about the aim of the research (*Improving HIV documentation*). Then the experimenter explained the experiment to the subject. He emphasized that the subject had to read everything and he pointed out the circle on the last page of the web site. He also told the subject that there was no time limit and questions could be asked at all times. The subjects also received a form with the assignment in which the experiment and its purpose were explained (see appendix 7). At the end of the experiment the experimenter, who was present during the experiment, thanked the subject for participating.

The procedure of the experiment was the same for all subjects. The only differences were the type of computer (PC or laptop) the experiment was conducted on and the setting. The library at the UvT and the coffee room at UP were noisy. However, students were placed in a corner to minimize noise. Another possibly disturbing factor was the inexperience with computers of students at UNISA. Four times the experiment leader had to explain how the mouse worked and how the web site was built up.

It took the average student about 30 minutes to read the web site and to fill out the questionnaire. At UNISA, this time could accumulate to 2 hours.

**2.6     DATA PROCESSING**

For the processing of the data, the statistical program SPSS 11.0 was used. For the Likert scales and the semantic differentials *independent samples T test* and *one way ANOVA/univariate analysis of variance* were used. Other analyses that were conducted were correlations, Varimax rotations, and reliability analyses.

## 3    RESULTS

In this chapter, the results of the experiment will be discussed in an attempt to answer the hypothesis presented in section 1.3.

### 3.1    THE EFFECT OF METAPHORS

*Total evaluation web site*

The first hypothesis stated: *The web site with metaphors will be evaluated more positively than the web site without metaphors.* To answer this hypothesis, all questions under *evaluation of the source* and *evaluation of the information* were considered. The total number of questions was 43. The questions were divided into semantic differentials and Likert scales. The Likert scales were formulated both positively and negatively. For all the semantic differentials the positive pole was placed on the right and the negative pole on the left of the scale. The internal consistency of the scales was good (*evaluation of the source*: Cronbach's alpha = .85, *evaluation of the information*: Cronbach's alpha = .84). Table 2 shows the relations between the evaluation of source and information and version of web site.

**Table 2**: Mean score on evaluation of source and information as a function of version of web site (score is minimum 1, maximum 7; standard deviation between brackets).

|  | **With metaphor** (n=34) | **Without metaphor** (n=36) |
|---|---|---|
| **Evaluation source** | 4.62 (.61) | 4.64 (.55) |
| **Evaluation information** | 4.54 (.51) | 4.45 (.66) |

Evaluation of the source and evaluation of the information do not differ significantly for the two versions (evaluation of source: $t(68)=.17$, $p=.86$, evaluation of information $t(68)=.70$, $p=.48$)

At the end of the questionnaire, the subjects had to rate the arguments and the information. Table 3 shows the average ratings of arguments and information for each version of the web site.

**Table 3**: Average rating of arguments and information as a function of version of web site (score is minimum 1, maximum 10; standard deviation between brackets).

|  | **With metaphors** (n=34) | **Without metaphors** (n=36) |
|---|---|---|
| **Rating arguments** | 8.27 (1.33) | 8.14 (1.15) |
| **Rating information** | 8.00 (.97) | 7.42 (1.13) |

This table indicates that information was rated higher in the version with metaphors compared to the version without metaphors ($t(67)=2.29$, $p<.05$). The difference in rating for arguments for the two versions was not significant ($t(67)=.45$, $p=.66$).

*Web site appeal*

In the questionnaire *appeal* was divided into *appeal of information* and *appeal of source*. To test whether the web site with metaphors is more appealing than the web site without metaphors these two factors were combined. The internal consistency of these two factors was adequate (Cronbach's alpha = .79).

*Source credibility*

According to Hoeken (1998), credibility of the source is determined by two factors: expertise of the source and reliability of the source. To test whether the web site with metaphors is more credible than the web site without metaphors, the questions under *credibility of information* and *expertise of source* were combined. The internal consistency of these two factors was adequate (Cronbach's alpha = .74).

*Source empathy*

To test whether the web site with metaphors will account for more empathy than the web site without metaphors, both the questions under *empathy* and *formality* were used. Both factors indicate a degree of personalization of the the source. The internal consistency of these two factors combined was adequate (Cronbach's alpha = .71). Table 4 shows appeal, credibility and empathy as a function of version of web site.

**Table 4**: Mean score on appeal of web site, mean score on credibility of source, and mean score on empathy as a function of version of web site (score is minimum 1, maximum 7; standard deviation between brackets).

|  | **With metaphor** (n=34) | **Without metaphor** (n=36) |
|---|---|---|
| **Appeal** | 4.63 (.56) | 4.53 (.67) |
| **Credibility** | 4.57 (.68) | 4.68 (.61) |
| **Empathy** | 4.59 (.67) | 4.62 (.63) |

Total appeal of the web site with metaphors did not significantly differ from total appeal of the web site without metaphors (t(68)=.65, p=.52). The source of the web site with metaphors and the source of the web site without metaphors are considered equally credible (t(68)=.71, p=.48). Neither for empathy a difference between the two versions was found (t(68)=.19, p=.85).

*Understandability of information*

With the questions under the factor *understandability of the information* and the question *"This site makes the concept of VCT clearer"* the hypothesis: *The web site with metaphors will be better understood than the web site without metaphors* will be tested. The internal consistency of these two factors combined was insufficient (Cronbach's alpha = .57). Each of the items will thus be discussed separately.

> *a. Simple information*        *d. Vague information*
> *b. Clear information*        *e. Concept of VCT clearer*
> *c. Comprehensive information*

Table 5 shows the relation between a, b, c, d, and e and the version of the web site.

**Table 5**: Mean score on *a, b, c, d, e* as a function of version of web site (score is minimum 1, maximum 7; standard deviation between brackets).

| *Information:* | **With metaphors** (n=34) | **Without metaphors** (n=36) | **Significance** |
|---|---|---|---|
| **Simple** | 5.16 (1.05) | 4.86 (1.02) | t(66)=1.18, p=.24 |
| **Clear** | 5.23 (.85) | 5.19 (.82) | t(65)=.15, p=.88 |
| **Comprehensive** | 5.41 (.61) | 5.14 (.68) | **t(68)=1.76, p<.05** |
| **Vague** | 4.64 (1.25) | 4.56 (1.30) | t(67)=.26, p=.79 |
| **VCT clear** | 5.32 (.59) | 5.03 (1.11) | t(68)=1.38, p=.17 |

The table indicates that only for comprehensive information a significant difference was found between the two versions of the web site (t(68)=1.76, p<.05).

*Beliefs, attitudes, and intentions*

To test whether arguments and testimonials in the web site with metaphors are more persuasive than the arguments and testimonials in the web site without metaphors, beliefs, attitudes and intentions were examined. A more persuasive web site will result in stronger beliefs, attitudes and intentions.

The internal consistency of the questions under the factor beliefs was moderate (Cronbach's alpha = .63), the internal consistency of the questions under attitudes (without the question: *I belief knowing your HIV status is better than not knowing it*) was moderate (Cronbach's alpha = .64) and finally, the internal consistency of the questions under intentions (without the question: *I would consider telling my partner if I had HIV*) was also moderate (Cronbach's alpha = .63). Table 6 represents the beliefs, attitudes and intentions of the students in relation with version of web site.

**Table 6**: Mean score on beliefs, attitudes and intentions as a function of version of web site (score is minimum 1, maximum 7; standard deviation between brackets).

| | **With metaphors** (n=34) | **Without metaphors** (n=36) |
|---|---|---|
| **Beliefs** | 4.51 (.88) | 4.60 (.90) |
| **Attitudes** | 4.91 (.99) | 5.00 (.80) |
| **Intentions** | 4.34 (1.12) | 4.22 (1.38) |

The beliefs, attitudes, and intentions of the students who were presented the web site with metaphors did not differ significantly from the students who evaluated the web site without metaphors (beliefs: t(68)=.42, p=.67, attitudes: (t(68)=.44, p=.67, intentions: t(68)=.40, p=.69).

Table 7 shows the correlations between the factors beliefs, attitudes, and intentions.

**Table 7**: Correlations between beliefs, attitudes, and intentions.

|  | **Beliefs** | **Attitudes** | **Intentions** |
|---|---|---|---|
| **Beliefs** | / | .66* | .60* |
| **Attitudes** |  | / | .55* |
| **Intentions** |  |  | / |

Note: *p<.01

Beliefs, attitudes, and intentions were all strongly correlated. This means that intentions can be predicted based on beliefs and attitudes and that attitudes can be predicted based on beliefs. As an example, the strong correlation between attitudes and beliefs is expressed in figure 8.
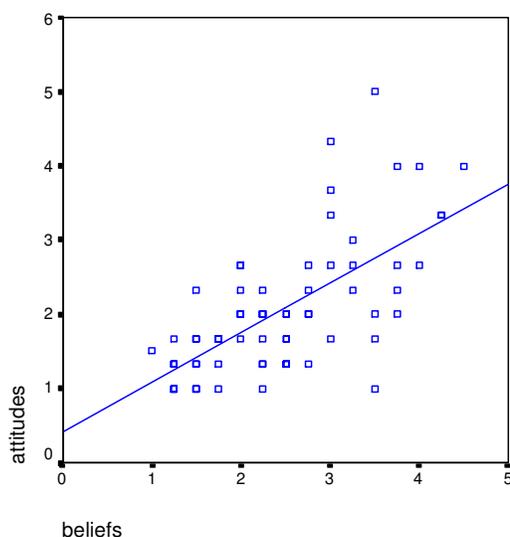


**Figure 8**: Correlation between beliefs and attitudes.

This positive correlation indicates that attitudes can be predicted based on beliefs. Stronger beliefs result in stronger attitudes.

*Appeal testimonials*

Besides rating information and arguments, the subjects were also asked to rate the testimonials. Table 8 shows the average rating on testimonials for each version of the web site.
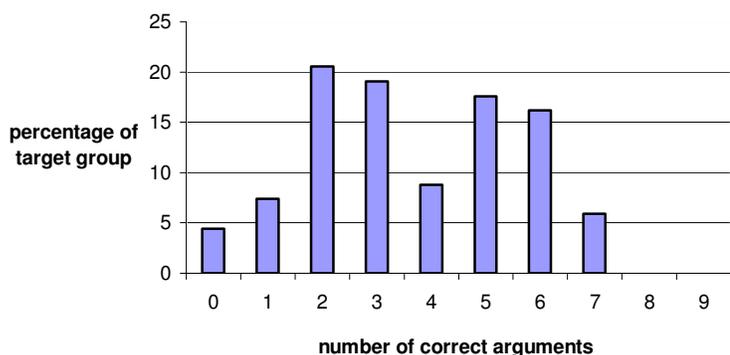
**Table 8**: Average rating on testimonials as a function of version of web site (score is minimum 1, maximum 10; standard deviation between brackets).

|  | **With metaphors** (n=34) | **Without metaphors** (n=36) |
|---|---|---|
| **Rating testimonials** | 7.91 (1.10) | 7.64 (1.18) |

No significant difference was found on rating of testimonials between the two versions (t(67)=.98, p=.33).

*Integration of message arguments*

At the end of the questionnaire the students had to write down the arguments they could remember. It was hypothesized that that *the web site with metaphors would lead to a better integration of message arguments compared to the web site without metaphors.* Even though the metaphors were a part of the testimonials instead of the arguments, arguments were more memorable since one of the functions of a testimonial is to support the arguments. Only the arguments the students remembered that were correct were taken into consideration. The division of the number of correct arguments can be seen in figure 9.



**Figure 9**: Number of correct arguments recalled.

This figure shows that most students remembered 2, 3, 5, or 6 arguments.

Besides correct arguments, students also gave incorrect answers. Per version the number of correct and incorrect answers will be given (table 9)

**Table 9**: Mean number of correct (score is minimum 1, maximum 9; standard deviation between brackets) and incorrect arguments recalled (score is minimum 1, maximum infinitive; standard deviation between brackets) as a function of version of web site.

|  | **With metaphors** (n=33)/(n=34) | **Without metaphors** (n=35)/(n=36) |
| --- | --- | --- |
| **Correct arguments** | 3.48 (1.96) | 3.86 (1.90) |
| **Incorrect arguments** | .32 (.64) | .44 (.74) |

Version of web site neither had an effect on recall of correct nor incorrect arguments. (Correct arguments: t(66)=.80, p=.43); incorrect arguments (t(68)=.73, p=.23).

**3.2     THE EFFECT OF CULTURAL DIFFERENCES**

It was hypothesized that a difference could be found between the answers of South African and Dutch students. In the next subsections and tables (10-18) these differences are expressed.

*Evaluation source and information*

The first difference found between the two nationalities is on evaluation of the source and evaluation of the information. Table 10 shows the evaluation of source and the evaluation of information for the two versions and the two nationalities.

**Table 10**: Mean score on evaluation of source and evaluation of information as a function of nationality and version of web site (score is minimum 1, maximum 7; standard deviation between brackets).

|  | **With metaphor** (n=34) | | **Without metaphor** (n=36) | |
| --- | --- | --- | --- | --- |
|  | **South African** (n=19) | **Dutch** (n=15) | **South African** (n=20) | **Dutch** (n=16) |
| **Evaluation source** | 4.86 (.37) | 4.31 (.71) | 4.89 (.44) | 4.34 (.53) |
| **Evaluation information** | 4.76 (.48) | 4.28 (.38) | 4.74 (.57) | 4.07 (.57) |

For the two versions of the web site, the source and the information were both evaluated more positively by South African students compared to Dutch students (version with metaphor: evaluation source (t(32)=2.96, p<.05); version with metaphor: evaluation information (t(32)=3.14, p<.05); version without metaphor: evaluation source (t(34)=3.43, p<.05); version without metaphor: evaluation information (t(34)=3.43, p<.05)).

*Appeal, credibility and empathy*

Three other aspects in which the two nationalities differ are appeal, credibility and empathy.  Table 11 indicates for each version and nationality the score on appeal, credibility, and empathy.

**Table 11**: Mean score on total appeal and credibility as a function of version of web site and nationality (score is minimum 1, maximum 7; standard deviation between brackets).

|  | **With metaphor** (n=34) | | **Without metaphor** (n=36) | |
| --- | --- | --- | --- | --- |
|  | **South African** (n=19) | **Dutch** (n=15) | **South African** (n=20) | **Dutch** (n=16) |
| **Appeal** | 4.90 (.51) | 4.27 (.42) | 4.82 (.52) | 4.17 (.68) |
| **Credibility** | 4.83 (.47) | 4.24 (.77) | 4.87 (.56) | 4.44 (.59) |
| **Empathy** | 4.83 (.47) | 4.30 (.79) | 4.87 (.52) | 4.31 (.64) |

South African students rate appeal as well as credibility and empathy higher than Dutch students. This result applies to both versions. (version with metaphor: total appeal (t(32)=3.87, p<.01); version with metaphor: credibility (t(32)=2.74, p<.05); version with metaphor: empathy (t(32)=2.46, p<.05): version without metaphor: total appeal (t(34)=2.26, p<.01) ; version without metaphor: credibility (t(34)=2.25, p<.05) version without metaphor: empathy (t(34)=2.9, p<.01)).

*Understandability of information*

The effect of cultural differences on understandability of information could only be found on two aspects; *simple* and *comprehensive* information (see table 12)

**Table 12**: Mean score on simple and understandable information as a function of nationality and version of web site (score is minimum 1, maximum 7; standard deviation between brackets).

| Information: | With metaphor (n=34) | | Without metaphor (n=36) | |
|---|---|---|---|---|
| | South African | Dutch | South African | Dutch |
| Simple | 5.59 (.80) | 4.67 (1.11) | 5.25 (.91) | 4.37 (.96) |
| Comprehensive | 5.53 (.51) | *5.27 (.70)* | 5.40 (.50) | *4.81 (.75)* |

South Africans scored significantly higher on the components *simple* and *comprehensive* information in the version without metaphors (simple (t(34)=2.80, p<.01); comprehensive (t(34)=2.80, p<.01)). In the version with metaphors, South Africans only scored higher on *simple* information (simple (t(30)=2.72, p<.05); understandable (t(32)=1.25, p=.22)).

For the variable *comprehensive information* it is also interesting to look at the effect of metaphors within each nationality, for table 5 showed a significant effect of metaphors on this variable. Only for Dutch students an effect of metaphors was present; metaphors make the web site more comprehensive, tested two sided (t(29)=1.74, p<.05).

*Integration of message arguments*

Only for the web site *without* metaphors a difference on recall of arguments between South African and Dutch students could be found (see table 13).

**Table 13***: Mean number of correct arguments recalled as a function of nationality on the web site without metaphors (score is minimum 1, maximum 9; standard deviation between brackets).

| | Web site *without* metaphors | |
|---|---|---|
| | South African (n=19) | Dutch (n=16) |
| Arguments recalled | 3.26 (1.97) | 4.56 (1.59) |

Dutch students recalled more arguments compared to South-African students in the web site without metaphors (t(33)=2.12, p<.05).

As a measure of collectivistic vs. individual orientation of a nationalities the arguments recalled were divided into collectivistic and individualistic. Table 14 shows per nationality the number of collectivistic and individualistic arguments recalled.

**Table 14**: Mean number of collectivistic and individualistic arguments recalled as a function of nationality (score is minimum 1, maximum 9; standard deviation between brackets).

| | South African (n=39) | | Dutch (n=31) | |
|---|---|---|---|---|
| | collectivistic | individual | collectivistic | individual |
| **Arguments recalled** | 1.92 (1.31) | 1.54 (1.25) | 2.10 (1.17) | 2.19 (1.25) |

This table shows what was expected. South African students recalled more collectivistic arguments and Dutch students recalled more individualistic arguments.

*Testimonials*

It was hypothesized that the collectivistic orientation of South Africans resulted in a higher rating of testimonials by South African students than by Dutch students. The ratings each nationality gave is expressed in table 15.

**Table 15**: Mean rating on testimonials as a function of nationality (score is minimum 1, maximum 10; standard deviation between brackets).

| | South African (n=39) | Dutch (n=31) |
|---|---|---|
| **Rating testimonials** | 8.13 (1.23) | 7.30 (.99) |

This table shows that South African students rated the testimonials higher than Dutch students (t(67)=-3.19, p<.01)

Moreover, it was hypothesized that metaphors had an effect on the evaluation of testimonials in both countries. Table 9 showed no effect of metaphors on the evaluation of testimonials in general. However, for the Netherlands an effect does exist. This effect is expressed in table 16.

**Table 16**: Mean rating on testimonials as a function of version of web site (score is minimum 1, maximum 10; standard deviation between brackets).

| | Dutch | |
|---|---|---|
| | **With metaphor** (n=14) | **Without metaphor** (n=16) |
| **Rating testimonials** | 7.71 (.61) | 6.94 (1.12) |

Dutch students rated testimonials significantly higher in the web site with metaphors compared to the web site without metaphors. (t(28)=-2.30, p<.05).

*Beliefs, attitudes, and intentions*

It is not only interesting to know whether beliefs, attitudes and intentions differ for the two versions of the web site, but also for the two nationalities. Table 18 shows the beliefs, attitudes and intentions of the Dutch and South African students.

**Table 18**: Mean score on beliefs, attitudes and intentions as a function of nationality (score is minimum 1, maximum 7; standard deviation between brackets).

|  | **South African** (n=39) | **Dutch** (n=31) |
|---|---|---|
| **Beliefs** | 4.85 (.85) | 4.18 (.78) |
| **Attitudes** | 5.19 (.83) | 4.66 (.88) |
| **Intentions** | 4.68 (1.10) | 3.79 (1.28) |

South African students scored significantly higher on beliefs, attitudes, and intentions than Dutch students (beliefs: $t(68)=3.42$, $p<.01$, attitudes: ($t(68)=2.61$, $p<.05$., intentions: $t(68)=3.14$, $p<.01$).

### 3.3    THE ROLE OF MOTIVATIONAL AND ABILITY FACTORS

Involvement, need for cognition, and peer influence (1.2.4) are three independent factors that could influence the way students experienced the web site and hence the interpretation of the results. In this section, the influence of these three factors is considered.

*Involvement*

To determine the degree of involvement, the questions under *involvement* and the extra question: *I feel personally addressed when I read the web site* were combined. After reliability analysis (Cronbach's) the question: *My own health is important to me* was removed. The internal consistency of the combined factor (*involvement*) was moderate (Cronbach's alpha = .69).

*Need for cognition*

The internal consistency of need for cognition (without the question: *I always decide on important issues very quickly*) was insufficient (Cronbach's alpha = .43). Varimax rotation however only resulted in one component. For that reason the questions under need for cognition are combined.

*Peer influence*

The internal consistency of the questions under peer influence was insufficient (Cronbach's alpha = .47). Varimax rotation, however, only resulted in one component. For that reason, the two questions were combined.

Table 19 shows the score on involvement, need for cognition and peer influence for the two nationalities.

**Table 19**: Mean score on involvement, need for cognition, and peer influence as a function of nationality (score is minimum 1, maximum 7; standard deviation between brackets).

|  | **South African** (n=39) | **Dutch** (n=31) |
|---|---|---|
| **Involvement** | 4.30 (.95) | 3.22 (.96) |
| **Need for cognition** | 4.78 (.80) | 4.16 (.69) |
| **Peer influence** | 3.83 (1.61) | 3.31 (1.40) |

South African students indicated that they were far more (one out of seven) involved with HIV/AIDS than Dutch students ($t(68)$ 4.70, $p<.01$). The score on need for cognition is also higher for South African students. ($t(68)=3.42$, $p<.01$). No significant difference could be found for influence of a peer ($t(68)=1.44$, $p=.16$).

*Attitude change*

Involvement, need for cognition, and peer influence can determine (to a certain degree) the level of cognitive elaboration. Table 20 shows the correlation between need for cognition, involvement, and peer influence on the one hand and attitude change on the other.

**Table 20**: Correlations between beliefs, attitudes, and intentions and involvement, need for cognition, and peer influence.

|  | **Beliefs** | **Attitudes** | **Intentions** |
|---|---|---|---|
| **Involvement** | .40** | .39** | .65** |
| **Need for cognition** | .30* | .22 | .55** |
| **Peer influence** | .32** | .26* | .33** |

Note: **p<.01, *p<.05

Need for cognition correlates with beliefs (r=.30, p<.05) and intentions (r=.55, p<.01). Involvement correlates with beliefs (r=.30, p<.01), attitudes (r=.39, p<.01), and intentions (r=.65, p<.01). Peer influence also correlates with all (beliefs: (r=.32, p<.01), attitudes: (r=.26, p<.05), and intentions: (r=.33, p<.01)).

This table indicates that a higher score on involvement, need for cognition as well as peer influence results in a higher score on beliefs, attitudes and intentions of the subject. The more involved and the higher the need for cognition and the higher peer influence, the more beliefs, attitudes and intentions change in the advocated direction. The effect of need for cognition can only be seen for beliefs and intentions.

*Recall of arguments and testimonial rating*

The effect of involvement, need for cognition, and peer influence was also considered for recall of arguments and the rating on testimonials. More involvement and need for cognition can result in more central processing. More elaboration associated with central processing can lead to a better recall of arguments. Furthermore, the level of peer influence can affect testimonial rating, since the testimonials make use of a peer. The correlations between the factors can be seen in table 21.

**Table 21**: correlations between recall of arguments, message agreement and testimonial rating and involvement, need for cognition, and peer influence.

|  | **recall arguments** | **Testimonial rating** |
|---|---|---|
| **Involvement** | .02 | **-**.33* |
| **Need for cognition** | .03 | -.11 |
| **Peer influence** | -.07 | -.10 |

Note: *p<.01

Only involvement and rating for testimonials correlated (involvement: r=-.33, p<.01). It is interesting to see that this is a negative correlation, which means that a higher level of involvement leads to a lower rating for the testimonials. This correlation can be seen in figure 10.
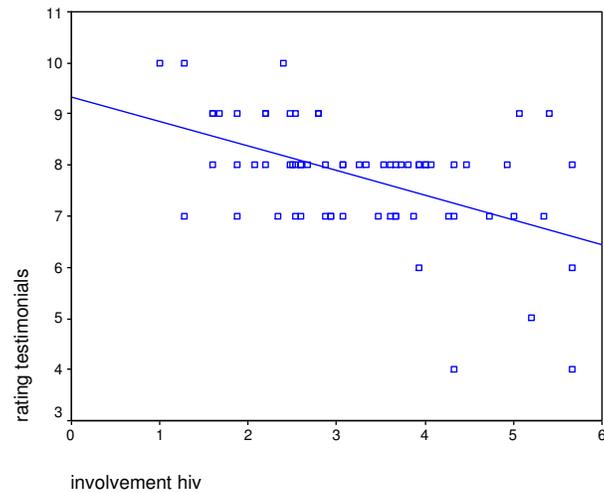


**Figure 10**: correlation between involvement and testimonial rating.

This negative correlation indicates that the rating for testimonials can be predicted based on involvement. More involvement results in a lower rating for testimonials.

In the next chapter the results will be interpreted and discussed on the basis of the research questions (1.2.7).

## 4    <u>CONCLUSION AND DISCUSSION</u>

*1. The web site with metaphors will be evaluated more positively than the web site without metaphors.*

The first hypotheses presumed an effect of metaphors. The web site with metaphors would result greater effects compared to the web site without metaphors. The results, however, showed that metaphors hardly had any effect. Only two minor effects were measured. The total information on the web site was rated higher by the subjects in the web site with metaphors compared to the subjects in the version without metaphors. This result affirms the hypothesis:

d.    *The web site with metaphors will be more appealing than the web site without metaphors.*

This effect can be explained with the help of Ottati et al (1999), who claimed that interesting metaphors can cause a state of interest. This state determines how the whole message is perceived. According to his assumption the metaphors in the web site must have aroused the interest of the readers who evaluated the web site with metaphors higher than the web site without metaphors. In this respect the metaphor can be seen as a peripheral cue for processing.

Another minor effect of metaphors can be seen in the evaluation of understandability of information. The addition of metaphors in the web site results in more comprehensive information. This result supports the hypothesis:

c.    *The web site with metaphors will be better understood than the web site without metaphors.*

This effect supports the superior organization view (Sopory and Dillard, 2002). In this view, metaphors account for more associations in memory, which emphasize the message. In this respect the metaphor can be seen as a cue for central processing.

Metaphors do not have a significant effect on other aspects associated with understandability of information. Table 22 gives an overview of the effect of metaphors on the aspects associated with understandability of information and on other dependent variables associated with persuasiveness of the web site.

**Table 22**:  The effect of metaphors

|  | **Significance** |
| --- | :---: |
| Evaluation source | - |
| Evaluation information | - |
| Rating arguments | - |
| **Rating information** | **+** |
| Appeal | - |
| Credibility | - |
| Empathy | - |
| Simple information | - |
| Clear information | - |
| **Comprehensive information** | **+** |
| Vague information | - |
| VCT clearer | - |
| Rating testimonials | - |
| Recall arguments | - |

Note: **+**: significant effect, **-**: non-significant effect

Based on these results the following hypotheses are rejected:

a. *The source will be more credible in the web site with metaphors compared to the web site without metaphors.*

b. *The web site with metaphors will lead to better integration of message arguments compared to the web site without metaphors.*

e. *The web site with metaphors will arouse more empathy than the web site without metaphors.*

f. *Testimonials with metaphors are more interesting than testimonials without metaphors.*

It will be too straight-forward to claim that the theories of metaphor comprehension are incorrect. The no-effect of metaphors could find its origin in the design of the material. Although the intention was to keep the web site as simple as possible without distracting elements, it was regarded as high quality. The metaphors could have been overpowered by its design. The web site in itself might have been a peripheral cue that triggered the subjects' attention.

Another design aspect which could account for the no-effect of metaphors were the metaphors itselves. The metaphors were composed according guidelines provided by Sopory and Dillard (2002). The problem in this respect could be found with the novelty of metaphors. Trying to write novel metaphors resulted in metaphors that were too difficult or too far-fetched. The metaphor also had to be suitable to use both in South Africa and the Netherlands. This might have resulted in metaphors that were not suitable for either.

A third design aspect was the information in general and the arguments and testimonials in particular. The information was on HIV/AIDS and VCT. These are serious subjects that attract the subjects' attention regardless the level of involvement. It is possible that the testimonials, as well as the total web site, were interesting and appealing enough without the metaphors (plafond-effect). In addition, the assignment I gave the subjects was to read the web site carefully and completely. These two aspects can account for central processing, regardless of the presence of metaphors. The following hypothesis will be rejected:

*2. (Behavioral) beliefs, attitudes and intentions in the web site with metaphors will be influenced more positively compared to the web site without metaphors*

An effect of metaphors on beliefs, attitudes and intentions also failed to materialize. This is a logical consequence of the lack of effect of metaphors on the variables mentioned in table 22. The assumption was that metaphors could make the web site more persuading (for example more credible and more memorable). A more persuading web site can create stronger beliefs and hence attitudes and intentions (Integrative model of behavioral prediction, Fishbein & Yzer, 2003). Metaphors failed to do so.

In conclusion I can say that metaphors did (hardly) not have any effect on the persuasiveness of the web site. Still it is interesting to know whether the web site and the metaphors were processed systematic or heuristic.

There are several peripheral and central cues that can indicate the type of processing the students engaged into during the experiment. The plafond-effect and the assignment to read the web site carefully are two aspects that could account for central processing regardless of the presence of metaphors. A third cue for central processing are the associations made in memory in the version with metaphors, which call attention to the message. These associations in memory resulted in more comprehensive information (superior organization theory). According to Millar and Millar (1998) central processing leads to more message-relevant instead of irrelevant thoughts. The number of incorrect or irrelevant arguments the subjects gave was neglectable. This means that (in both conditions) the message was processed more centrally. Need for cognition and involvement are a last cue for central processing. More need for cognition and more involvement resulted in more message agreement. More message agreement is the result of more elaboration on the message (stimulated elaboration view).

A higher state of interest resulted in a higher rating on information. This state of interest was the result of the presence of metaphors. In this respect the metaphor can be seen as a peripheral cue for processing. Secondly, the design of the web site, which might have overpowered the metaphors can be seen a peripheral cue that triggered the attention. The cues indicate that processing mostly occurred centrally. In table 23 the cues for central and peripheral processing are gathered.

**Table 23**:  Cues for central and peripheral processing

| Cues for central processing | Cues for peripheral processing |
| --- | --- |
| Plafond-effect | State of interest |
| Assignment | Design of the web site |
| Associations in memory | |
| Need for cognition | |
| Involvement | |
| Incorrect arguments | |

*3.  Evaluation of source and information will differ for South African and Dutch students.*

The third hypothesis presumed an effect of cultural differences. This effect was omnipresent. South Africans scored higher on almost every aspect compared to the Dutch. They evaluated both source (appeal, credibility, empathy) and information (simple, understandable) higher. Table 24 gives an overview of the effect of cultural differences both in the web site with and without metaphors.

**Table 24**: The effect of cultural differences

| Significance in version with metaphors | | Significance in version without metaphors |
| --- | --- | --- |
| + | Evaluation source | + |
| + | Evaluation information | + |
| + | Appeal | + |
| + | Credibility | + |
| + | Empathy | + |
| + | Simple information | + |
| - | Clear information | - |
| - | Comprehensive information | + |
| - | Vague information | - |
| - | VCT clearer | - |

Note: **+**: significant effect, **-**: non-significant effect

The most obvious and simple explanation for the differences on these variables between the two nationalities is that South Africans were more inclined to give higher scores. Other factors that can explain these results are the level of involvement and need for cognition. South Africans claimed to be more involved and to have a higher need for cognition. Involvement and need for cognition can increase motivation and ability to elaborate on the message, resulting in more persuasion. The more obvious conclusion is that South Africans also rated

involvement and need for cognition higher like the rest of the variables. The interpretation of the results on the next hypothesis support this assumption:

     *a.    South African students will better recall the arguments in the web site than Dutch students.*

Based on high involvement and a high need for cognition it could be expected that South Africans recalled more arguments. The opposite is true, Dutch students recalled more. Need for cognition and involvement do not correlate with recall of arguments. The assumption that South Africans simply gave higher scores is supported with the result of this hypothesis.

The next hypothesis stated:

     *b.    Testimonials are rated higher in South Africa than in the Netherlands.*

This hypothesis was affirmed. Testimonials were rated higher in South Africa than in the Netherlands. Besides the reason of higher evaluation in general, another reason can be found for this effect. South African students recalled more collectivistic arguments than Dutch students, who in turn recalled more individualistic arguments. This supports the assumption that South Africans are more collectivistic. In a collectivistic culture peers are more important and have more influence than in an individualistic culture. Testimonials make use of the notion of peer influence. The collectivistic culture in South Africa could account for the higher rating on testimonials.

The next hypothesis does not only state an effect of testimonials between countries but also within countries.

     *c.    Both South African and Dutch students evaluate the testimonials with metaphors higher than testimonials without metaphors.*

This hypothesis is only confirmed by the results of the Dutch students. They appreciated the testimonials with metaphors better than the testimonials without metaphors. It was already concluded that the web site was generally processed centrally. This can explain the lack of effect of metaphors within South Africa. It is plausible that Dutch students also process the web site centrally and that the metaphors are seen as an interesting or attractive (peripheral) element. Meyers-Levy and Malaviya (1999) call this experiential processing. Dutch students are influenced by the mood the metaphors evoke or by the pleasure or relief they experience for recognizing the metaphor.

The next hypothesis supposes an effect of metaphors on general evaluation of the web site in each country:

> d. *Both South African and Dutch students evaluate the web site with metaphors higher than the web site without metaphors.*

It has already been concluded that metaphors hardly have any effect on the evaluation of the web site in general. It is obvious that an effect within nationality is also absent. Metaphors could only make the information more comprehensive for Dutch students.

The last hypothesis stated:

*4. South African and Dutch students will differ in their beliefs, attitudes and intentions regarding VCT after reading the web site.*

South Africans scored higher on almost all aspects of a persuading web site (table 24). The most obvious reason that confirms this hypothesis is that South African students also scored higher on beliefs, attitudes and intentions.

To all appearances, the effect of cultural differences on the persuasiveness of a web site on VCT and HIV is not real. The differences in results between the two nationalities is caused by a difference in scoring.

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http://www.usaid.gov
http://www.synergyaids.com
http://www.cdc.gov
http://www.fhi.org
http://www.rivm.nl

## APPENDIX

**Appendix 1**: The process of VCT

**Appendix 2**: Determinants of VCT

**Appendix 3**: Arguments and testimonials

**Appendix 4**: The web site

**Appendix 5**: Ten usability heuristics

**Appendix 6**: The questionnaire

**Appendix 7**: The assignment

**Appendix 8**: Evaluation of the web sites

**Appendix 1: The process of VCT**

**What is VCT**

Voluntary HIV counseling and testing (VCT) is the process whereby an individual or couple undergo counseling to enable hem/her/them to make an informed choice about being tested for HIV. This decision must be entirely the choice of the individual and he/she must be assured that the process will be confidential.

**Objective of VCT**

VCT is much more than drawing and testing blood and offering a few counseling sessions. It is a vital point of entry to other HIV/AIDS services, including prevention and clinical management of HIV-related illnesses, TB control, emotional and legal support, and prevention of mother to child transmission of HIV.

**Counseling process**

HIV counseling has been defined as "a confidential dialogue between a person and a care provider aimed at enabling the person to cope with stress and make personal decisions related to HIV/AIDS. The counseling process includes an evaluation of personal risk of HIV transmission and facilitation of preventive behaviour". The VCT process consists of pretest, post-test and follow-up counseling.

**Importance of VCT**

It is important that people in South Africa voluntarily apply for counseling and testing. VCT has proven to be an effective way of slowing transmission of HIV.

**Advantages and disadvantages**

People who have been tested seropositive can benefit from earlier appropriate medical care and interventions to treat and/or prevent HIV-associated illnesses. Pregnant women who are aware of their seropositive status can prevent transmission to their infants. Knowledge of HIV serostatus can also help people to make decisions to protect themselves and their sexual partners from infection.

VCT gives seropositive people earlier access to medical care and preventive therapies.

Other benefits include improved health status through good nutritional advice, emotional support, better ability to cope with HIV related anxiety and safer blood donation.

Barriers to greater use of VCT include low awareness of the psychosocial benefits of counseling and testing, fear of stigma and discrimination, and low access to trusted services because of cost, distance, quality and confidentiality. A last barrier to VCT is reduced employment chances for people with HIV.

**Appendix 2: Determinants of VCT**

**ADVANTAGES OF VCT**

People who have been tested seropositive can benefit from earlier appropriate medical care and interventions to treat and/or prevent HIV-associated illnesses. Pregnant women who are aware of their seropositive status can prevent transmission to their infants. Knowledge of HIV serostatus can also help people to make decisions to protect themselves and their sexual partners from infection

CT gives seropositive people earlier access to medical care, preventive therapies and the opportunity to prevent mother-to-child transmission of HIV.

The potential benefits of testing and counseling for the individual include improved health status through good nutritional advice and earlier access to care and treatment/prevention for HIV-related illness; emotional support; better ability to cope with HIV related anxiety; awareness of safer options for reproduction and infant feeding; and motivation to initiate or maintain safer sexual and drug related behaviors. Other benefits include safer blood donation.

Simple/rapid testing enables testing to be carried out without laboratory facilities and equipment or highly trained personnel. These factors could enable HIV testing to be made more widely available and can be suitable for rural areas and sites outside capital cities.

Counseling sessions are of high quality. Counselors give good-quality counseling. Those people who learn they are seronegative can be empowered to remain disease-free.

Other medical and supportive services can help those living with HIV to live longer, healthier lives and prevent transmission to others.

**BENEFITS OF VCT**

**Prevention of HIV transmission.**

Recent studies have demonstrated that VCT can be an effective tool for behavior change among both HIV-positive and HIV-negative individuals. Thigh-quality counseling and knowledge of HIV status can help individuals assess their level of risk, develop realistic plans to reduce their risk, and increase safer sex practices.

**Improved access to care and support.**

VCT is a critical first step in providing HIV care and support services, including prevention and treatment of HIV-related illnesses and economic and psychosocial support for people infected with HIV. VCT services are essential for identifying women in need of services to prevent mother-to-child transmission of HIV.

**Reduction of stigma.**

VCT can be a powerful tool for changing community perceptions of HIV and overcoming the stigma and denial that undermine HIV/AIDS prevention, care, and support efforts.

**BARRIER TO VCT**

Barriers to greater use of high quality VCT include **low awareness of the psychosocial benefits (1)** of counseling and testing, **fear of stigma (2)** and rejection, or violence and low access to trusted services because of cost, distance, quality, confidentiality. The financial and psychological costs associated with waiting for test results reduce the demand for VCT as well as the proportion of clients who return for test results.

**(1) Psychological trauma and personal harms.**

Although severe and long term psychological problems are rare following *voluntary* testing with access to high quality counseling, high levels of suicidal ideation and self harm have been reported in military personnel in the first 3 months following *mandatory* HIV screening.

**(2) Stigma and discrimination**

In many countries HIV remains a highly stigmatizing condition and there are many anecdotal reports of people being discriminated against or stigmatized for being seropositive. These concerns have been noted more frequently among women or arise when breaches of confidentiality occur or people are tested mandatory or without adequate counseling. If, however, peacekeepers receive adequate pre- and post-test counseling and ongoing counseling as required, and confidentiality is ensured, stigma and discrimination can be avoided.

**(3) Employment**

Some countries have employment laws that discriminate against people with 'HIV and pre-employment HIV screening continues to be practiced. Many insurance policies exclude people with HIV, and HIV testing is required by some institution before offering further education opportunities or promotion.

**Source**: U.S. Agency for International Development (USAID), Joint United Nations Programme on HIV/AIDS (UNAIDS), Center for Disease Control and Prevention (CDC), Family Health International (FHI).

**Appendix 3: Arguments and testimonials**

*VCT and personal health*

1. **Receive medical care**

**Argument**

If you test HIV-positive you can benefit from earlier appropriate care and interventions to treat and prevent HIV-associated illnesses.

*The experience of infected people during the last two decades has shown that HIV is not the "end of the world" and that there is good quality life for several more years. New drugs and vaccine efforts offer considerable hope if you are infected.*

**Testimonial Elsa**

**Objective**

When I met a friend of mine she was surprised to see, that I looked really healthy. I told her I was taking a combination of medicines which reduces the number of viruses in my body. I told her that this new medication has given me hope and that I am busy with my normal life. I was lucky because I got tested early. My counselor told me about the treatment for HIV and guided me in this difficult period. There are a lot of new advances for people who are HIV positive and you don't die after a few years. I am glad that I talked to my counselor as soon as I knew I was positive. The doctors were able to treat the HIV in its early stage while my health was still good. The medication has to be taken long-term but at least I am healthy.

**Manipulated**

When I met a friend of mine she was surprised to see, that I looked really healthy. *I told her about a new medicine "cocktail" I was taking. This medicine is like a group of brave soldiers killing the evil viruses in my body*. I told her that this new medication has given me hope and that I am busy with my normal life. I was lucky because I got tested early. My counselor told me about the treatment for HIV and guided me in this difficult period. There are a lot of new advances for people who are HIV positive and you don't die after a few years. I am glad that I talked to my counselor as soon as I knew I was positive. The doctors were able to treat the HIV in its early stage while my health was still good. The medication has to be taken long-term but at least I am healthy.

2. **Receive nutritional advice**

**Argument**

If you test HIV-positive you can improve your health status through good nutritional advice.

*If you know your positive status, you may become more motivated to adopt a healthy lifestyle that improves your health status and slows the progression from HIV infection to symptomatic HIV disease. In this respect, the counsellor can provide you with a diet adjusted to your needs and wants.*

**Testimonial Johanna**

**Objective**

I couldn't believe it when I was told that I was HIV positive. For me living with HIV was not possible. But when I talked to my counselor he told me that I could improve my health by adjusting my eating habits. He gave me a diet and told me that I should stop smoking and drinking alcohol, because it would make me more vulnerable to bacteria. I was rather skeptic about his advice but I decided to try it for a month. It was not always easy not to smoke or to drink and I could not always resist the temptation. But after a few weeks I started to feel better. Now I try to reduce smoking and drinking to a minimum and I still follow my diet.

**Manipulated**

I couldn't believe it when I was told that I was HIV positive. For me living with HIV was not possible. But when I talked to my counselor he told me that I could improve my health by adjusting my eating habits. He gave me a diet and told me that I should stop smoking and drinking alcohol, *because alcohol and smoke are like a sultry swamp in which bacteria grow more rapidly.* I was rather skeptic about his advice but I decided to try it for a month. It was not always easy not to smoke or to drink and I could not always resist the temptation. But after a few weeks I started to feel better. Now I try to reduce smoking and drinking to a minimum and I still follow my diet.

### 3. Stay disease free

**Argument**

If you learn you are HIV-negative you can be empowered to remain disease-free

*If you are not infected your counsellor can learn you how to stay that way by giving information about safe sex.*

**Testimonial Beryl**

**Objective**

I recently heard that someone I used to know got HIV. I didn't sleep with this person, but it made me realize that I could get AIDS too. That scared me especially because I am not always careful, sometimes I use a condom, but sometimes I forget, but I always felt it was pretty safe. Now I guess it is different. AIDS is out there and I seem to be reading about it more and more. When I got myself tested and found out that I was negative I began appreciating my life more than anything else. I have had help from my counselor who gave me practical advice to remain disease free. I decided immediately that I would stop having sex without a condom. I am disease free and I want to stay that way!

**Manipulated**

I recently heard that someone I used to know got HIV. I didn't sleep with this person, but it made me realize that I could get AIDS too. That scared me especially because I am not always careful, *for me using a condom is like wearing a seatbelt, which gives you the safe feeling of being protected.* AIDS is out there and I seem to be reading about it more and more. When I got myself tested and found out that I was negative I began appreciating my life more than anything else. I have had help from my counselor who gave me practical advice to remain disease free. I decided immediately that I would stop having sex without a condom. I am disease free and I want to stay that way!

*VCT and psychological self*

### 4. Receive quality counselling

**Argument**

VCT counselors offers you high quality counseling

*There is sufficient time to cover the main areas of your concern, and your counselor gives you the possibility of follow up and ongoing counseling and support to alleviate your anxiety.*

**Testimonial Adrian**

**Objective**

The first month after being tested positive I felt betrayed, useless, ugly and anxious. But gradually, with the help of my counselor I started to look at the future. He guided me through this difficult period by offering support and counseling. I could discuss all the worries I had. I was afraid what my family would think, how I could live with this disease and how my future would be. He sat down and gave me answers to all my questions. Not only did he give me advice, he also gave me emotional support. I found out that thinking you are not feeling well will actually make you feel miserable; a positive attitude makes a big difference.

**Manipulated**

The first month after I tested positive I felt betrayed, useless, ugly and anxious. But gradually, with the help of my counselor I started to look at the future. *He was like a guide to me, who helped me finding my way through the wilderness of worries (and helped me crossing difficult paths).* I could discuss all the worries I had. I was afraid what my family would think, how I could live with this disease and how my future would be. He sat down and gave me answers to all my questions. Not only did he give me advice, he also gave me emotional support. I found out that thinking you are not feeling well will actually make you feel miserable; a positive attitude makes a big difference.

### 5. Reduce uncertainty

**Argument**

Knowing your result can reduce the stress associated with uncertainty.

*Knowing you are HIV-negative gives certainty about your health status. It can give an explanation for the symptoms accompanying the disease and hence reduce stress. Stress about your future or infecting others will be reduced.*

**Testimonial Robin**

**Objective**

My doctor told me the news. My first reaction was one of relief. The years of uncertainty had ended.

All the symptoms could be explained. No more worries about whether or not I had HIV. I now had it. After a while I realized it, I couldn't get out of bed, was thinking of dying and planned my funeral a thousand times. One of my closest friends, who never stopped seeing me, couldn't take it anymore and took me to see a counselor. The counselor was friendly, took the time and answered all my questions. It was by then that I realized that having HIV is not the same as having AIDS and for a great deal I was responsible for my own health. It is a whole lot better energy to be grateful for meds than the waste of energy to complain about all the side effects and worry about dying.

**Manipulated**

My doctor told me the news. My first reaction was one of relief. ***Uncertainty about your serostatus is like a black oil slick on the surface of the sea, which kills sea life and keeps spreading out (until you decide to clean it up).*** All the symptoms could be explained. No more worries about whether or not I had HIV. I now had it. After a while I realized it, I couldn't get out of bed, was thinking of dying and planned my funeral a thousand times. One of my closest friends, who never stopped seeing me, couldn't take it anymore and took me to see a counsellor. The counselor was friendly, took the time and answered all my questions. It was by then that I realized that having HIV is not the same as having AIDS and for a great deal I was responsible for my own health. It is a whole lot better energy to be grateful for meds than the waste of energy to complain about all the side effects and worry about dying.

*VCT and the relationship with others*

### 6. No mother to child transmission

**Argument**

Awareness of your HIV-positive status makes it possible to prevent your baby from HIV transmission.

*If you take the medicine AZT during your pregnancy and give it to your baby after birth the rate of HIV transmission from mother to child can be reduced from 25.5 to 8.3 percent. The risk of transmission can even be further reduced by preventive measures such as caesarean delivery.*

**Testimonial Lisa**

**Objective**

I found out that I was HIV positive when I got pregnant. I was in college and I was doing well. The guys I dated were athletes and guys who were popular. I practiced safe-sex methods 50 percent of the time, leaving a 50 percent opportunity to get pregnant and be infected with HIV; more than enough! I became pregnant in my junior year of college when I was 23 years old. After deciding to keep the baby, I went to a community hospital and was given an HIV test. Nearly six weeks after learning I was pregnant, I also learned that I was HIV positive. My counselor told me that with the right medication and a caesarian delivery, my baby did not have to be HIV positive. So I took the medication and instead of breast feeding I gave her other milk. To me it is still a miracle but my baby was born HIV negative! I am now 27 years old and I have a healthy 4 year old daughter.

**Manipulated**

I found out that I was HIV positive when I got pregnant. I was in college and I was doing well. The guys I dated were athletes and guys who were popular. I practiced safe-sex methods 50 percent of the time. ***Practicing safe sex only half of the time is like hiding a landmine in the garden where your children play (and risk their life stepping on it).*** I became pregnant in my junior year of college when I was 23 years old. After deciding to keep the baby, I went to a community hospital and was given an HIV test. Nearly six weeks after learning I was pregnant, I also learned that I was HIV positive. My counselor told me that with the right medication and a caesarian delivery, my baby did not have to be HIV positive. So I took the medication and instead of breast feeding I gave her other milk. To me it is still a miracle but my baby was born HIV negative! I am now 27 years old and I have a healthy 4 year old daughter.

### 7. Protect partner

**Argument**

If you know you are HIV-positive you can protect your sexual partners to remain disease free.

*Adjustments to your lifestyle and sex life can protect your sex partners from infection.*


**Testimonial Deidre**

**Objective**

It took my wife some effort to convince me to talk to the counselor. She didn't want to come herself, but she cared enough about me to send me here. As I sat down, I said: "Ok doc, what is going on?" My wife had given him permission to disclose to me what she had just found out. She had been tested for the AIDS virus. The test was positive, she now had HIV. My God, how am I going to get us through this? Suddenly, I was in a "high risk" category. I knew that the risk of being infected myself was high. Of course, we talked about it and we will use a condom from now on but it might be too late for me. If it is, so what! I love my wife and that's why I married her. My feelings are: let's live, let's get the best help available, let's help others, but most of all, let's stay together.


**Manipulated**

It took my wife some effort to convince me to talk to the counselor. She didn't want to come herself, but she cared enough about me to send me here. As I sat down, I said: "Ok doc, what is going on?" My wife had given him permission to disclose to me what she had just found out. She had been tested for the AIDS virus. The test was positive, she now had HIV. ***Hearing that someone you love is HIV-positive is like ebb and flood (low tide and high tide). Flood can overwhelm you and wash your certainties away. But after a while ebb will push the sea back and the beach will be given back to you.*** Suddenly, I was in a "high risk" category. I knew that the risk of being infected myself was high. Of course, we talked about it and we will use a condom from now on but it might be too late for me. If it is, so what! I love my wife and that's why I married her. My feelings are: let's live, let's get the best help available, let's help others, but most of all, let's stay together.

### 8. Donate safe blood

**Argument**

Knowledge of your HIV-negative status makes it safe to donate blood.

*In blood transfusion it is necessary that your blood is HIV negative. This will minimize the chance of infecting others.*

**Testimonial Maria**

**Objective**

I believe it is important to help my community. By donating blood I can help people who need a blood transfusion. This is my way of contributing to society. When I heard that AIDS could be transmitted by blood too, I stopped donating blood. I have had many partners with whom I had sex, and most of the time without protection. This could mean that I was infected too. It took some nights sleep, but then I decided to get tested. The result was a big relieve, I was negative! Now that I am officially healthy I started donating blood again. I can protect myself from HIV, but people who need a blood transfusion need the help of others.

**Manipulated**

I believe it is important to help my community. ***Donating blood is like replacing an old battery with a new one.*** This is my way of contributing to society. When I heard that AIDS could be transmitted by blood too, I stopped donating blood. I have had many partners with whom I had sex, and most of the time without protection. This could mean that I was infected too. It took some nights sleep, but then I decided to get tested. The result was a big relieve, I was negative! Now that I am officially healthy I started donating blood again. I can protect myself from HIV, but people who need a blood transfusion need the help of others.

### 9. Keep community disease free

**Argument**

Knowledge of your HIV-negative status is a stimulus to keep the people in your community disease free.

*Knowing you are HIV-negative is a stimulus to have the people in the community tested. The more people in your community know their status, the smaller the change of infecting others gets.*

**Testimonial Marten**

**Objective**

I decided to come out publicly because a lot of Swazis are dying. They think HIV is a problem in other countries but not in ours. I have had problems with my wife's family. They accused me of being unfeeling and insensitive. To them it was humiliating that the community knew about my status. But my wife stood by me and we are still together. From the beginning I have felt good about my choice. Just talking about my situation has helped a lot of HIV-positive people and their relatives. They now know that they are not alone in their fight against HIV. My advice is to remember that life needs courage.

**Manipulated**

I decided to come out publicly because a lot of South-Africans are dying. *It is as if they are wearing head phones in an attempt to keep the sound of the outside world at a distance.* I have had problems with my wife's family. They accused me of being unfeeling and insensitive. To them it was humiliating that the community knew about my status. But my wife stood by me and we are still together. From the beginning I have felt good about my choice. Just talking about my situation has helped a lot of HIV-positive people and their relatives. They now know that they are not alone in their fight against HIV. My advice is to remember that life needs courage.

**Appendix 4: The web site**

**Appendix 5:  Ten Usability Heuristics**

**Visibility of system status**

> The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

**Match between system and the real world**

> The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

**User control and freedom**

> Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

**Consistency and standards**

> Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

**Error prevention**

> Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

**Recognition rather than recall**

> Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

**Flexibility and efficiency of use**

> Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

**Aesthetic and minimalist design**

> Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

**Help users recognize, diagnose, and recover from errors**

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

**Help and documentation**

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

**Visited at 19 november 2003**

http://www.useit.com/papers/heuristic/

**Appendix 6: The questionnaire**

**Appendix 7: The assignment**

Dear student,

First I want to thank you for participating in my experiment.

I am a student at Tilburg University in the Netherlands. For my Master thesis I am currently investigating the quality of AIDS communication. And therefore I need your help.

I will first ask you to look at a web site. This web site is developed within the Epidasa-project, a cooperation of South-African and Dutch universities. This project intends to research the effectiveness of HIV persuasive documents. It focuses on communication in situations which are pivotal in effectively fighting the spread of HIV/AIDS and in providing care and support to those living with and affected by HIV/AIDS.

The web site is about Voluntary Counseling and Testing, or in short VCT. On the web site you will find information on VCT and stories of people who are in a situation where they have to choose whether or not to apply for VCT. The information on the web site is intended for people ho consider going for VCT.

Please take your time to look at the web site and try to take the perspective of someone who is considering going for VCT. You can read everything in the order you prefer, as long as you try to read everything. You will need this information to answer the questions that I will give you afterwards.

Thank you for your help!

**Appendix 8: Evaluation of the web sites**

Different web sites were used to gather the information for the web site. Most web sites offered the same information, but in different words. The sources I want to discuss next are the main sources which offered the most information.

1. **USAID: U.S. Agency for International Development**

*USAID is committed to working with our African partners to give the continent's people opportunities to make a better life, to prevent costly crises, and to fuel growth.*

This site contains useful information. It offers general information on VCT and benefits of Voluntary Counseling and Testing. Although the site is American, it also presents information about the situation in South Africa.

2. **UNAIDS: Joint United Nations Programme on HIV/AIDS**

*The global mission of UNAIDS is to lead, strengthen and support an expanded response to the epidemic that will: prevent the spread of HIV, provide care and support for those infected and affected by the disease, reduce the vulnerability of individuals and communities to HIV/AIDS, and alleviate the socio-economic and human impact of the epidemic.*

This site offers information on AIDS worldwide. The site is very extensive and contains press releases, researches, publications and HIV/AIDS information. One article was of particular interest. The article dated from May 2000 and was a technical update on VCT. The information presented in this article was very useful. It dealt with the concept of VCT, elements of VCT/HIV counseling, barriers and benefits to VCT and key points in communicating VCT to people.

3. **CDC: Center for Disease Control and Prevention**

*The Centers for Disease Control and Prevention (CDC) is recognized as the lead federal agency for protecting the health and safety of people – at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. The Global AIDS Program (GAP) exists to help prevent HIV infection, improve care and support and build capacity to address the global HIV/AIDS pandemic.*

The information on VCT on this site was brief. It offered background information and recognized best practices. The site was useful in providing benefits of VCT and key points of communicating VCT to people.

**4. FHI**

*Family Health International (FHI) works to improve reproductive and family health around the world through biomedical and social science research, innovative health service delivery interventions, training, and information programs.*

This site offered information on strategies in use for promoting VCT to young people, strategies to increase young people's use of VCT and an example of a testimonial.

In conclusion I can say that all sites that presented valuable information on VCT are of American origin. These sites are useful indeed, because they offer information that is generally applicable. In some cases, the site presented information on the situation in South Africa. No site was aimed at our target group.