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VCT-uptake in South Africa via Web sites:

An evaluation checklist

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ABSTRACT

This thesis attempts to provide health communicators in South Africa with an evaluation checklist on content and formal design of Web sites targeted at young people to persuade them to report for Voluntary Counselling and Testing (VCT).

To start off the route to the evaluation checklist, this thesis begins by setting out a background of the HIV/AIDS epidemic in South Africa. Hereafter, the route is followed by a dual theoretical part. The first part consists of a theoretical background in which health behaviour theories are discussed. Based on this theoretical background, content heuristics are then generated with help of empirical literature.
The second part consists of realizing formal design heuristics by means of literature in reference to the design of a persuasive Web site. Together, the content heuristics and the formal design heuristics are subsequently joint together in an evaluation checklist.
The evaluation checklist is then applied to a South African Web site regarding HIV/AIDS and youth. After this, suggestions for further research are considered.

FOREWORD

At the end of 2001, a fellow student pointed out to me that a new project was being set up. The subject of this project, *Improving the effectiveness of public information documents on HIV/AIDS in South Africa*, drew my attention immediately. To carry out the research, we were given the opportunity to go to South Africa. The period in South Africa has definitely been the highlight of the project for me.

Not having any experience in writing a thesis, I did not start off my research very smoothly. However, in South Africa Prof Piet Swanepoel took great effort in pointing me in the right direction. From the start until the end of my study, he also commented my work extensively. Thank you Piet for all you did for me and my fellow students! When I came back to the Netherlands, Prof Carel Jansen took over the personal supervision on my research. After numerous meetings and a rough time working on the project, I am finally able to present my thesis. Thank you Carel for all those times you took the time to discuss my work with me.

I would also like to thank all those people who mean so much to me.
Thank you: Michel, for your humour and being there all the time from the beginning until the end, Robbert for your mental support and being my friend, Jaap for revising my thesis, my housemates for listening to my nagging all those months, and ALL of you who supported me and made me laugh! THANKS!

Nijmegen, 28 June 2004
Maarten Schumm

1 INTRODUCTION TO THE RESEARCH[1]

1.1 Introduction

This thesis attempts to provide health communicators in South Africa with an evaluation checklist on content and formal design of Web sites targeted at young people to persuade them to report for Voluntary Counselling and Testing (VCT).

The aim of this chapter is to give in an insight of the current situation on HIV/AIDS and related health communication in South Africa. Paragraph 1.2 will give specific information of the epidemic in South Africa. Paragraph 1.3 will treat current HIV/AIDS campaigns in South Africa. Subsequently, paragraph 1.4 will explain the importance of VCT as a strategy to curb the spread of HIV/AIDS. Paragraphs 1.5 and 1.6 deal with current media that are used in HIV/AIDS health communication and the medium that will be used as a communication means in this thesis: Web sites. To conclude this chapter, a summary is given in paragraph 1.7.

Chapter 2 will then treat theories of health behaviour that can be used for the selection of content heuristics. Chapter 3 leads to a selection of content heuristics. Subsequently, chapter 4 deals with the formal design aspects of Web sites through which young people in South Africa should be persuaded to report for VCT. In chapter 5, the evaluation checklist will be presented and discussed.

1.2 HIV/AIDS in South Africa

The world we live in today has changed dramatically in the past few decades. With globalisation, a devastating virus has been able to travel around the globe, infecting hundreds of thousands of people. In 2002, more than 3 million people died from AIDS and an estimated 5 million acquired the *human immunodeficiency virus (HIV)* worldwide (UNAIDS, 2002). There are now 42 million people living with HIV, of which 29.4 million are living in Sub-Saharan Africa (UNAIDS, 2002). A study by the Human Sciences Research Council (HSRC, 2002) shows that now 11.4% of people older than two have contracted HIV in South Africa. Furthermore, the Human Sciences Research Council study (HSRC, 2002) shows that:

- 15.2% of South Africans in the age-group 15-49 years are HIV-positive.
- In 2000, 40% of all deaths in the age group 15-49 were caused by HIV.
- AIDS is responsible for 25% of all deaths in South Africa, which makes it the single largest cause of death in South Africa.
- In 2002, the average number of people dying from HIV/AIDS daily was 600.
- Without effective intervention, the number of AIDS-related deaths in South Africa will rise to 5 to 7 million by the year 2010.
- 9.3% of people aged 15-24 are HIV positive.

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[1] A number of Dutch and South African universities are taking part in a project to improve the effectiveness of HIV/AIDS information and education documents for South African target groups. The working title of this project is EPIDASA: *Improving the Effectiveness of Public Information Documents on HIV/AIDS in South Africa*. This thesis is part of that project. More information about the project is available on http://www.epidasa.org.

Table 1.1 HIV prevalence among persons aged 15-24 by race and gender in South Africa 2002 (HSRC, 2002)

Population group/gender	N	HIV positive (%)
African	1320	10.2
White	129	3.2
Coloured	427	6.4
Indian	223	0.3
Male	976	6.1
Female	1123	12.0
Total	*2099*	*9.3*

In an article by the World Health Organization (2003), it is stated "an expert group has reaffirmed that unsafe sexual practices are responsible for the vast majority of HIV infections in sub-Saharan Africa, and that safer sex promotion must remain the primary feature of prevention programmes in the region".

Information provision is considered a cornerstone of HIV prevention, care and support around the world. Although South Africa has a highly developed mass media communications infrastructure, prevention programmes are not generating the effects needed. Most South African HIV/AIDS campaigns placed a strong emphasis on lowering sexual risks (prevention) while focussing on youths (HSRC, 2002). Non-sexual aspects of HIV response, such as care provision and *voluntary counselling and testing (VCT)*, have received little attention not in the least from the South African Government. The South African government uses the following mission statement in the current HIV/AIDS programmes (taken from http://www.doh.gov.za/aids/index.html 28-05-03):

"To reduce the transmission of STDs[2] (including HIV infection) and provide appropriate treatment, care and support for those infected and affected, through collaborative efforts within all levels of government, using the NACOSA[3] National AIDS Plan as the terms of reference."

Few people in South Africa report for VCT. Estimates of HIV prevalence in South Africa were previously primarily based on surveys of women attending antenatal clinics (HSRC, 2002). These surveys are inadequate for estimating national prevalence levels in the general population for several reasons:

"Firstly, only a select group (i.e., currently or recently sexually-active women, who are pregnant and thus of a limited age group 15-49) are included in the surveys. Secondly, because a sexually active group is being sampled, it is difficult to draw conclusions about proportions of the population who are not sexually active, particularly younger age groups where sexual debut may not yet have occurred. Thirdly, individuals who have adopted key HIV prevention practices such as condom use are considerably less likely to be represented in the antenatal sample. These factors may contribute to antenatal surveys over-estimating HIV prevalence. On the other hand, under-estimation might also occur. For example, studies have shown that HIV lowers fertility" (HSRC, 2002: 1).

The study conducted by the HSRC gives accurate information on national South African prevalence and an improved understanding of the socio-cultural context in which the epidemic occurs.

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[2] STD = Sexually Transmitted Disease

[3] NACOSA = National AIDS Coordinating Committee of South Africa.

1.3 Current campaigns in South Africa

The South African Government and NGOs[4] implemented several interventions in the past. As stated before, current mass media interventions in South Africa predominantly focus on prevention and care. Coulson (2002) describes three major interventions that make or made use of mass media:

1. *Beyond Awareness Campaign*. This campaign was an initiative from the South African Government, which lasted 5 years. The first campaigns were somewhat conservative, whereas the Beyond Awareness I and II campaigns had a much stronger strategy. The campaign made use of theoretical frameworks but did not formally develop a working model.

2. *Soul City*. This project has been running for 9 years. The target population is black and coloured South Africans aged 16-65. Soul City has a multi-media edutainment project with 70% of their budget going to HIV/AIDS related subjects. Their campaigns make use of theory, although it is still in the development phase. Soul City is still running.

3. *loveLife*. LoveLife started in 1999 to promote a healthy lifestyle among 12-17 year old children. They combine high-powered media awareness and education with the development of adolescent-friendly reproductive health services and other outreach and support programmes for isolated youths in poor communities.

Current research does not give much insight in design and evaluation of educational material. There are only two survey studies on South African campaigns namely Kelly, Parker & Oyosi (2001) and Coulson (2002). They do not discuss each campaign in detail, but they focus on general process problems and illustrate them by means of campaigns. Furthermore, they do not give attention to educational material that was used in these campaigns. It appears that most intervention programmes, particularly at community level, are conceived without reference to research. Community mobilisation in the form of AIDS awareness campaigns, World AIDS Day activities, event-oriented interventions, and activities such as door-to-door campaigns are largely conducted on the basis of common sense thinking with little reference to previous experience or evaluation, and are usually not evaluated. It must be noted that event-based activities are costly, often intentionally serving the purpose of 'being seen to be doing something', and it is questionable whether they lead to sustained activity (Kelly et al., 2001).

1.4 Voluntary Counselling and Testing (VCT)

VCT was given some attention in the Beyond Awareness Campaigns (Department of Health, 2000) and loveLife campaigns. However, VCT was never the main topic in mass media interventions, while VCT is an important means of prevention and access to treatment. To improve care and support in South Africa, it is necessary that people

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[4] NGO = non-governmental organization

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report for VCT in order to receive treatment and counselling to prevent a further spread of HIV/AIDS. Kelly et al. (2001) mention that there is a continuum of activities that move from prevention through to care and support. For example, prevention may teach people how they can become infected, reducing the fear of infection in the presence of HIV infected people and going some way to reducing the related stigma and discrimination. When people know there is a good care system, they might be interested in taking a test to find out their serostatus, which promotes prevention. Most interventions today are directed at prevention. However, as many people in South Africa are already infected, they will move forward on the prevention-care continuum when they report for VCT. Testing can thus be seen as a bridge between prevention and care.

There are various reasons why VCT did not play a large role in intervention programmes in South Africa until recently. Swanepoel (2003) names a few: there is a weak infrastructure regarding testing facilities and health personnel; a shortage of funds to upgrade these facilities; and people thought the same prevention objectives of VCT could be achieved with prevention campaigns. However, the South African government has plans to improve these shortcomings as will be shown further on in this paragraph.

Most people in South Africa who performed high-risk sexual behaviour do not report for VCT. The HSRC study (2002) shows that two thirds of people who tested HIV-positive did not think HIV could possibly infect them. Only half a million people in South Africa know their status, while an estimated five million people are infected with HIV.

VCT for HIV is now acknowledged within the international arena as an effective and essential strategy for both HIV prevention and AIDS care (Family Health International, 2003). The need for VCT is increasingly compelling as HIV infection rates continue to rise. Literature has shown that high-quality counselling and knowledge of HIV status helps individuals assess their level of risk, develop realistic plans to reduce their risk, and increase safer sex practices. Those people who learn they are seronegative can be empowered to remain disease-free. For those HIV-infected, they have a chance to assess their options for treatment. The South African government has established more than 450 VCT centres with more than 800 counsellors around the country (Department of Health, 2002).

From the findings of the HSRC study (2002), it is clear that VCT services are available in the country and people generally know about such services. As discussed earlier, although most people are aware of the services and how to access them, they do not necessarily make use of them. This might be due to the fact that people lack understanding of the importance of using these services. The HSRC study (2002) suggests that existing prevention campaigns should increase emphasis on using VCT services. Clearly, the need for VCT services will increase as government rolls out the availability of generic anti-retroviral (ARV) therapy in the public health sector in the near future (HSRC, 2002). Swanepoel (2003) states that different companies in the private sector are beginning to provide ARV to their employees because the costs for ARV treatment are lower than the costs for medical treatment of infections.

Recently, the South African government has decided to provide ARV treatment in the public sector in South Africa (see www.tac.org.za). On Wednesday 19 November 2003, the South African government has agreed to a treatment Plan for HIV/AIDS. According to the Plan, free ARV medicines will be available to HIV-infected people in South Africa within five years (de Volkskrant, 20/11/03). On www.gov.za, the South African government states: "It is envisaged in the Plan that, within a year, there will be

at least one service point in every health district across the country, and within five years, one service point in every local municipality". The South African government also states that "These service points will give citizens access to a continuum of care and treatment…" To provide these services, the government needs to upgrade the national health care system. To make sure that this will happen, the government ensures "the recruitment of thousands of health professionals and a very large training programme to ensure that nurses, doctors, laboratory technicians, counsellors and other health workers have the knowledge and the skills to ensure safe, ethical and effective use of medicines" (www.gov.za).

Of course, it will take time to implement these plans and only future will tell whether these plans will produce an effect. However, the plans of the government are very good news for South Africa and it is a big step towards better health care. Free access to ARV will also help to convince people to report for VCT.

1.5 Intervention Media

Today, most health interventions are communicated through television, radio, and printed media (HSRC, 2002). Table 1.2 gives an overview of the HIV/AIDS communication environment in South Africa. It not only shows purposive campaigns, but also other channels through which South Africans receive HIV/AIDS information. Note that an important medium of today is missing on this list: the *World Wide Web* (WWW), which is part of the Internet.

Table 1.2 Overview of HIV/ AIDS communication environment in South Africa (taken from HSRC, 2002)

ACTIVITY	PRIMARY MEDIA	EXAMPLES
Purposive mass media	Television, radio, print (newspapers, magazines), outdoor (billboards, mobile media – e.g. buses, taxis, trains)	• Short duration advertisements or inserts, once-off programmes, talk-shows, drama series, documentary series in broadcast media • Advertisements, news and feature articles, regular columns, supplements in print media • Public relations activities and events linked to mass media dissemination • Outdoor advertisements
Non-purposive mass media	Television, radio, print (newspapers, magazines)	AIDS content within: • News programmes • Once-off programmes, talk-shows, drama series, documentary series • News and feature articles, regular columns, editorials and letters
Purposive small media	Leaflets, posters, booklets, brochures, manuals, videos, exhibitions, murals, signs, utility items	Typically print materials, but can extend to other approaches. Utility items include caps, T-shirts and badges/pins

Events	Community gatherings, sports and entertainment events	Events such as World AIDS Day, but also integration of HIV/AIDS into various socio-cultural events
Dialogue and direct experience	Purposive support systems; health systems; religious and cultural systems; sexuality, gender; legal and rights framework; direct experience of HIV/AIDS; HIV/AIDS-related dialogue	Can include structured and purposive dialogue – e.g. telephone helplines, lifeskills programmes, counselling; knowing one is HIV positive; knowing persons with HIV/AIDS; experience of legal and rights systems; interaction with resource and service-provision systems; cultural practices; religious beliefs; arguments and conversations
Social action	Involvement in HIV/AIDS activities	Can include attending meetings, working within organisations, attending educational events, giving advice, caring for ill persons or orphans

Kelly et al. (2001) state that the impact of these mass media campaigns is moderate. They mention that radio is the main source to which South Africans are exposed to HIV/AIDS programmes, closely followed by television. Television is especially a resource for both urban and rural audiences. Kelly et al. (2001) also note that the dissemination of information is limited due to several factors:

- unidirectional delivery;
- the capacity to deliver only simplified key messages in discrete areas of information;
- the need to ensure that information and messages are intelligible to specific audiences;
- the need to address linguistic variations countrywide;
- the need for repetition of information to facilitate recall;
- the need to use a variety of mediums to reinforce information;
- the need to address the heterogeneity of target audiences;
- the need to meet costs of accessing mass media channels including outdoor, print and broadcast media;
- the need to assess impacts and cost-benefits of interventions.

Kelly et al. (2001) say that there have been no comprehensive attempts to understand the reach and impacts of governmental, private sector, non-governmental organisation, faith-based and other institutional and community-based responses to HIV/AIDS. With regard to intervention models, there has also been little theoretical development, although some national campaigns, notably loveLife and Soul City, have articulated particular frameworks for intervention. However, these are not rigorously theorised. In the case of workplaces and smaller communications campaigns, evaluations are often commissioned internally, and seldom brought into the public domain. Research projects on interventions are usually once-off, *ad hoc* initiatives

driven by researcher interests and availability of respondents. This means that in practice the design of campaigns and texts are not created systematically and not according to process models. Subsequently, this means that interventions are not based on empirical and theoretical research. Only providing information about HIV/AIDS will not make people take control and change their behaviour. Most texts in South Africa focus on a general public and use only knowledge as a behavioural determinant. Other determinants of behaviour are left behind and the needed skills that people need to perform the propagated behaviour are not treated. Interventions are mostly focused on prevention; it is only recently that VCT is brought under attention (Swanepoel, 2003).

1.6 World Wide Web

The WWW is a medium that could help to reduce the shortcomings of traditional media mentioned in paragraph 1.4. Since the introduction of the WWW in 1990, the Web has come into general use at an amazing pace. In the US alone, over half the population has Internet access. A study from Datamonitor among 4,500 adults in France, Germany, Italy, Spain, the UK and the US, shows that 57 percent of the respondents had consulted Internet sources when looking for health information (www.nua.ie). Many teens use mass media, including the Internet, for sexual information (Keller et al., 2002).

The WWW has a number of advantages over traditional media. It provides possibilities to teach and share knowledge and skills that are necessary to change the actual behaviour of people in South Africa. The WWW can also be both informative as well as persuasive. A number of typical features are listed below:

- Feedback/interactive: via the WWW, users can give feedback immediately with for example e-mail, e-learning, chat rooms, and message boards.
- Cost-effective: the Internet is relatively low in cost, especially when considering the possibilities it offers.
- Massive: the Internet is a network that combines the entire world into one community, in which users can exchange documents, pictures, moving pictures, and where they can find a wide variety of information.
- Private: people can use the Internet privately in unobserved human-computer transactions
- Available: the WWW is always available and people can use it on demand.
- Real time: Information on the WWW can be renewed at any time so information is always up-to-date.
- Dynamic sites: a dynamic Web site is able to anticipate the features and wishes of users (Tiggelaar, 2001).

Other advantages are that the WWW can facilitate personal decision-making and risk-assessment; and provide online peer support through message boards, chat rooms, and e-mail (Keller et al., 2002). Online support groups have been shown to positively impact people with AIDS (Eng & Gustafson, 1999 in Keller et al., 2002; Reeves, 2000).

The WWW is not yet a common means of communication in South Africa, when compared to Western countries. In 2001, the total number of Internet users in South Africa was 2,886,000 (see table 1.3). Of these users, 1,501,000 were corporate users (World Wide Worx, 2002). The estimated population of South Africa was 44,8 million people in 2001 (Statistics South Africa, 2001). This means that in total, only 6.4% of

South Africans had Internet access in 2001. This number is very small in comparison to Europe, where 38% of all households had Internet access in 2001. In 2002, this number grew to 43% (Ministerie van Economische Zaken, 2003). Initiatives from the South African government should lead to more than 2 million Internet connections in South African academic institutions by 2006 (now 475,000).

*Table 1.3 Internet access in South Africa (World Wide Worx, 2002)*

YEAR	DIAL-UP	ACADEMIC	CORPORATE	TOTAL
2001	960,000	425,000	1,501,000	2,886,000
2002	1,115,000	475,000	1,714,000	3,304,000

Looking at the statistics of Internet use in South Africa, it is clear that young people make up a large part of Internet users. It must be noted that young people in this thesis are considered aged 15-24 years. This definition is taken from the UN General Assembly Special Session on HIV/AIDS (UNGASS), which allows for uniform monitoring across countries (HSRC, 2002). Young people are more vulnerable to contract HIV/AIDS as they experiment with sex. Young people also use mass media, including the WWW, as an information source for sexual information, as stated earlier in this paragraph.

Many of current Web sites in South Africa concerning HIV/AIDS do not make use of the advantages that communication via Web sites offers. Although Web sites about HIV testing exist, none of them originate from South Africa. Of course, people can search the Internet for information on HIV testing, but South African youngsters would not find a Web site with specific information about VCT in South Africa. However, there are South African Web sites about HIV/AIDS in general, where young people can find information about the topic in general.

A good example of such a Web site is www.lovelife.org.za (see figure 1.1). This Web site originates from South Africa, and it is aimed at young people. LoveLife was launched in 1999 and focuses on reducing the HIV infection rate among young South Africans. For example, loveLife uses television programmes and combines youth issues with health education on their Web site. HIV testing is not the central theme of loveLife's Web site. However, it is one of the most frequently visited Web sites on HIV/AIDS targeted at young people in South Africa. As mentioned above, Web sites that primarily focus on youth and VCT (such as hivtest.org, an American based Web site) do not exist in South Africa. Therefore, the evaluation checklist that will be presented in §5.1 will be tested on loveLife's Web site in §5.2.

Figure 1.1 Homepage lovelife.org.za
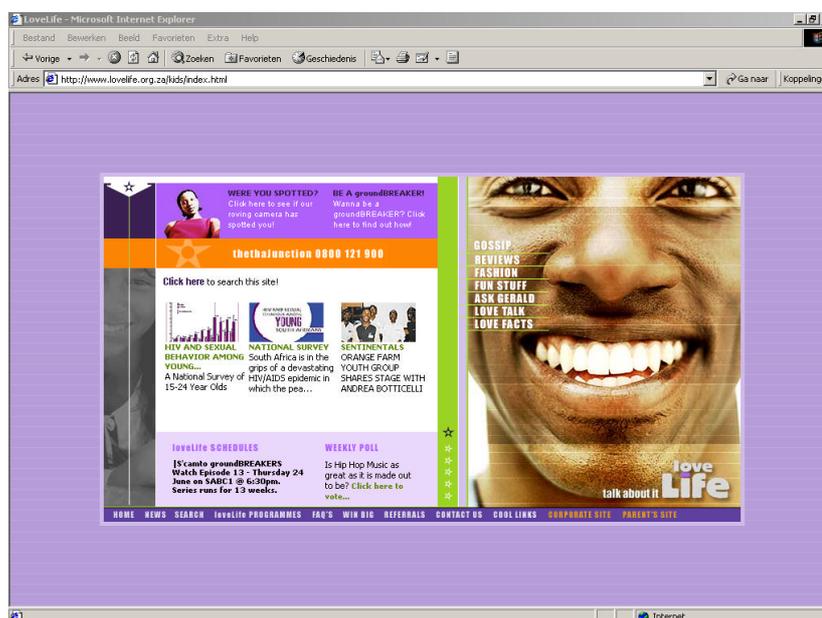
1.7 Summary

This chapter gave an overview of the background of this thesis. It became clear that HIV/AIDS is a severe problem that affects the whole world, and in particular Sub-Saharan Africa. One of the most affected countries in that area is South Africa. Until recently, the South African government did not pay a lot of attention to the HIV/AIDS epidemic in the country. Fortunately, the tide has turned and HIV/AIDS is now a priority of concern for the South African government.

A major problem is the fact that only few people report for VCT in South Africa. So far, VCT has only been of secondary interest to mass media interventions regarding HIV/AIDS. However, it is recognised more and more that VCT is of large importance in the battle against HIV/AIDS. VCT can be seen as a continuum of activities that move from prevention through to care and support. Recently, the South African government has agreed to provide ARV in the public sector. In due time, this could be stimulating people to report for VCT.

VCT communication has so far primarily been the task of printed media and radio and television. These means of communication all have shortcomings. The WWW is a medium that could reduce these shortcomings to some extent. A lot of WWW users in South Africa are young people (mainly students in secondary and higher education), and their number is expected to rise in the future. To make sure that Web sites built for the purpose of persuading people to report for VCT are useful and, for this purpose to provide Web site designers with an evaluation checklist, it is necessary to study empirical literature.

The aim of this thesis is therefore to produce a literature based evaluation checklist on content and formal design of Web sites targeted at young people to persuade them to report for VCT.

2 TOWARD CONTENT HEURISTICS

2.1 Introduction

The previous chapter discussed the HIV/AIDS epidemic in South Africa and the need for better communication regarding VCT. This chapter will discuss a theoretical background for determining considerations as to the content of VCT Web sites that have to be made when evaluating such sites.

2.2 Integrative Model of Behavioral Prediction

Witte (1999) points out that most health communication theories are models of individuals' health-related and health information-seeking behaviours. As such, they identify important variables and specify how these variables work together to produce a desired outcome (e.g. report for early VCT). Through careful laboratory and field research, much knowledge has been accumulated on how to effectively motivate desired behaviours. In order to motivate desired behaviours through communication, specific beliefs need to be addressed. The health communication theories described below can be used to identify specific beliefs. Bartholomew et al. (2001) name three models that are used most frequently to identify determinants of behaviour:

- Health Belief Model (HBM)
- Social Cognitive Theory (SCT)
- Theory of Planned Behaviour (TPB)

Fishbein and Yzer (2003) mention that there are only a limited number of variables that need to be considered in predicting and understanding any given health related behaviour. These variables are contained in the three theories listed above. Fishbein and Yzer (2003) have integrated these theories into one model that provides powerful tools for identifying the specific beliefs that need to be addressed to change or maintain a given health behaviour. The HBM, SCT, and TPB will first be outlined individually before the integrated model will be treated.

Health Belief Model
The HBM proposes that people will decide to behave in a healthy way when:

- they are susceptible to a high-risk;
- the risk has severe negative consequences (e.g. cancer, HIV/AIDS);
- they perceive a high self-efficacy;
- they believe that the benefits of performing the desired behaviour outweigh the costs of performing that behaviour. (cf. Brug et al., 2001, Perloff, 2001, Fishbein & Yzer, 2003)

Perloff (2001) adds that the first two beliefs focus on the threat posed by the disease. The second two focus on coping with the consequences of the actual behaviour. Perloff also notes that the HBM has advanced knowledge about AIDS preventive behaviour, but it also has some limitations. "The model does not make precise predictions about the impact of health beliefs on behavior" (Perloff, 2001: 24). Perloff also states that perceived susceptibility is not something that people always recognise, especially regarding HIV/AIDS. However, Fishbein and Yzer (2003) do not integrate perceived

susceptibility into their model. They actually reject perceived risk as a proximal determinant. They state that "the support for the role of perceived risk is inconsistent. Whereas methodological and conceptual flaws in perceived risk research may account for part of this inconsistency, available evidence suggests that perceived risk is best viewed as a 'distal' rather than as a 'proximal' predictor of intention and behavior" (Fishbein & Yzer, 2003: 166).

Social Cognitive Theory
The SCT was developed by Bandura (1997) and covers both determinants of behaviour and the process of behaviour change. According to SCT, two primary factors determine the likelihood that someone will adopt a health-protective behaviour. First, a person must believe that the benefits of performing the desired behaviour outweigh the costs of performing that behaviour. Second, a person must have a high self-efficacy. In other words, a person must believe that he is able to perform the recommended behaviour, even when barriers make it difficult to perform that behaviour (Fishbein & Yzer, 2003).

Theory of Planned Behaviour
The TPB is an extension of the Theory of Reasoned Action (TRA) (Ajzen, 1988, in Bartholomew et al., 2001). These theories both focus on determinants of behaviour. The TPB, however, also looks at background variables that can influence the actual behaviour, whereas the theory of reasoned action does not. Perloff (2001) explains that the TRA is useful in predicting behaviour over which people have volitional control, but is less helpful in explaining actions that are not under people's control. When people belief that they are not able to control a particular behaviour, they will experience more problems to translate intention into action.

The TPB states that the intention of behaviour is the best prediction of the actual behaviour (Brug et al., 2001). The intention of reporting for VCT consists of the following determinants:

- attitude toward VCT
- beliefs about social influences regarding reporting for VCT (subjective norm)
- beliefs about self-efficacy with regard to reporting for VCT
- beliefs concerning the consequences of taking an HIV test (response-efficacy)

The attitude toward a behaviour is a judgement that performing the behaviour is good or bad (Ajzen & Fishbein, 1980). An attitude consists of two elements, namely beliefs about the consequences of the behaviour, and the evaluation of these consequences.

The subjective norm concerns an individual's inclination to social influences, i.e. whether a person would go along with the views of people whom he or she respects. Again, there are two components that determine the subjective norm: normative beliefs, or beliefs that people one respects recommend that you perform the behaviour, and the motivation to comply, one's desire to do what these people say (cf. Perloff, 2001).

The following figure (figure 2.1) explains the relationship between the determinants listed above.

Figure 2.1 Theory of Planned Behaviour (taken from Brug et al., 2001)

Feedback
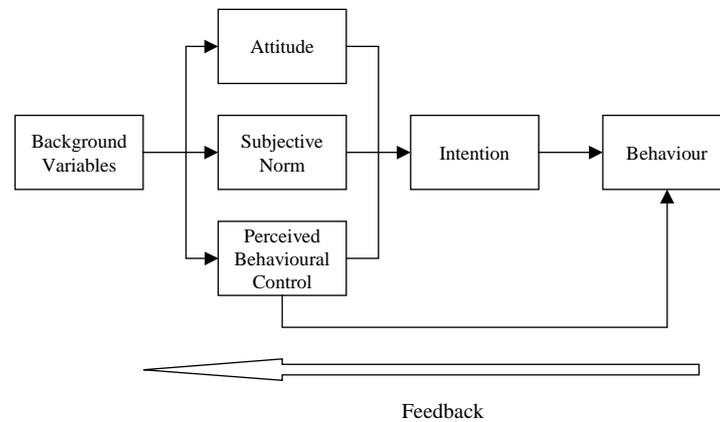
Integrative Model of Behavioral Prediction

Fishbein and Yzer (2003, p.166) state that "taken together, these three theories identify a limited number of variables that serve as determinants of any given behaviour". Furthermore, they indicate that "most behavioral theories suggest three critical determinants of a person's intentions and behaviors: (a) the person's attitude toward performing the behavior; (b) perceived norms, which include 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 (c) self-efficacy, which involves the person's perception that she or he can perform the behavior under a variety of challenging circumstances".
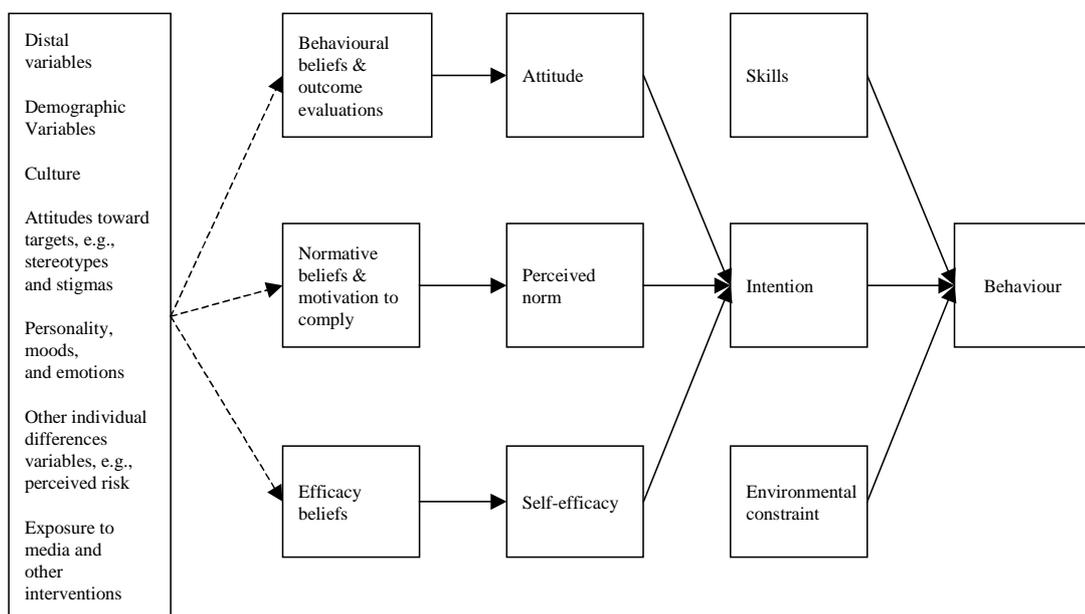
Thus, Fishbein and Yzer (2003) have integrated the three considered theories into one model that they call an *Integrative Model of Behavioral Prediction* (see figure 2.2). Fishbein and Yzer (2003) state that "according to the model, any given behavior is most likely to occur if one has a strong intention to perform the behavior, if a person has the necessary skills and abilities required to perform the behavior, and if there are no environmental constraints preventing behavioral performance. When a person lacks skills to perform the behaviour or when environmental constraints are present, a successful intervention will be directed either at skills building or at removing (or helping people to overcome) environmental constraints".

Otherwise, if a person has not formed strong intentions to perform the behaviour in question, the model proposes that there are three primary determinants of intention: (a) the attitude toward performing the behaviour, (b) perceived norms concerning performing the behaviour, and (c) one's self-efficacy with respect to performing the behaviour. Then, it is important to realise that the relative importance of these variables as determinants of intention will depend upon both the behaviour and the population being considered (cf. Fishbein and Yzer, 2003). For example, a behaviour that is primarily driven by attitude in one culture could be primarily driven by norms in another culture. Therefore, it is important to first determine the degree to which the intention is driven by attitude, norms, or self-efficacy in the targeted population before developing interventions.

The model in figure 2.2 also shows that attitude, perceived norms, and self-efficacy are all, themselves, functions of underlying beliefs about the outcomes of performing

the behaviour in question, the normative proscriptions of specific referents, and specific barriers to (or facilitators of) behavioural performance (see Fishbein and Yzer, 2003). For example, the more a person believes that performing the behaviour in question will lead to good outcomes and prevent bad outcomes, the more favourable that person's attitude should be toward the behaviour. The variables on the far left of the model consist of more traditional demographic, cultural, attitudinal, and other individual difference variables. According to Fishbein and Yzer (2003), these types of variables play an indirect role in influencing behaviour.

Figure 2.2 Integrative Model of Behavioral Prediction (taken from Fishbein & Yzer, 2003)

2.3 Applying the Integrative Model of Behavioral Prediction

Fishbein and Yzer (2003) state that identifying the behaviour that is the target for change is the first implication in using the integrated model. Furthermore, they give several elements that define the behaviour that has to be changed: the action, the target, and the context. When a behaviour that has to be changed has been identified, the model can help by explaining why some members of a target group are performing the desired behaviour and others are not. This is done by determining to what extent intention is influenced by attitudes, norms, or self-efficacy in the various groups in the target population, and by identifying the specific beliefs that discriminate between those who do or do not intend to perform the desired behaviour. These discriminating beliefs need to be addressed in a theory-based communication. According to Fishbein and Yzer (2003), communication is the best way to create or change specific beliefs. When the beliefs are appropriately selected, these changes should influence attitudes, perceived norms or self-efficacy so that the intention will be turned into the intended behaviour.

Different types of interventions will be necessary when (a) a person has formed an intention to perform the recommended behaviour but is unable to act upon it, or (b) a person has little or no intention to perform the recommended behaviour. If a person has formed the desired intention, but is not acting upon it, the intervention should be directed either at skills building or at removing (or helping to overcome) environmental constraints. If a person has not yet formed the desired intention, an intervention should be directed at changing attitudes, norms, or self-efficacy. Subsequently, this should further lead to the identification of a number of behavioural, normative, or control beliefs that clearly discriminate between people who do or do not engage in the behaviour in question.

2.4 Summary

In this chapter, the Integrated Model of Behavioral Prediction by Fishbein and Yzer (2003) has been discussed. In short, the model is designed to identify specific beliefs that may need to be addressed to change or maintain a given health behaviour. In order to change a behaviour, it has to be clear whether the targeted population has or has not formed an intention to perform the behaviour in question. From there on, appropriate measures can be taken to change either the intention by addressing relevant beliefs and other variables lying behind those, to improve skills, or to remove environmental constraints. In the following chapter, the theory treated in this chapter will be applied to identify beliefs that need to be addressed in a Web site that aims to persuade young South Africans to report for VCT.

3 SELECTION OF CONTENT HEURISTICS

3.1 Introduction

The goal of this chapter is to produce content items for the evaluation of Web sites that aim to persuade young South Africans to report for VCT. In chapter 2 the Integrative Model of Behavioral Prediction (IMBP) was discussed. This model helps to identify the specific beliefs that should be addressed in communication, for instance via web sites. The IMBP model (see figure 2.2) works from right to left. This implicates that the first action to be taken is to identify the behaviour that is the target for change. Fishbein and Yzer (2003) state that the most effective way to change a behaviour, is to concentrate on a specific behaviour (e.g. throw away everything related to smoking in your house) rather than on more general goals (e.g. stop smoking). In this case, the specific behaviour that will be in focus is reporting for VCT. The elements that define this specific behaviour are (cf. Fishbein and Yzer, 2003):

- the action: reporting
- the target: for VCT
- the context: testing site (clinic, hospital, etc.)

Moreover, Fishbein and Yzer (2003) state that it is important to include an additional element of time. Hoeken (1998) shows that the time between the measurement of the attitude and the actual behaviour should not be too long. E.g. when someone hears about a good book, he might think about buying it, but when time passes by, he forgets what his plan was. This means that people who look at a Web site that deals with persuading people to report for VCT, should report for VCT as quickly as possible. The ideal situation would be when someone examines a Web site and decides to report for VCT the next day. More realistically, a week would be a good time frame for people to take action and thus report for VCT.

The next step in the model is to find out whether the target population, in this case South African youth aged 15-24, has formed the desired intention to report for VCT or not, and whether a lack of skills or environmental constraints are present. As shown in chapter 1, empirical research has pointed out that the intention to report for VCT in South Africa is low.

The suggestion in Fishbein and Yzer (2003) will be followed to identify attitudes, norms and self-efficacy, in order to find out which variables are proposing the most barriers to the intention. To find out why young South Africans have a negative attitude toward VCT, the relevant behavioural beliefs have to be determined. The variables that determine the beliefs are derived from the empirical studies that are used in this thesis. These variables can be placed in the far-left box of the model in figure 2.2, which contains the 'distal variables'. According to the model, these variables indirectly determine behaviour. Thus, when one would go through the model as proposed by Fishbein and Yzer (2003), first the intention has to be determined by researching the following three variables: attitude, perceived norm, and self-efficacy. The model shows that these are influenced by the 'distal variables'. However, the distal variables are not clearly linked to the rest of the model. First, the distal variables are placed in one single box, and are not differentiated between categories. Second, the distal variables are

linked to the three beliefs that determine intention by dotted lines, which implicates a vague connection. Third, three dotted lines originate from one single point in the box to three directions. This leaves it unclear which distal variables determine the different beliefs to which they relate. Fishbein and Yzer (2003: 166) have reproduced the model like this, because, as they state, "although there is considerable empirical evidence for the role of attitude, perceived norms, and self-efficacy as proximal determinants of intention and behavior, the support for the role of perceived risk is inconsistent". Perceived risk can therefore best be seen as a "distal" variable. The fact that there is not enough empirical evidence for the role of distal variables as "proximal" determinants, applies to all the other distal variables in the IMBP model. As stated before, the empirical studies that are used in this thesis predominantly concentrate on these distal variables. Therefore, the box with the distal variables will be one of the areas used to find variables that determine the behaviour researched here: reporting for VCT.

Two other boxes in the model directly influence behaviour, namely 'skills' and 'environmental constraints'. The empirical studies described in this thesis do contain some data concerning these two variables. Therefore, these will too be included in this thesis. Summing up, three groups of variables will be addressed, that may be of direct or indirect relevance for the VCT-uptake behaviour of South Africans: distal variables, skills, and environmental constraints. The adaptations that are brought about in the IMBP model are illustrated in figure 3.1, where reporting for VCT is determined by skills, environmental constraints, and distal variables.

Figure 3.1 Adapted Model of Behavioral Prediction
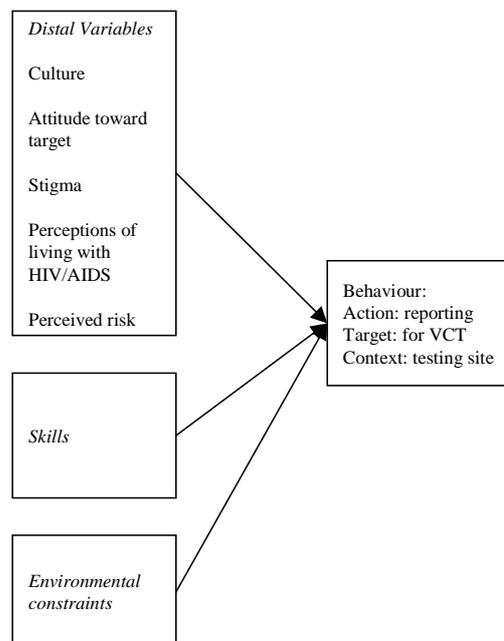
Empirical studies
In this chapter, four studies on determinants of testing behaviour will be analysed in order to identify relevant distal variables, skills, and environmental constraints, and to find out why the intention to report for VCT is low. These studies will first be introduced, after which the distal variables will be discussed in §3.2.

Van Dyk & Van Dyk (in press; 2003) have conducted a study on structural and psycho-social barriers to VCT in South Africa. In Van Dyk & Van Dyk's study (in press; 2003), Unisa (University of South Africa) students had to find and interview five subjects in the region they lived in. This lead to a response from a diverse population. The population represents most of the major ethnic groups in South Africa (blacks, whites, coloured, Asiatic, and other ethnic groups). This population also represents part of the academic population of South Africa who have Internet access. The age distribution was from below 20 to plus 40. 1422 participants filled in a semi-structured questionnaire. Because Unisa is a distance university, people from all over South Africa were included in the research. The purpose of the research was to establish beliefs and attitudes of the participants towards VCT. The determinants that Van Dyk & Van Dyk found are divided into two categories: service-related barriers to VCT and psycho-social barriers to VCT. Service-related barriers refer to logistical problems, confidentiality issues, and lack of incentives. Psycho-social barriers relate to disclosure, fear of rejection, and mental problems.

As stated before, the Human Sciences Research Council study (HSRC, 2002) found several determinants concerning testing behaviour in South Africa. The HSRC study is a survey on South African HIV prevalence, behavioural risks and mass media. For this study a sample of 13,518 individuals was selected. Among those people, 73.7% agreed to participate in an interview, and of those interviewed, 88.7% gave a specimen for an HIV test. The sample was taken to present the results on geographical and racial basis. The aim of this study was to obtain accurate information on national HIV prevalence, improved understanding of the social-cultural context in which the epidemic occurs, and the relative impact of interventions in order to get an effective response to the epidemic.

The Henry J. Kaiser Family Foundation[5] (KFF, 1999) conducted a study on young people's issues, concerns and attitudes toward HIV testing in the USA. Because the situation of these youngsters is comparable to the situation in South Africa (ethnic diversity, poverty), this study will be taken into account. The study was designed employing both a series of focus group sessions and private one-on-one interviews with teens in four of the top 10 cities having the highest incidence of AIDS cases among those aged 13 to 25: Miami, Houston, New York, and Newark (H. J. Kaiser Family Foundation, 1999). 73 teenagers participated in this study of whom most teens (96%) were of colour (African-American and Latino) and 68% had been HIV tested. This target population is highly useful in finding determinants of VCT in South Africa.

Boswell and Baggaley (2002) carried out a similar study in the USA. They found barriers to testing and strategies to increase the use of VCT by young people (they refer to young people by their age: 15-24 years).

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[5] The Henry J. Kaiser Family Foundation is an independent philanthropy focusing on the major health care issues in the USA. The Foundation is an independent voice and source of facts and analysis for policymakers, the media, the health care community, and the general public (for more information see http://www.kff.org). The Kaiser Family Foundation is the principal organising force behind loveLife - South Africa's largest national HIV prevention initiative.

The findings of these four studies will be used to identify specific variables that contribute to the intention of young South Africans to report for VCT or not in the following paragraph.

3.2 Analysing variables from the model

In this paragraph, three types of variables: distal variables, skills, and environmental constraints, will be discussed. The attentive reader will notice that not all distal variables from the integrative model of behavioural prediction are included in the following sections (see figures 2.2 and 3.1). This is because some of the variables are difficult to measure (e.g. personality, moods, and emotions) and only limited empirical data was available. Thus, several distal variables will be discussed in §3.2.1. Subsequently, the variables skills and environmental constraints will be treated in §3.2.2 and §3.2.3 respectively.

3.2.1 Distal Variables
Culture
Culture is one of the variables that emerges from the examined studies. South Africa represents numerous cultures within its boundaries. Whites, Blacks, Coloureds, and Indians live together in this nation, and cultures differ between and within these racial groups. Especially traditional African beliefs and customs are different from Western perceptions of life, as is illustrated in the following eyewitness story:

> David[6] is an exchange student in Pretoria from Botswana. He invited us for a holiday to Botswana and Zambia. When we arrived in the North of Botswana, he told us that he wanted to visit his aunt in Livingstone, Zambia. Of course we would drive him there. However, after a while he shared with us that it wasn't actually his aunt we were going to visit, but a traditional healer. Apparently, his brother and sister had died the previous year for unknown reasons. He thought there was a spell on his family and that he would be the next victim. He wanted to go to the traditional healer to find out whether there was a spell and how he could prevent himself from being the next victim. We were allowed to witness this event, and we saw how the traditional healer (a woman) gave David some branches of a plant and some leaves to chew on. He later confined to us that these means were to improve his sexual performance. In some way, not completely clear for a Western observer, this was related to reducing the risk of dying in the near future. (Experience of the author, 2002)

This story tells us that this African *student* has a totally different worldview then Westerners do. Van Dyk (2001: 60) says that "the people in Africa experience the world in a very special and different way then Westerners do." According to Van Dyk (2001), some people might ascribe AIDS to witchery and evil. This also has implications for sexual activities. Perloff (2001) states that sex in most African societies is viewed positively, as an essential form of recreation between lovers, casual acquaintances, and even adulterers. Women gain respect in their family or clan based on the number of children they bear. Mbiti (1969, in Van Dyk, 2001) states that "the failure to bear children is for an African woman worse than committing genocide."
Males have the freedom to pursue premarital and extramarital sexual relationships. African people prefer not to use condoms because they have a desire to create offspring

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[6] David is an assumed name for reasons of privacy.

for several reasons. When Africans die without leaving any offspring, nobody of their "blood" will be around to "remember" them, to keep them in a state of "immortality" (Van Dyk, 2001). When they report for VCT, they might risk losing their ability to reproduce.

Van Dyk (2001) mentions that cultural beliefs of traditional Africans should be taken into account in AIDS prevention programmes.

Attitude toward target
In paragraph 3.1, the target of the behaviour is Voluntary Counselling and Testing (VCT). Literature shows that some people think it is not necessary at all to know the results of an HIV test, because they believe they have not had any high risk behaviour regarding HIV/AIDS.

The KFF study (KFF, 1999) found that teens who had unprotected sex, were convinced they personally have not been seriously at risk. According to the study, the emotional need to 'trust' partners strongly contributes to lowered perceptions of risk and the belief that it is neither necessary nor beneficial to be tested for HIV (KFF, 1999). The HSRC study (HSRC, 2002) shows that of South Africans aged 15 years or more who agreed to be tested, 18.9% said they had previously been tested and they were aware of their HIV serostatus. It is noted that "nearly two thirds (62.6%) of those HIV positive that were unaware of their serostatus did not think they could possibly get infected by HIV" (HSRC, 2002: 64). These people are convinced they no have reason to believe that they are at risk for having HIV/AIDS, while they have performed high risk sexual behaviour in the past. This perception is also recognised by Boswell and Baggaley (2002). The consequence for these people is that they believe knowing your HIV status is not necessary at all. Hence, their attitude toward VCT is negative.

Stigma
Both Van Dyk & Van Dyk (in press; 2003) and the Kaiser Family Foundation study (KFF, 1999) mention that stigma is a large barrier for people to report for VCT. First, the determinant stigma will be explained. The word 'stigma' originates from ancient Greek. It literally means brandmark and can be described as a quality that 'significantly discredits' an individual in the eyes of others (cf. UNAIDS, 2002). UNAIDS (2002) further describes stigma as a process of devaluation. Stigma is frequently related to HIV/AIDS and builds upon and reinforces earlier negative thoughts. People with HIV/AIDS are often believed to have done something wrong and to deserve the consequences. Mostly, these 'wrong behaviours' have to do with sex or illegal activities such as drug use. Men with HIV/AIDS could be seen as homosexual, bisexual or as having had sex with prostitutes. Women could be seen as having been adulterous or as having been sex workers. Family, friends and community often practice stigma and discrimination, because of fear, ignorance and because it is easy to blame those who have been affected first.

Perloff (2001) gives explanations of why people stigmatise people living with AIDS (PWAs). People are simply afraid they will contract HIV/AIDS when they are "exposed to" PWAs. This is called the instrumental basis of a negative attitude toward AIDS by psychologists (cf. Perloff, 2001). A second explanation for AIDS stigma emphasises associations between AIDS and social objects. For example, HIV/AIDS may be associated in an individual's mind with homosexuals and drug users. When one has negative feelings about homosexuals, these feelings will come into a person's mind

when he or she thinks of HIV/AIDS. For a detailed discussion of HIV/AIDS related stigma and VCT, see Lodder (2004)[7].

Being stigmatised is a consequence that people fear when they report for VCT. Therefore, stigma can determine the attitude toward reporting for VCT. Van Dyk & Van Dyk (in press; 2003) name fear of discrimination from health care workers and fear of breach of confidentiality by health care workers as important stigma barriers. Some people believe that health care workers will disclose their status to their family after the test. Participants in Van Dyk & Van Dyk's studies feared rejection by family and community members when their results would be disclosed. The fact that people with HIV/AIDS are discriminated and ostracised in South Africa means that on family and community level, people are not supporting people who test(ed) themselves. Of people who would report for VCT, many would go to a clinic where nobody knows them, so that their family and friends would not find out about it (Van Dyk & Van Dyk, in press). People also fear the reactions of their partners, which could result in e.g. violence or break-up of marriages. Another problem in this case is that in the black community, it is often so that health care workers are familiar with most clients, due to an interweaved community life and extended family systems. Therefore many counsellors see it as their moral duty to inform family of test results and thus do not observe confidentiality (cf. Van Dyk & Van Dyk, 2003).

The HSRC study (HSRC, 2002) confirms these facts. In this study it is mentioned that only 19.8% of people who know about VCT services actually made use of these services (HSRC, 2002). Of participants who never went for a test, 59.4% said they would report for VCT if confidentiality was maintained. According to the HSRC (HSRC, 2002), this suggests that reasons for reporting for VCT are more closely related to negative perceptions (beliefs) of services (and indirectly to stigma) than to the availability of services.

Stigma also came forward in the KFF study (KFF, 1999). According to the Kaiser Family Foundation (KFF, 1999) stigma play an important role in young peoples' social environment. The KFF study (KFF, 1999) shows that young people are afraid to report for VCT because their sex partners and peers would think they are "not clean" or that they did something wrong in their friends' eyes (e.g. go to a prostitute or having gay sex). Having a Sexually Transmitted Disease (STD) is a serious impediment to their ability to pursue relationships, not only with a potential sexual partner, but also with their peers. Teens only tell a very limited number of people that they had been HIV-tested, as doubt and suspicion would be raised among their peers, especially those of the other sex. Especially teens have a hard time because it is important for them to belong to a group of peers. Reporting for VCT would be a strange behaviour according to peers and individuals could be treated differently or they could be ostracised (cf. KFF, 1999). This also means that peers have a lot of influence on the behaviour of youngsters. This means that the outcomes of the behaviour (reporting for VCT) could lead to negative reactions from their environment. This influences their attitude toward VCT in a negative way.

The following story is a personal experience from Mrs. D. Ehlers (lecturer UNISA).

On a farm in Mpumalanga, South Africa, several black families lived together. Each of the families had about 5 children. One of the families hid an eight-year-old girl whose parents

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[7] Lodder's research can be found on www.epidasa.org.

had died from AIDS. Apparently she herself had AIDS too and she died after eight months. Nobody was aware of the fact that a girl was hidden in one of the houses, not even the other families. Only when the funeral took place did people find out about the girl. The fact that she was hidden away from other people shows the strong stigma on AIDS in the black community.

This experience illustrates the heavy stigma on people with HIV/AIDS in South Africa. Because of this stigma, people believe that reporting for VCT will result in negative outcomes (ostracism, discrimination).

Overall, these negative influences from South African society imply that people believe that the people in their direct environment will not accept a negative testing result. The empirical studies also point out that many people indeed prefer to be tested in a clinic where nobody knows them, so that family and friends will not find out that they have been tested or that they are HIV positive. Subsequently, this implies that the motivation for people to comply with the societal 'standards' is high.

Perceptions of living with HIV/AIDS
Besides stigma, the perceptions of living with HIV/AIDS of many participants in both Van Dyk & Van Dyk (in press; 2003) and the KFF study (KFF, 1999) are a barrier for people to report for VCT. According to the KFF study, "teens have strongly pessimistic views of what life is like for HIV-positive people, often believing the inevitable consequence is depression, ostracism within one's community and a sickly, wasting body". These believes cause young people to think in a negative way of the consequences of reporting for VCT. This results in a negative attitude toward VCT.

Fear of living with HIV/AIDS also creates confusion for people during the days between the test and the results. They might even not return for the result test. Van Dyk & Van Dyk (2003) mention that people had feelings of fatalism and depression because they believed that there is nothing they could do about HIV/AIDS. A study on sex workers in KwaZulu Natal, South Africa, revealed that they did not want a positive result disclosed to them. "They believed that the knowledge of a positive result would result in mental anguish, that would threaten their relationship with steady partners and that they would lose their clients and income" (Morar & Ramjee, 2000 in Van Dyk & Van Dyk, 2003: 8). Van Dyk & Van Dyk (2003) found that of participants who believed it is not advisable for every person to know his or her status, 66.7% believed that "to know your HIV status will cause depression and bring about an early death". This fatalism may actually prevent any form of sexual behaviour change or self-care. The behaviour researched, reporting for VCT, could impose the negative consequences discussed above. These people believe that an HIV test will bring nothing but negative consequences regarding their health. Therefore, the beliefs contribute to a negative attitude toward the behaviour.

Perceived risk
The final variable to be discussed is perceived risk. The perceived risk of reporting for VCT refers to the risk of what will happen when a test is not taken. Just as would be the case with "stopping with smoking" as intended behaviour, for instance, the perceived risk is what would happen if this behaviour would not be undertaken.

When a South African decides not to report for VCT, he or she risks to infect other people when he or she is in fact HIV positive. As shown in the paragraph treating stigma, people believe that reporting for VCT will bring about discrimination and

ostracism. One of the reasons of these thoughts is that confidentiality is not safeguarded in testing sites. When someone decides not to report for VCT, he or she does not have to fear that their test details will not be dealt with in a confidential way. However, the believes South African people have about these risks are not considered in the studies discussed in this chapter.

3.2.2 Skills

Skills are the second main variable that will be discussed to find barriers that may exist for people in South Africa to report for VCT. A skill may be defined as "the knowledge and ability that enables you to do something well" (Collins Cobuild English Dictionary). The fact that one has to *report* for VCT, indicates that there will be health staff looking after the patient. This means that reporting for VCT is a behaviour that requires little skill.

3.2.3 Environmental Constraints

Constraints in the environment are directly influencing the behaviour of people according to the integrative model of behavioural prediction (see figure 2.2). In this case, environmental constraints can prevent people from reporting for VCT. In this paragraph, the environmental constraints that exist in South Africa that could prevent people from reporting for VCT will be outlined.

VCT services in South Africa are mainly available in hospitals and clinics. In paragraph 1.3 it is made clear that the South African government has to recruit and educate thousands of counsellors, who are not available at the moment. Van Dyk & Van Dyk (in press) mention that counselling is of poor quality and that more than 2,500 counsellors are necessary to offer VCT services to a mere 10% of the South African population. This present lack of staff and a heavy client load create long waiting periods for clients. People who live in remote areas have difficulties travelling to a testing site for the test and might not return for the results when they are available a few weeks later. Masuku (2001, in Van Dyk & Van Dyk, in press) found that "up to 80% of clients who were tested for HIV in certain clinics in South Africa, did not go back for their results". These problems create waiting lists for clients who may not have the time to line up for hours to be tested or to receive counselling.

As stated before, many people prefer not to report for VCT in clinics or hospitals because of stigmatisation and lack of confidentiality. Apparently, many hospitals in South Africa have a special room for HIV counselling. This fact makes it difficult for clients to go to these hospitals because they are afraid that they will immediately be labelled as being HIV positive (Fawcett, 2001, in Van Dyk & Van Dyk, in press).

As shown in §3.2.2, lack of confidentiality is a huge stumbling block in the provision of comprehensive VCT services in South Africa. Black communities have a closely-knitted community life and extended family systems. Consequently, it is often inevitable for health care workers to be familiar with most of the clients that come for counselling, and their roles as counsellors, friends and family often become blurred (Van Dyk, 2001).

The barriers described in this paragraph can only be overcome by ameliorating testing facilities, appointing enough skilled counsellors, establishing trust in counselling services, and upgrading public transport.

3.3 Selection of variables to target

In order to persuade people to report for VCT, certain beliefs that now stop people from reporting for VCT have to be changed. The previous paragraph set out the variables that influence VCT-uptake behaviour. The next step is to decide which variables should be targeted in a Web site. The variables that were defined in paragraph 3.2.1 have to be filtered in some way to come to a set of variables that can be changed in order for young South Africans to report for VCT. Fishbein and Yzer (2003: 173) mention three things to consider when identifying beliefs to be changed. First, the belief should be strongly related to the intention or behaviour one wishes to change. Second, there should be enough people who do not already hold the targeted belief. Finally, one must consider whether it is in fact possible to change the behaviour. The beliefs that Fishbein and Yzer speak of here, are the beliefs that are represented in de adapted model (see figure 3.1) in the black box. However, the criteria that are described by Fishbein and Yzer in my view, can also be applied to the distal variables discussed in this chapter.

With respect to the first criterion, it is shown in §3.2.1 that variables exist from empirical literature that highly correlate with the intention to report for VCT.

The discussed empirical studies showed that a lot of people do not hold the targeted variables.

The final criterion mentioned by Fishbein and Yzer (2003) needs to be rephrased. They say that one must consider whether it is possible to change the behaviour. In this case, the focus will be to see how fair it is to convince someone of something when that something is not in accordance with reality: e.g. telling people that when they come to the Netherlands, they will automatically get a steady job and a nice house, which is not a fact at all.

In a nutshell, the criteria for the relevant distal variables are:

1. has a relation been shown with VCT-uptake behaviour?
2. does the variable apply to a large group of possible users of the Web site?
3. is it fair to address this variable as long as the actual situation as to VCT practice in South Africa is not changed?

These criteria will be integrated in a matrix (see table 3.1) together with the distal variables that are identified in §3.2.1. Subsequently, the variables will be credited with a plus (+) when from the available literature, it can be concluded that the specific variable meets the criterion. When it is not sure whether the variable meets the criterion or not, it will be awarded with a plus/minus (+/-). When the variable does not meet the criterion, it will be given a minus (-).

Table 3.1 Selection of variables to be addressed in Web sites

		CRITERIA		
		Relation shown with VCT-uptake?	Applying to large group of Web site users?	Fair to address variable?
VARIABLES	Attitude toward target	+	+	+
	Confidentiality	+	+	-
	Discrimination	+	+	-
	Rejection from society or family	+	+	-
	Perceptions of living with HIV/AIDS	+	+	+
	Culture	?	+/-	-
	Environmental constraints	+	+/-	-

Table 3.1 shows that only few variables fully meet the criteria. The most important criterion is number 3: is it fair to address the variables? This question is asked because we do not want to tell people lies, as that would impair the credibility of the campaign. This leaves us with only two variables in this matrix as candidates for changing people's beliefs about reporting for VCT: *perceptions of living with HIV/AIDS* and *attitude toward the target*. The other variables cannot be used because it became clear from empirical literature that what these variables would aim at, cannot be changed (like, for instance, culture) or would be in contrast to reality (like, for instance, confidentiality). Confidentiality is not safeguarded in many hospitals and clinics. This makes it very difficult to promote that when one reports for VCT, the results will only be unfolded to the patient. This also applies to discrimination and rejection (see *stigma*).

Concluding, the two variables to be addressed are the attitude toward the target and the perceptions of living with HIV/AIDS. To get a better overview of the variables, the attitudes that people have toward these variables will be listed. They are presented below in table 3.2.

Table 3.2 Selected variables

Variable	*Perceptions of living with HIV/AIDS*
Elements	Causes depression. You will be physically ill. There's nothing to do about it (no medicines). Bring about early death. Lose family and friends. Lose work.

Variable	*Attitude toward target*
Elements	People think they are not at risk, even after having engaged in high-risk behaviour. People trust partners and thus think it is not necessary to report for VCT.

3.4 Addressing the variables via a Web site

Attitude toward target
Some people think it is not necessary to get an HIV test result. In §2.2, the Health Belief Model showed that people see risk or threat as a central determinant for performing certain behaviour. Not all people perceive threat or risk in the same way. Most people use heuristics for looking at the chances that they might have performed high-risk behaviour. Giving people statistical data on risk chances, does not make them stop using heuristics. Also people tend to believe that they have a minor chance in getting involved in an unpleasant situation. This is called unrealistic optimism (Perloff, 2001). The Human Sciences Research Council (2002) showed that people who tested HIV positive, did not think they could possibly get infected (see §3.2.1). A lot of people underestimate their risk because people underestimate what techniques others undertake to protect themselves. Also people have stereotypes of people who run high risks (Bartholomew et al., 2001). Most students belief they are invulnerable in contracting a serious disease. This means that in order to persuade students in South Africa to report for VCT, stress should lie on risk behaviour. To make students aware of their high risk behaviour, risk information can be provided. Bartholomew et al. (2001) give discussions, examples and awareness exercises as practical strategies. This can be put in practice via role-model stories in text and on video, discussion groups and chat.

Perceptions of living with HIV/AIDS
The beliefs that people have of a life after a positive result are quite negative. When we look at table 3.2, most beliefs are related to a lack of knowledge about HIV/AIDS and the possibilities regarding living with HIV/AIDS. Although knowledge does not necessarily lead to behaviour change, information can still be successfully communicated (Bartholomew et al., 2001).

Knowledge about the perceptions of living with HIV/AIDS can be conveyed the same way as the strategies used for perceived risk. This means that the negative perceptions that exist at the moment, should be changed into correct information about the real situation. A Web site has numerous possibilities concerning communication and persuasion. These possibilities include interactive education, chat, discussion forum, instant message boards, real time information, e-mail, and media player. Knowledge can be communicated through role-model stories in text and video, specific information about the current plans of the South African government regarding ARV and VCT, online peer support through discussion groups, e-mail and chat, up to the minute information on VCT and testing sites, and testimonials (e.g. peer reviews). A Frequently Asked Questions (FAQ) page should be available as well. This application is widely used on Web sites to inform people in a simple and a conveniently arranged manner.

General information on HIV testing and VCT
Besides discussing the specific beliefs on the Web site, the site should of course include general information on HIV testing and VCT. A good way of learning about HIV is via an online quiz, which is frequently used on Web sites originating from around the world that treat HIV testing. This way, the user can see whether his knowledge about testing is to the point and correct any wrong perceptions immediately. It is advisable to put a list of testing sites in South Africa per region on the Web site, in order for people to see whether there is a testing site nearby or not.

Languages
Another issue is the language(s) that should be used on the Web site. The HSRC study (2002) found out that a substantial amount of participants agreed with the statement 'There is no information in my own language'. It should be noted that only 0.8% of Africans have English as a home language. Moreover, 60.2% of whites and 83.5% of coloureds have Afrikaans as a home language, whilst 40% of Africans have Sotho languages, Tshivenda or Xitsonga as home languages and 57.2% have Ngoni languages as home languages (cf. HSRC, 2002). It is therefore advisable to offer the Web site in different languages, so that young South Africans can process the information in their own language.

3.5 Summary

The selection of specific variables regarding reporting for VCT has been discussed in this chapter. §3.1 set out the theoretical background that has been treated in chapter 2 and explained how Fishbein & Yzer's model was going to be used to come to a set of changeable variables. An overview of the discussed empirical studies led the way to paragraph 3.2. In paragraph 3.2, three variables have been used to find the variables from the empirical literature: distal variables, skills, and environmental constraints. To select variables that could be changed, the variables that have been identified from the studies have been checked with three criteria in paragraph 3.3. The outcome of this 'check-up' produced two variables that can be targeted for change: the perceptions of living with HIV/AIDS and the attitudes toward the target of young South Africans. The next chapter treats the formal design of a Web site that can be used for health communication.

4 TOWARD FORMAL DESIGN HEURISTICS

4.1 Introduction

The previous chapter dealt with content issues that need to be addressed in a Web site. This chapter treats the formal design aspects of Web sites through which young people in South Africa should be persuaded to report for VCT. Unfortunately, no literature about persuasive Web site design was found at the time of writing this thesis. Therefore, this chapter is limited to formal design heuristics. However, these heuristics will help to optimize the informative character and the communicative aspects of VCT Web sites.

    Since the beginning of the World Wide Web in 1990, the Web has come into general use at an amazing pace. In the US alone, over half the population has Internet access (www.princeton.edu). A study from Datamonitor among 4,500 adults in France, Germany, Italy, Spain, the UK and the US, shows that 57 percent of the respondents had consulted Internet sources when looking for health information (www.nua.ie). Many teens use mass media, including the Internet, for sexual information (Keller et al., 2002). Paragraph 1.5 pointed out that estimates of users in South Africa in 2003 reached 3.3 million, of which 0.5 million are academic users. This number will grow as the South African government has plans to increase Internet access via academic institutions. The advantages of the Internet as a medium to communicate health education have been given in chapter 1. In this chapter the design of Web sites will be discussed by means of literature research. Paragraph 4.2 will treat the design of Web navigation. Subsequently, paragraph 4.3 will discuss the display of information on the Web. Finally, paragraph 4.4 will handle the design of comprehensible Web pages.

4.2 Web navigation

Supporting navigation is an important priority when designing a Web site. Navigation will make users efficiently find the content they are interested in. The World Wide Web is a vast network that consists of numerous sites, which consist of many Web pages. Navigation is the compass in the Internet jungle. Farkas and Farkas (2000) have put together the most important guidelines for designing Web navigation. They point out that the guidelines are equally useful as a means of evaluating existing Web sites. The most useful elements of their study will be displayed below. Nielsen and Tahir (2002) also provide guidelines for designing Web navigation. Their study will equally be treated here.

Designing an effective link
A basic requirement for easy and effective Web navigation is that users must always know what links are available on the current page. In other words, the user must know "what's hot and what's not" (Farkas & Farkas, 2000). When links are not clear, users might miss out on the content they are looking for. Hence, all links should indicate that they are links (cf. Zarcadoolas et al., 2002). The classic cue for indicating a link is underlining, especially when the text and underlining are blue. Blue is in fact the browser default colour for links. Purple is the browser default colour for visited links. Nielsen and Tahir (2002) agree with this and they add that it is not wise to use grey for visited links as some Web sites do, because it is difficult to read. They also mention that the word "links" should not be a heading for links. Another strong cue is the "raised

button" appearance. The semantic meaning of many words or phrases, such as "Search" or "About us", will be reliably interpreted as links. Nielsen and Tahir (2002) state that generic instructions such as "click here" should not be used. It is better to use meaningful text in the link such as "HIV testing" Layout and format are important cues as well. A vertical list of phrases, especially when located in a boxed area at the left of the screen, suggests links because users so often encounter navigation columns with this appearance. Different cues can be linked together when phrases in these columns are underlined, for example.

When effective links have been created, they should be made visible to the users. Cluttered page designs will make it hard for the user to see links. Links will also go unnoticed if they appear below the scroll line and the user fails to scroll to these links. A good strategy to prevent unnoticed links is to make sure that the most important links appear high enough on the page to be viewed without scrolling, regardless of the resolution of the user's monitor, or users should be explicitly informed that more information is below the scroll line (cf. Zarcadoolas et al., 2002). Suggestions to make users see links that are past the scroll line are to break text in mid-sentence an/or use visual design cues to keep people reading past the bottom of their screen.

Links should not only be effective and visible, they should also clearly indicate their destination. Indistinct links can create frustration amongst users. To prevent pages to be cluttered with lengthy text links, which makes them ineffective, one could write relatively brief links and augment them with supplementary text. A similar strategy is to create mouse rollovers (pop-up explanations). Rollovers conserve screen real estate (the viewing area on the screen) and reduce visual clutter. A disadvantage of this method is that the user must move the mouse over the link to get the extra information. Lee, Whalen, McEwen, and Latremouille (1984, in Farkas and Farkas) looked at the effectiveness of adding short descriptors to hierarchical index terms. They found that 80% of lay users preferred pages with descriptors and that they performed significantly better on a page with descriptors than on a corresponding page without descriptors. Graphical links usually consist of icons, which offer some significant advantages over text links. Familiar icons can be processed more quickly and easily than a text link and they are visually more attractive. However, many icons that are intended for an international audience fail to communicate across cultures. Still, there are universal icons that can be used when addressing users from different cultures. Nielsen and Tahir (2002) also suggest that when a link is doing another thing than go to another Web page, it should clearly indicate what will happen. Links to a PDF file, audio and video files, e-mail, or other applications should be explicitly indicated with for example icons that identify audio and video files (e.g. ◀, 🎥, 🎬).

Managing large numbers of links
Web pages generally contain numerous links that have to be managed in an effective way. The great majority of Web sites are structured as hierarchies. The size and shape of a Web site's underlying hierarchy determines the number and destination of the links, and so a good hierarchy is the first step toward a good interface. A Web site can either be broad or deep. Within limits it is better to favour breadth over depth. A possible solution on how to manage large numbers of links is to group them under headings. Nielsen and Tahir (2002) advise to group items in the navigation area so that similar items are next to each other. Zarcadoolas (2002) suggests that displaying the user's path history on each page would allow users an easy method to retrace their steps after

unsuccessful searches. The titles of the Web pages used to link into the current page could be put as links on the current page.

Providing orientation information
The orientation information identifies the site and makes clear its purpose. In general, what the user needs to know is the name of the site, the general purpose, and the sponsor. For information to fulfil the orientation role, it must be highly conspicuous and both brief and very clear. This so that it may be processed quickly. When users enter a site, it is presumable that they navigate from the homepage to lower-level pages. This should be supported by orientation information. It is important to know that some users will navigate directly to a lower-level page (bypassing the home page), especially when they follow a link from another Web page or from a search engine. For these users, orientation information on lower-level pages serves a different role: helping users understand what site they have reached. The homepage should be designed clearly differently from all the other pages on the site, so that users can recognise their starting point. The organisation's logo and/or name should be shown in a reasonable size and noticeable location. All lower-level pages should include the site's name and/or logo to maintain site identity. With regard to continuity, designers should employ certain design elements, such as the logo and recurring colours or fonts, throughout the site. The perception of continuity subtly reminds users what site they are in and assures them they have not followed an external link and left the site. Nielsen and Tahir (2002) add that organisation information should also be included. The common link for organisation information, About <organisation name>, should be included. Also contact information with primary address, telephone number, and e-mail should be directly on the homepage. This could also be done with a "Contact us" link on the homepage that leads to a page with all the contact information of the organisation. Paragraph 3.2.1 showed that privacy and confidentiality are important when communicating delicate information as is HIV testing. Therefore, a "Privacy Policy" link should definitely be present on the homepage of the organisation.

Augmenting link-to-link navigation
In addition to navigating with conventional links, Web users make extensive use of special navigation features built into their Web browsers. These include the Forward and Back buttons, the History button, and the Home button. To augment conventional link-to-link navigation, designers could implement sitemaps, search and index features, and a link to the Web site's home page. A sitemap provides a visual map of the content and structure of the Web site as well as instant access to each branch that is represented. A search facility and an index both provide powerful alternatives to link-to-link navigation. Except when a Web site is very small, a search facility is almost always a highly desirable feature. Research by Nielsen (2000, in Farkas and Farkas) shows that more than half of all users are search dominant. That is, they try to use search as their first information-seeking strategy. The search interface should typically be configured both for users who simply type a word or phrase and for those who wish to formulate more complex searches. The interface, however, should be optimised for the kind of searches that will most often be performed. In order to prevent users from getting disorientated, a link from every page back to the home page should be provided. However, on the homepage itself, an active link to the homepage should not be included.

Zarcadoolas et al. (2002) point out that when designing interfaces, the fact that users may have difficulty spelling should be taken into consideration. The Internet does not have the capacity to anticipate misspellings. However, there are solutions to this problem. Google.com, for example, uses an approximation system that prompts the user when a misspelling occurs with the message, "Did you mean___?". Other possible improvements that would help users when they encounter spelling difficulties include linking unproductive searches directly to an index, table of contents, or a sitemap.

4.3 Display of information on the Web

Besides navigation, a thoughtful display of information can enhance the utility of a Web site significantly. Williams (2000) has written guidelines for designing and evaluating Web pages that effectively reveal the information they are trying to present.

Making display elements legible
Before any element on a screen can contribute to a Web site's message, it must first be seen. Legibility, therefore, should be a primary consideration in the evaluation of any graphic element in a display. The visual elements in a Web page should be large enough to be seen and interpreted. In general, elements that contrast greatly with their backgrounds are relatively easy to see even when they are very small. White on black or black on white show the most contrast. Any display of information, whether on a screen or on a page, should assist users in their efforts to distinguish objects from their backgrounds and from each other. Therefore, busy or distracting backgrounds should be avoided. White backgrounds provide the greatest contrast and, unlike colour backgrounds, are not susceptible to browser or monitor-induced change. When a coloured background is necessary, blue is an acceptable colour to use.

Designing display elements
Understanding how ideas or elements in a body of information relate to each other is predictive of how well information is understood, how well it is remembered, and how quickly and accurately the body of information a Web site contains can be searched. Users seem intuitively to understand this and, consequently, invest considerable effort in trying to discern the organisational structure of information they need to process before they actually begin to process it. Thoughtful design can help users in their efforts to apprehend that structure. Good design reveals structure when it visually mimics the logical relationships that exist among elements in a display. The human visual system attempts to find the structure of information very early in its efforts to process it, and it does so by looking for visual patterns.

A good way to do this is to visually group related elements through the use of space, graphical boundaries, or similarities in lightness, colour, texture, or orientation. Space is a particularly compelling tool for organising a display because the visual system automatically attempts to group elements that are close together. Elements that are visually grouped will likely be perceived as associated with one another. Similarly, elements on a screen that share the same colour or texture or orientation, even if spatially separated, are interpreted as being related in some meaningful way. Unrelated elements should be visually different or spatially separated from one another.

What is important in a display is often determined by the interests and needs of the user. Still, information designers can graphically suggest their own sense of the relative

importance of elements in a display. The following are some specific perceptual attributes that have been found to draw disproportionate attention:

- colour: displaying an element in colour will suggest to the user that it is more important than elements displayed in black and white.
- position: Western readers typically look at visual elements placed in the upper left-hand corner early in the processing of a visual display.
- size: important elements should be larger than less important display elements.
- isolation: important elements should be surrounded with a lot of white space.

The graphical treatment of elements in a display should be consistent and predictable. If the same or similar elements are treated in similar ways, logical or functional relationships are easier to process because they are conveyed and reinforced at a perceptual level, greatly decreasing the burden on short-term memory.

Ensuring that text is readable
Nielsen (2000, in Williams, 2000) and others have found that Web users do not actually read a text, but scan a site's content. Contrary to this belief, Lynch and Horton (1999, in Williams, 2000) say that scanning characterised the behaviour of early Web surfers, but most users today are seeking information and not a free-form, associative experience. Most pieces of information on the Web are relatively small, however, there is an increasing number of sites that present the user with several screens full of text. Therefore, text on the Web should be readable. Apparently, when the quality of text displayed on screens improves, users read faster. When screen flicker is eliminated, when letterforms are smoothed ("anti-aliased"), and when text consists of black characters on a white background, it is possible to read as quickly and as accurately from a screen as it is from paper. There is a growing number of typefaces that are being designed especially for display on screen. It is better to use sans serif typefaces for display on screen. Most readers with normal vision find 12- to 14-point type easy to read. Character smoothing works best on larger typefaces (14-point at least). Both bold and italic typefaces are used for emphasis and, consequently, should be used sparingly. Use bold when there is little contrast in darkness between the type and its background.

Lines of type shorter than 40 characters and longer than 60 characters should be avoided, except for headings. While setting text in all caps may sometimes be appropriate for headings or other short text segments, it should never be used for extended text. Headings and subheadings could be used to help reveal visually the relationships among the text elements they label.

Using pictures and illustrations
The role of images on screens should be communication, therefore, in general, using pictures that are strictly decorative should be avoided. When visuals are used, it is wise to supplement them with explanatory text or text labels. A splash intro should be avoided as Internet connections can be slow and people might turn away from the Web site when they do not enter the site immediately. The same goes for pop-up windows, which are very annoying, and moreover they do not help to establish a credible Web site.

4.4 Designing comprehensible Web pages

When developing Web pages, one should consider comprehensibility. Spyridakis (2000) has developed guidelines and related text features to help maximise a reader's comprehension and improve the effectiveness of Web sites.

Selecting and presenting content
User's prior knowledge and interests should be considered when selecting content and announcing its presence. The next step is to consider the amount of information to put on each page. An informative, concrete title helps to orient users, whether they have come from inside or outside a site. Readers also become oriented when they encounter an introduction or introductory sentence that specifies the topic and the intended audience.

In selecting and presenting content, Web designers should also consider the amount of information per page. Less information on a page – and hence more pages – allows users to more easily find the information they need and read and retain it than a site with a lot of information on a long page. However, a longer page can provide users with a wide range of content from which they can develop a broader view of the information, retaining a similar amount of information overall as readers of shorter pages. A writer must weigh these tradeoffs given a site's purpose, content, and audience.

Manipulating style
Writing style concerns the way in which authors manipulate language to most effectively communicate their message. Style topics of specific interest to Web writers concern word choice, syntax, conciseness, and tone. Research with printed text has shown that words that represent concrete concepts are encoded more quickly and accurately, recalled more often, and comprehended better than words that represent abstract concepts (Marschark & Paivio, 1979; Holcomb, Kounios, Anderson & West, 1999; Gee, Nelson & Krawczyk, 1999, in Spyridakis, 2000). When designers create embedded links, the link should be concrete enough so that users understand immediately where they lead to (e.g. "*A Treatment Action Campaign has been established to lobby for accessible and affordable treatment for South Africans living with HIV/AIDS.*"). A link that is phrased abstractly will be harder to understand (e.g. "*To support the work of CADRE click here.*"). It is also better to place the link at the end of the sentence, where it will least disrupt the syntax of the sentence. Writers must also remember that non-native speakers of English may visit a Web site, which is most certainly the case in South Africa. Readers from all cultures fare best with common words that have only one meaning and with shorter sentences.

Another style issue that Web designers should address is that of conciseness. The goal of conciseness should be to improve clarity by deleting unnecessary words, phrases, and excess detail. Spyridakis (2000) comes to the conclusion that in seeking to create effective Web pages, authors should focus on clarity and principles of good technical writing by using concise language, clear topic sentences, explicitly stated relationships, logically ordered information, and short pages. Nielsen and Tahir (2001) add that non-breaking spaces between words and phrases should be used in order to be scannable and understood. Abbreviations, initialisms, and acronyms should be spelled out and immediately followed by the abbreviation. Exclamation marks should be avoided, because do not belong in professional writing. All items on the homepage are

important. Uppercase letters should be used sparingly as they are not as easy to read as mixed case words.

The following style issue is that of tone. Tone should always be selected for a given audience and message. The concept of tone relates to what "voice" the reader hears while reading – what perception the reader has of the author's attitude about the content and the reader. The appropriate tone for a Web site must be governed by the purpose and audience of the site. A designer could actively draw the reader into the information on a page by using a personal tone. The user could than be addressed as "you", however, this form must be used with care, for extreme use of personal tone can lead to annoyed users. Also an inflated tone by using pseudo-intellectual language and difficult syntax should be avoided.

Establishing credibility

The credibility of a Web page is easily affected by the presence or absence of certain content. Readers are more likely to trust information from sites that contain an author's name and particularly an affiliation that the reader can check out, as well as the author's contact information. This is especially important with delicate issues such as VCT for HIV. Additionally, sites should be dated so readers know how current the information is. Readers also expect to see an author cited sources when applicable. With regard to links to outside sites, when they are carefully chosen, and when they are current and functional, they can further a site's credibility. Another consideration is that information on Web pages needs to be accurate and free from typing errors and other errors that reveal carelessness or ignorance.

4.5 Summary

This chapter discussed the best ways to design a Web site. Literature about designing persuasive Web sites was not available at the time of writing this thesis. Clarity, conciseness and a good navigation system are important assets to produce a Web site that communicates the content well. A Web site should also be credible to the users. The findings of this chapter will be translated into the checklist (see §5.1).

5 CONCLUSION AND DISCUSSION

5.1 Aim of this research

The aim of this research was to produce a literature based evaluation checklist on content and design of Web sites targeted at young people to persuade them to report for VCT. This evaluation checklist is presented below. The format of this checklist is based on a checklist created by Steehouder & Jansen (1997). Their checklist was made to serve as a starting point when evaluating a software manual.

South Africa is living a hectic period, and new developments in VCT come to light ever so often. These trends should be taken into account when designing new Web sites regarding VCT. These developments can also be used to keep the checklist up to date.

In chapter 3, it was concluded that there are only two distal variables that are considered for change. Some of the distal variables that are treated in this thesis were not ready for consideration at the time of writing. However, as stated in chapters 1 and 3, the South African government is doing its best to change the shortcomings that exist in VCT services and infrastructure. In due time, the changes that have been accomplished, should be taken into account when producing and evaluating a Web site concerning VCT.

The checklist is presented below in table 5.1.

Table 5.1 Checklist

Content issues	Pay attention to	See	Assessment		What should be done?
Is information provided on high risk sexual behaviour?	Applications to be considered: - Role-model stories (text and video) - Discussion forum - Chat option	§3.2.1 §3.4	○ ○ ○	yes more or less no	
Is the user given information about what happens after a test? Areas: - Possible mental and physical problems - Possible quick death after positive result - Possible disclosure	Applications to be considered: - Peer review (via chat, testimonial, role-model stories) - FAQ Content to be considered: - Information about ARV - Information about counselling	§3.2.1 §3.4	○ ○ ○	yes more or less no	
Is a list of VCT sites available?	Content to be considered: - Opening hours - Regions - Contacts	§3.4	○ ○ ○	yes more or less no	
Is the Web site information presented in different languages?	Take into account that Afrikaans and Sotho and Ngoni languages are spoken by a large part of the target group	§3.4	○ ○ ○	yes more or less no	

Web navigation	Pay attention to	See	Assessment		What should be done?
Is a logo present on the site?	- Logo on each page - Noticeable location	§4.2	O O O	yes more or less no	
Are links present and clear to the user?	- Coloured blue for unvisited links - Underlined - Coloured purple for visited links - Raised buttons with semantic meaning - Link to homepage on each lower level page - No active link to homepage on homepage itself - No generic instructions - Roll-overs - Icons - Video/Audio/PDF files	§4.2	O O O	yes more or less no	
Is navigation on the site practical?	- Navigation column - Location - Path history - Breadth and depth - Sitemap - Search option - Scrolling pages: - Break in text - Break in image	§4.2	O O O	yes more or less no	
Is organisation information available?	- 'Contact Us' link - Privacy policy - Postal address - E-mail - Name of organisation - Telephone number	§4.2	O O O	yes more or less no	

Display of information	Pay attention to	See	Assessment		What should be done?
Are elements legible on the site?	- White background - Graphics for content or decoration - Label graphics and photos - Animation - Splash intro - Pop-up windows	§4.3	O O O	yes more or less no	

Comprehensible pages	Pay attention to	See	Assessment		What should be done?
Is content presented clearly?	- Informative, concrete title - Introduction to the site - Amount of information on page	§4.4	○ ○ ○	yes more or less no	
Is the writing style clear?	- Concrete language - Common words - Short sentences - Spell out abbreviations and acronyms	§4.4	○ ○ ○	yes more or less no	
Is the correct tone used?	Addressing young people in a personal manner	§4.4	○ ○ ○	yes more or less no	

5.2 Application of the checklist

To illustrate the application of the checklist, an evaluation of the lovelife.org.za Web site (see §1.6) will be shown below.

Table 5.2 Checklist – lovelife.org.za

Content issues	Pay attention to	See	Assessment		What should be done?
Is information provided on high-risk sexual behaviour?	Applications to be considered: - Role-model stories (text and video) - Discussion forum - Chat option	§3.2.1 §3.4	○ ✓ ○	yes more or less no	The site has a section called "love facts" where sexual behaviour is discussed. In addition, the FAQ section gives answers to high-risk sexual behaviour. A forum is available. Role-model stories could be featured on the site.
Is the user given information about what happens after a test? Areas: - Possible mental and physical problems - Possible quick death after positive result - Possible disclosure	Applications to be considered: - Peer review (via chat, testimonial, role-model stories) - FAQ Content to be considered: - Information about ARV - Information about counselling	§3.2.1 §3.4	○ ○ ✓	yes more or less no	The site should include information about what happens after a test. Include information on this topic in the FAQ section. On this site, peer reviews could work well.
Is a list of VCT sites available?	Content to be considered: - Opening hours - Regions - Contacts	§3.4	○ ✓ ○	yes more or less no	In the bottom navigation column, a link indicates "referral". Here, several addresses and telephone numbers of health institutions can be found per region. However, the information is not very detailed and should therefore

					be extended. Opening hours should be included.
Is the Web site information presented in different languages?	Take into account that Afrikaans and Sotho and Ngoni languages are spoken by a large part of the target group	§3.4	○ ○ ✓	yes more or less no	LoveLife is entirely in English. Translate the site into the major languages of South Africa and let people select their language on the homepage.

Web navigation	Pay attention to	See	Assessment		What should be done?
Is a logo present on the site?	- Logo on each page - Noticeable location	§4.2	✓ ○ ○	yes more or less no	
Are links present and clear to the user?	- Coloured blue for unvisited links - Underlined - Coloured purple for visited links - Raised buttons with semantic meaning - Link to homepage on each lower level page - No active link to homepage on homepage itself - No generic instructions - Roll-overs - Icons - Video/Audio/PDF files	§4.2	○ ○ ✓	yes more or less no	LoveLife's site is very cluttered. A layman will not understand the links. Links are present in different colours, shapes and sizes. All the links should be made the same format so inexperienced users will be able to navigate through the Web site.
Is navigation on the site practical?	- Navigation column - Location - Path history - Breadth and depth - Sitemap - Search option - Scrolling pages: - Break in text - Break in image	§4.2	○ ○ ✓	yes more or less no	Two navigation columns should be made into one and it should be positioned in the upper left corner. It should be made clearer where to scroll down, by break in text or in an image. A path history would help the user in navigating through the Web site.
Is organisation information available?	- 'Contact Us' link - Privacy policy - Postal address - E-mail - Name of organisation - Telephone number	§4.2	○ ✓ ○	yes more or less no	A privacy policy is necessary on the site.

Display of information	Pay attention to	See	Assessment		What should be done?
Are elements legible on the site?	- White background - Graphics for content or decoration - Label graphics and	§4.3	○ ✓ ○	yes more or less no	Make use of a full screen. Change the background colour (now purple) and text colour. Enlarge pictures.

	photos - Animation - Splash intro - Pop-up windows			

Comprehensible pages	Pay attention to	See	Assessment		What should be done?
Is content presented clearly?	- Informative, concrete title - Introduction to the site - Amount of information on page	§4.4	○ ○ ✓	yes more or less no	Put an introduction of the site's purpose on the homepage. Do not arrange information on the site in a cluttered way. Reduce the amount of information per page, so that users will not have to scroll a lot.
Is the writing style clear?	- Concrete language - Common words - Short sentences - Spell out abbreviations and acronyms	§4.4	○ ✓ ○	yes more or less no	It seems like there is much use of slang and culture specific words, such as "*Eish*, I'm scared to go for HIV testing", or "OK, listen up my *chinas*". Try to reduce this. Capital letters are used in sentences. This should be avoided.
Is the correct tone used?	Addressing young people in a personal manner	§4.4	○ ✓ ○	yes more or less no	As mentioned above, it seems like there is a lot of use of slang words. It is not clear which youth (or: cultural) groups use this language. To make sure that all (possible) users understand what is said on the site, keep the amount of slang limited.

5.3 Further research

As stated in the paragraph 5.1, the world is moving on and changes are taking place everyday. This thesis has its restrictions. Because it is fully theoretically based, further research is necessary. To find out more about South African youth and South Africans in general and their behaviour toward VCT, empirical research about attitudes, perceived norms and self-efficacy (see figure 2.2) is a necessity to provide more information. When such research has been carried out, the checklist can be refined to some extent.

In order to find out to what extent Web sites meet the checklist, Web sites that focus on persuading people to report for VCT in South Africa have to be evaluated. Subsequently, it is important to find out to what extent Web sites that meet the criteria of the checklist persuade South Africans to report for VCT, more than Web sites would do that do not meet the criteria.

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