

**A study of pictorial interpretation  
of health education illustrations  
by adults with low literacy levels**

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# Declaration

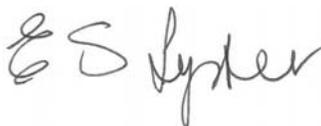
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Katherine Elizabeth Arbuckle



Supervisor: Dr Elda Lyster



March 2014

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## **Abstract**

Print materials for audiences with low levels of literacy usually include illustrations. This is particularly true of health education materials designed to raise awareness of serious diseases like the Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) and Tuberculosis (TB). When people cannot read well, it is often assumed illustrations will communicate information more clearly than written text. Theories of visual communication, however, suggest that visuals are ambiguous and more likely to be misinterpreted than written text, especially by under-educated viewers in environments where visuals and print materials are scarce. Moreover, the traditional guidelines on illustrating educational materials for adults with limited literacy are dated and often anecdotal. Due to South Africa's high HIV/AIDS and TB infection rates, effective health education is important. The lack of basic literacy skills among millions of adults presents a challenge. It is important to understand the communicative potential and limitations of illustrations in health education materials in order to maximise their success.

This qualitative research analyses how visual meaning is structured in illustrations from health education print materials from a semiotic perspective. A mixed method approach known as hybridised semiotics (Penn, 2000) is used, which in this case combines the semiotic analysis of the illustrations with data collected through interviews. Audience interpretations of the illustrations are contrasted with the producer's intended meanings.

23 individual interviews were conducted with Zulu-speaking adult participants from ABET Level 1 Zulu literacy classes in two rural and two urban literacy centres in KwaZulu-Natal. The research instrument for the interviews included illustrations in different illustrating styles and with different approaches to content. The content of the illustrations included HIV/AIDS; the digestive system, safety for caregivers, and TB. The illustration styles included artistic techniques, levels of stylization, pictorial depth and background detail.

The participants frequently misinterpreted the illustrations, or were able to describe the basic appearance of what was depicted without interpreting the complexities of the intended messages. Reported education levels seemed to influence participants' abilities to interpret pictures, but not as significantly as expected. Findings suggest that rural participants were more likely to

misinterpret illustrations containing symbols and unfamiliar objects, and tended to focus on describing surface details. Even though urban participants were more likely to discuss the connotations of illustrations, they often misinterpreted the intended message. Previous background knowledge and experience of the subject matter of the illustrations seemed to be the factor that enabled participants to infer the intended meanings of illustrations.

This study demonstrates the use of a semiotic approach to analysing illustrations, which may help to predict and avoid sources of confusion for audiences with low literacy. It also confirms that certain guidelines remain relevant while others do not, and provides specific recommendations on how to enhance the effectiveness of visual communication in this context. Illustrations have many beneficial roles, and remain essential components of reading material for audiences with low levels of literacy. It is therefore important to understand their complexity, and the reasons why they may be misinterpreted, so that their educational potential can be maximised.

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## **Abbreviations**

ABET – Adult Basic Education and Training

ACCU – Asian Cultural Centre for UNESCO

AIDS – Acquired Immune Deficiency Syndrome

ARVs – Antiretroviral medication

DOE – Department of Education

EPIDASA – Improving the Effectiveness of Public Information Documents on HIV/AIDS in South Africa

HACALARA – HIV/AIDS Communication Aimed at Local and Rural Areas

HIV – Human Immuno Deficiency Virus

HIV/AIDS – Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome

IVLA – International Visual Literacy Association

MDG – Millennium Development Goals

NCS – National Communication Survey on HIV/AIDS, 2009

NGO – Non-governmental Organisation

PALC – Public Adult Learning Centre

PATH/FHI – Programme for Appropriate Technology in Health/Family Health International

SANPAD – The South Africa Netherlands research Programme on Alternatives in Development

TAC – Treatment Action Campaign

TB – Tuberculosis

UNAIDS – Joint United Nations Programme on HIV/AIDS

UNESCO – United Nations Educational, Scientific, and Cultural Organisation

UNICEF – United Nations Children’s Fund

VRL - Visual Representational Latitude

WHO – World Health Organisation

## Chapter 1: Introduction

How much do we know about what exactly children and other learners see when they look at a textbook illustration, a film, a television programme? The answer is crucial because if the student does not see what he is assumed to see, the very basis for learning is lacking. Have we a right to take for granted that a picture shows what it represents, regardless of what it is like and who is looking? (Arnheim, 1970: 309).

The question of how people in different contexts interpret illustrations and other visuals has been investigated over many decades. Research has shown that visuals are usually open to many different interpretations, and there are several theories that explain why this happens. Thus the informed answer to Arnheim's rhetorical second question above is "No", of course.

Nevertheless the common sense view that illustrations represent a universal language which all people understand has tended to prevail (Fordham, Holland, & Millican, 1995: 81). The old phrase 'a picture paints a thousand words' implies that a picture says it all, and communicates better than verbal/written language. Of course the 'thousand words' may be contradictory and confusing, or a thousand *different* words may be evoked for different viewers. However, the tendency to expect visuals to communicate more effectively than words in certain situations has remained, especially in contexts where people are unable to or have limited ability to read written words.

Such assumptions about the communicative power of visuals are very understandable, because people who can see from birth learn to interpret what they see through a natural developmental process (Messaris, 1994). When visuals have some resemblance to reality, why should it not follow that people should understand depictions in the same way that they are assumed to be able to understand what they see in everyday life?

The answer to why this is not the case lies in properly understanding what illustrations and other visuals actually are, and how they work. According to Arnheim,

...every picture is a statement. The picture does not present the object itself but a set of propositions about the object; or, if you prefer, it presents the object as a set of propositions (Arnheim, 1970: 308).

All visuals which are chosen, used and disseminated for communicative purposes 'stand' for something else, be it information, ideas, or instructions. They convey messages by mediating between the viewer and reality (Hoffmann, 2000: 60). This applies widely, for example, to the variety of images used in advertising, to icons on computer screens, to posters promoting health- or other campaigns, and especially to educational illustrations. As such, all visuals are

representations and even abstractions, which may be classified as signs requiring interpretation according to conventions or codes.

Educational print materials aimed at adults with limited literacy skills typically include illustrations to support the written text and aid understanding. This is particularly true in the health sector, where pamphlets, posters and billboards address serious problems related to diseases like the Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) and tuberculosis (TB). It is commonly assumed that adding illustrations makes the text easier to understand because the pictures explain what is in the text. However, scattered research and anecdotal evidence have suggested that adults with limited or no basic education often do not interpret illustrations as intended. From the design and appearance of many educational print materials, it seems that many illustrators and commercial designers are not aware that illustrations, like written words, need decoding and are open to multiple interpretations. Moreover, many health concepts are complex, and challenging to portray visually.

This research stems from many years of my work developing and illustrating educational materials for adults with limited literacy skills and a concern with the extent to which illustrations are able to communicate successfully with the intended audience.

## ***1.1 Context and background***

The eight United Nations Millennium Development Goals (MDGs) include attaining universal primary education, and reducing the prevalence of HIV/AIDS and other diseases. The other MDGs include ending extreme poverty and hunger, improved gender equality, better maternal health, lowering child mortality rates, environmental sustainability, and creating a global partnership for development. Clearly, the different issues encapsulated in these noble goals are interrelated.

South Africa has a relatively low rate of functional literacy among adults, despite official statistics claiming otherwise (Carstens, Maes, & Gangla-Birir, 2006; Gustafsson, Van Der Berg, Shepherd, & Burger, 2010). Low literacy is linked to specific social problems, including poor health, because people with limited reading skills tend to find it more difficult to access and use information. This is one of several factors that influence the ability to follow healthy lifestyles (Bogale et al, 2009; Carstens et al, 2006; Tones, 2002; Doak et al, 1998). It is important to understand that the relationship between low literacy and poor health is not simply one of cause

and effect. Low literacy may correlate with poor health, however, both of these problems need to be understood as features of poverty and underdevelopment rather than root causes (Lagerwerf, Boer, & Wasserman, 2010; Lyster, 1992).

Given this correlation, it is not surprising that alongside the problem of illiteracy among adults, South Africa also has a high rate of HIV infection. In 2012 it was estimated that more than six million people in South Africa are living with HIV, with about 18% of adults between the ages of 15 and 49 infected (UNAIDS, 2012). According to graphs on the UNAIDS website, in South Africa, the number of people living with HIV/AIDS has levelled out and appears not to be increasing. The rates of new infections and AIDS-related deaths have started to decline, largely because of the large-scale provision of antiretroviral medication (ARVs) in South Africa, however, the numbers are still unacceptably high. South Africa, Lesotho and Swaziland together represent the epicentre of the epidemic in sub-Saharan Africa, which in 2007 had 67% of HIV infections and 72% of AIDS deaths globally (Lagerwerf et al., 2010). TB is also recognised to be a major problem, and because it seems unlikely the reduction targets set by the MDGs for South Africa will be attained, TB has been identified as “a top national health priority” (United Nations Development Programme, 2010: 83).

KwaZulu-Natal is the most populous of South Africa’s nine provinces, occupying less than 8% of the land while being home to almost 20% of the people. 78% of people in KwaZulu-Natal have Zulu as their mother-tongue (Brand South Africa, 2012; Statistics South Africa, 2012). 54% of the population live in rural areas (Office of the Premier, 2012). The region was wracked by political violence between the Inkatha Freedom Party (IFP) and the African National Congress/United Democratic Front (UDF) in the 1980s and early 1990s. The conflict resulted in interrupted school attendance and the displacement of families in many places, including Pietermaritzburg and surrounding areas. Such history possibly contributed to KwaZulu-Natal’s high numbers of educationally deprived adults, and at one stage the highest rate of HIV infection in the world. Such challenges are on-going:

The province has the highest burden of disease associated with underdevelopment and poverty in the country which include HIV & AIDS and Tuberculosis (TB). The Human Science Research Council on HIV prevalence in South Africa (Shisana, et al., 2008) puts KwaZulu-Natal Province at the top of the other provinces with a 15,8% HIV prevalence, 11,9% higher than the prevalence in the Western Cape (the province with lowest prevalence). (Office of the Premier: Province of KwaZulu-Natal, 2012: 22).

Better communication of health information with those communities most affected should therefore form an essential part of addressing these issues.

## **1.2 My experience as an illustrator**

I work in an educational publishing project based at the University of KwaZulu-Natal's Centre for Adult Education in Pietermaritzburg. *Learn with Echo* is a weekly, four page educational newspaper supplement aimed at Zulu-speaking adults with limited literacy skills and/or incomplete primary school education. The aim of this project is to provide easy-to-read, accessible learning material on a wide range of topics, so that the intended readership may gain important information and enjoy practicing reading while developing their literacy skills. The many topics covered often include health information. The project began in 1990, and has continued uninterrupted since then. Currently 70 000 copies of *Learn with Echo* are printed every week and distributed in the Pietermaritzburg-Msunduzi area of the KwaZulu-Natal midlands in the *Echo* newspaper. It is read by individuals, shared among family members at home, used in adult literacy classes and in quite a few schools (Harley, Arbuckle, Khumalo, Dlamini, & Land, 2000).

Illustrations are an important part of the design of the *Learn with Echo* articles, and include original drawings as well as photographs. Their purposes vary. Illustrations aim to give the reader an idea of what the article is about, to arouse his or her curiosity to find out more by reading what is written. Illustrations may support and help explain the meaning of the verbal text, or supplement it by showing additional information, such as an example of what the content might apply to, and of course to make the material look attractive.

I became involved in adult basic education through my illustrating work. After I was employed to work full time for the *Learn with Echo* project, I became involved with all the aspects of producing these materials, from conceptualising the articles, to writing or editing the text, and creating the illustrations/taking photographs and sometimes commissioning artwork from other illustrators. The illustrating guidelines to cater for adult beginner readers were conveyed to me by colleagues who had learned these 'rules' from literature (for example, the work of Andreas Fuglesang, and the UNICEF studies in Nepal) but also through first-hand experience as educators and the pre-testing of materials. The following advice from a classic handbook on adult literacy for development published during the mid-nineties (the adult literacy 'heydays') sums up the early approach:

Village people gain their knowledge through handling, creating, or looking at actual objects or events. When they see a picture, they expect it to contain what they know about the object and not only what they see of the object. A photograph or drawing of a man in which only one leg and one arm is visible will not necessarily be recognised as a man. A drawing of a truck in which only two wheels can be seen will not correspond to what people know about trucks. In an image which shows perspective, two objects of the same size, one farther away than the other, may be

perceived as two objects of different sizes. ... It should be remembered that pictures which contain shading and foreshortening may be read literally: the person may be seen to have a scarred face or a short limb, or lack the limbs which are not visible. Learners need to be introduced to images and taught to read and interpret them, just as they are introduced to words (Fordham et al., 1995: 81).

Most of the guidelines referred to style, rather than the content of illustrations. It was recognised within the project that it was important for the target audience to be exposed to a variety of illustrating styles, and different sorts of visuals in order to develop the ability to interpret pictures.

However, a few technical constraints determined the types of illustrations we used. In the early 1990s, our computer equipment was limited – we had no scanners, digital image files or PDFs, or email. Illustrations were photocopied and glued onto the page layout, which was then physically taken to the newspaper prepress team and converted into image plates for printing. This now-primitive technology meant the artistic techniques used for illustrations in *Learn with Echo* were quite limited. Tones, such as ink washes, for example, did not survive the photocopying well, and therefore black and white line drawings were preferred over other styles. Photographs were used, but with limited success in terms of the final print quality on the newsprint. This is a reminder that, in general, the ‘development’ style of illustration using simple black outlines was also used because it was the easiest to reproduce cheaply, and thus its appropriateness was not necessarily a purely educational decision.

We evaluated *Learn with Echo* in a variety of formal and informal ways, including internal reviews and readership surveys, but none of these focussed specifically on the illustrations. Informal feedback on my drawings was usually positive, particularly for a popular picture story about the fictional Mkhize family, with minimal bilingual text in English and Zulu, which appears in four picture frames each week like a comic strip (discussed in Land & Buthelezi, 2004). The compliments that meant and still mean the most to me are when people have said the illustrations look “just like our place”; that I have managed to suggest an authentic ‘township’ feel that resonates with the intended audience. This was simply due to observing the world and people around me, and absorbing detail – probably often unconsciously.

There is a dearth of reading materials specifically designed for adult beginner readers in South Africa, and very little available in the indigenous African languages like Zulu. This situation has worsened in the past decade or so, because the focus on adult basic education as a key development issue has declined. In this under-resourced context, literacy facilitators and adult learners seem grateful for *any* locally produced learning materials they can lay their hands on.

Thus, while positive feedback seems affirming, that alone does not tell the whole story of whether illustrations fulfil their purposes. Arnheim referred to the work of the illustrator as “the beautiful and vital task of making the world of facts visible to the enquiring mind” (1970: 307), but this lovely description does not account for the isolation of the “disjunction” between the producer and the receivers of messages communicated through mass media (Kress & van Leeuwen, 2006: 114). Because the key purpose of my illustrations was instructional and it was vital that meanings should be communicated accurately, it bothered me that I did not really know how the intended audience would interpret my work. For example, I wondered whether depictions of how to make oral re-hydration solution, with the correct proportions of salt and sugar added to boiled water, were clear enough and easy to understand.

A particular instance demonstrated how some illustrations in *Learn with Echo* were difficult for the intended audience to interpret. A series of articles about vegetable gardening was developed at the request of the Valley Trust (a rural development and primary healthcare NGO), to promote ‘door-sized gardens’ and ‘deep trench’ gardening methods. The articles were used in extension work in a rural community served by the Valley Trust. It was reported that the people had difficulty recognising the illustrations of vegetable plants in a food garden. This valuable feedback was sobering because vegetables and gardens were hardly unfamiliar objects or concepts to this rural audience. I considered how I could improve the illustrations for future materials on this subject, but did not investigate further at the time. This instance stayed with me as a caution, and added to my personal interest in knowing more about how the intended viewers see and interpret illustrations.

When the opportunity to conduct postgraduate research arose, I decided to focus on illustrations, and how members of their intended audience interpret them. My personal interest in developing health education materials led me to focus on illustrations with such content.

### **1.3 Rationale**

The social impact of HIV/AIDS in South Africa has been vast. On a personal level, most of us have seen friends, relatives and colleagues become ill and endure great suffering before passing away. We all know of grandmothers under strain, left alone to care for too many orphaned grandchildren. Child-headed households are all too common. Clinics and hospitals are overburdened and often fail to meet the needs of those who rely on the public health system. Apart from the social costs to communities, in economic terms productive workers and professionals have been lost or weakened by illness, and the costs of ARV treatment on a grand scale diverts

much needed resources away from other problems. Similarly, TB presents great challenges, particularly considering the looming spectre of drug resistance.

Communication is recognised as an important part of health campaigns to promote the prevention and treatment of these major diseases. Ways to maximise the effectiveness of communication efforts have proved to be worthy of on-going research. The argument made previously in this chapter, in which low literacy correlates with poverty and greater risks of serious health problems, suggests that under-educated people in poor communities should be among the primary audiences of health campaigns. Such target audiences' inability to read well is recognised as one of the barriers which limits effective communication through text-based media (Lagerwerf et al., 2010). Comprehensive multi-media campaigns are the ideal, including print materials that further explain, reinforce and remind people of information gained through other means. Such campaigns are costly in monetary terms and thus extremely wasteful of precious resources if they are ineffective, not to mention the human cost of failing to make such important information available in accessible forms.

It is thus of great importance to communicate with different audiences using context-appropriate means, and visual communication using illustrations is thought to be “superior to textual information” where low-literacy presents a challenge (Lagerwerf et al., 2010: 5). Research into how such illustrations are developed, received and used is essential to improve health education initiatives' chances of success. Significant work has been done to investigate how low-literate audiences interpret visuals, however, the seminal literature is dated (for example, Fuglesang, 1973; Goldsmith, 1984; Linney, 1995; McBean, 1989). This means that the traditional guidelines on illustrating for such audiences are similarly dated, or based on anecdotes. Much of the research is spread across different disciplines and fragmented due to the lack of unifying theoretical foundations. This also contributed to a lack of standardised language with which to discuss visuals.

More recently, some local studies have investigated media campaigns more generally, without much attention to illustrations specifically, while others have focused on very specific aspects of illustrations. Examples of these studies include the use of pictograms in medicine leaflets; whether people understand symbols like arrows, conventions like speech bubbles and ways of showing movement or not; and developing an illustrated nutrition calendar with the help of the targeted community. The specificity of some of these projects results in limitations; however, the intense foci strengthen their findings with reference to those specific elements. All of these

studies have value, and benefit the research described in this dissertation by complementing and informing the work.

Certain aspects of my study address elements not investigated recently or not investigated before in this context. The scope is broader than most, and the strengths and consequences of that are discussed in the body of this report. My positioning is unusual, as both illustrator and researcher, and this allows me to offer a unique and multi-dimensional perspective to the topic. In a methodological innovation, I combined the interview method of data collection with a semiotic analysis of the illustrations, comparing the participants' interpretations with the meanings intended by the illustrator. Previous studies have not analysed the actual illustrations in the manner and to the extent that I have. By further pursuing the analytical possibilities of traditional semiotics this work hopefully contributes to the development of a more robust methodology with a firm theoretical base for future studies in this field.

The consideration and comparison of the urban-rural dichotomy in KwaZulu-Natal also distinguishes this research from other work. I was particularly interested in whether the guidelines from the past on illustrating for 'low-literate' audiences still held true. The changes in media since the early 1990s, when South Africa emerged from the isolation of apartheid, have been rapid, vast, and are on-going. In the subsequent decades, the country became more exposed to the influence of global culture. Electronic media have flourished and become much more available, certainly in urban and well-resourced areas. Mobile phones, internet access and email are now taken for granted by many people. Indeed, the rise of the 'visual' in contemporary global culture is seen as one of the defining features of modern society:

Today the pervasiveness of visual mass media is abundantly obvious to even the most casual observer. Whether we acknowledge it or not, we live in an era of visual culture, the so called "bain d'images" (image bath) ... (Avgerinou, 2009: 28)

What effect has increased exposure to visual media had on the so-called 'visual literacy' skills of people with low literacy, many of whom dwell in rural areas? Fuglesang predicted that as development progressed, fewer people would have difficulties interpreting illustrations and the problem of "pictorial illiteracy" would "vanish" (Fuglesang, 1973: 12). It is to be expected that those exposed to a variety of visuals in different media (including the traditional print media, such as newspapers, magazines, pamphlets and posters) would be better equipped to interpret illustrations. But in the large number of rural areas which remain under-developed, people might still not be exposed to the visual media which urban dwellers take for granted. The same may be

said even of peri-urban ‘townships’. This is not to say that Fuglesang was wrong, but rather that ‘development’ throughout the world has been uneven. Lagerwerf et al. support this view:

Unlike in media-saturated Western societies, access to mass media and education remains unequal in Southern Africa. This creates an exposure problem, but also poses a cognition problem: if messages do come across, will these groups understand them the way they were intended? (Lagerwerf et al., 2010: 3)

Rural areas in KwaZulu-Natal are very different to city environments where visuals abound in the general environment. Figure 1, below, is a photograph of the view from a rural literacy centre, at Ndodeni, where some of the interviews for this study were conducted. Although one does encounter the occasional billboard, advertisement or signpost including a picture, the overwhelming characteristic of this landscape is open space with very little visual or pictorial ‘clutter’. This paucity of environmental print extends to homes and even school classrooms, where traditional reading resources such as newspapers, magazines, books and learning materials are scarce.



**Figure 1. View from the Family Literacy Project centre at Ndodeni**

Figure 2, below, shows a streetscape in central Pietermaritzburg, near to where the ‘urban’ data was collected for this research. Images and verbal text appear in different forms, sizes and media – on signs, posters and products – and contrast strongly with the environment at Ndodeni.



**Figure 2. Signs in upper Church Street, Pietermaritzburg**

In my experience, isolated rural areas have fewer print and electronic resources, and thus people in these areas generally see fewer illustrations. This raises the question of whether people in urban areas are better able to interpret illustrations than those in rural areas where there are far fewer illustrated texts/visual resources. Lagerwerf et al (2010: 3) describe “multi-layered African societies, marked by linguistic, socio-economic, and cultural diversity” where “one-size-fits-all” media messages are insufficient to reach audiences in different contexts. Theories of visual communication help to explain the truth of this, and why audiences that may appear homogenous should not be assumed to be so.

Many illustrators of educational materials work intuitively and are very often not conscious of the conventions or codes they use when representing a message. This includes considering how the intended meaning of the illustration is structured in the depiction. This is understandable, because fluency in any ‘language’ or skill liberates the practitioner from having to think consciously about the ‘grammar’ or technical details of a task. I have heard this described as ‘automaticity’ in reading, and it can be applied to skills such as driving a car, where an experienced driver does not think consciously about changing gears or using the indicator lights. Although an illustrator thinks about the content and purpose of an illustration, and who the intended audience is, I think it is rare for the way an illustration represents the intended meaning to be closely and systematically analysed and understood at the production stage.

The challenge of this investigation was to bridge the gap between audiences and producers of illustrated materials. This study does this by applying ‘traditional’ semiotic concepts from Barthes and Peirce to interpret the interview responses. I also analyse a selection of the illustrations using Peirce’s icon, index and symbol typology. This is essentially an analysis of the construction of the meanings intended by the illustrator. Being able to compare the interpretations of the research participants with the intended meanings of the illustrations enhances the analysis, exploring relevant theory in depth and extending its use in this context.

As mentioned above, this study benefitted from the growing number of publications and studies in this field, which provide both theoretical and methodological support. It also suggests that this area is becoming an increasingly recognised and worthy area of investigation. This research therefore contributes to this area of work by providing evidence to support or review many of the assumptions that guide current materials development practices. Through synthesizing and adding to recent findings of related studies in this small field, this research provides a general view of the issues in order to inform recommendations on which guidelines remain relevant.

This study adds knowledge that is significant for building theory and influencing practice in the field of health communication and education in contexts where low literacy levels are prevalent. The result is stronger and more specific recommendations to enhance the development of health education materials, thus making an original contribution to the study of visual communication within the field of adult education in KwaZulu-Natal.

#### **1.4 Focus**

This study investigates pictorial interpretation amongst Zulu-speaking adults with very little or no primary schooling and/or limited literacy skills, with particular regard to illustrations in health education print materials. The primary concern was to investigate how low-literate adults interpret hand-drawn illustrations of health information and related concepts that are often difficult to communicate/understand. This study therefore focused on the construction of meaning as it was intended, and how it was perceived, and the theoretical and methodological approaches that may be utilised to explore these aspects.

To explore how the illustrations were perceived, I conducted individual interviews with Zulu-speaking adults from ABET Level 1 Zulu literacy classes, which took place at two rural and two urban literacy centres. The participants viewed illustrations in different illustrating styles, and others that had different ways to show similar messages (content). The content of the illustrations

included information related to HIV/AIDS; depictions of the digestive system; safety measures for caregivers, and TB awareness.

Style and convention included comparing the effects of line drawings with those of shaded drawings, as well as different ways of showing distance and proportion in two dimensions. Content included exploring different ways of showing a concept, such as realistic, naturalistic portrayals versus the use of symbols or visual metaphors. As well as revealing some of the ways in which particular illustrations are received and interpreted by low-literate adults, the study also offered participants from this group an opportunity to compare different depictions of the same thing, and to indicate which depictions (if any) were successful at communicating the intended meaning.

Communication theory, and specifically visual semiotics, was used to analyse participants' interpretations in relation to the intended meanings of the illustrations. In order to make comparisons between the two, I analysed a selection of the illustrations using Peirce's icon, index and symbol typology. This is essentially an analysis of the construction of the meanings intended by the illustrator.

## **1.5 Key research questions**

This study was shaped by the following questions:

1. To what extent do low-literate adults in ABET Level 1 classes understand illustrations that try to explain health concepts and factual information in print materials?
  - 1.1 Which artistic styles work best to convey the intended meaning?
  - 1.2 What approach to content works the best to convey difficult concepts?  
(For example, do people understand realistic better than symbolic depictions?)
  - 1.3 What are the differences, if any, between the interpretations of rural and urban beginner readers at ABET Level 1?
2. How are the intended meanings in the illustrations constructed conceptually, in semiotic terms?
3. How do the sign systems of the intended meanings relate to the participants' interpretations?

4. Based on the answers to the above questions, what recommendations are appropriate for illustrators of health education materials for low-literate adults with limited formal education, in order to improve illustrations produced for use in such contexts?

## **1.6 Terminology**

There are many words for visual materials, such as drawings, pictures, graphics, images, illustrations, and artwork, to name several. For the sake of clarity, I try to limit the terms used in this report, and standardise the way in which they are used. However, I find it difficult to describe each term without using some of the other terms, which speaks volumes about the territory of ‘the visual’. In this thesis, I try to use the following terms consistently, according to these definitions:

- *Visual* generally refers to that which is seen, hence ‘visual communication’, and is often used as a noun, to refer to a representation such as illustrations or other artwork or film footage as ‘visuals’. In the context of this study, visual is distinguished from written text and speech, i.e. verbal communication.
- *Text* refers to words, writing or printed verbal text. (The term text is sometimes used to refer to any “symbolic composition”, such as film, images, dance performances, a city, or anything else that can be ‘read’/interpreted or analysed (Barbatsis, 2005: 273). However, this theoretical sense of the term is avoided in this thesis.)
- *Image* refers to a visual representation, a broad category which usually includes photographs, drawings, and even filmed works (moving images). For this study images are two dimensional, still images.
- *Illustration* is a specific type of image that has a deliberate communicative/informational function and often relates to text or other sources of information, to illustrate (show) what is meant. In this study, illustration refers to each ‘message’, which may consist of one or several *pictures* (such as cartoon strip).
- *Picture*, in this study, refers to a single image, which may stand alone on its own page as an *illustration*, or be a part of an illustration made of a collection of other pictures which together intend to illustrate a concept/message.
- *Sets of illustrations*, refers to the different illustrations that intended to depict the same concept, grouped in *sets* for the purposes of this study. Therefore, I refer to Set 1, Set 2, up to Set 9.

I explain the use and definitions of many more theoretical and technical terms that occur in this thesis in the following chapters as they occur, because listing and explaining all of these here would be lengthy and repetitious. More importantly, many of these terms are best introduced and explained with examples and therefore I do not list them here at this early stage.

## **1.7 Thesis summary**

A brief summary of chapters 2 to 7 follows:

### **Chapter 2: Literature review – Theory**

This chapter deals with the theories framing this research, in order to explain the factors which influence how people interpret visuals, and particularly still images which include illustrations. An interdisciplinary approach is required, which draws on theories of communication, visual semiotics, perception and cognition. Structuralist semiotic theory is contrasted with social semiotics, in the light of what each potentially offers this research and whether or not they can co-exist. The broad notion of visual literacy is also discussed and critiqued. I reflect on visual research methodologies and to what extent this study may be considered ‘visual research’, and where to locate it in this landscape.

### **Chapter 3: Literature review – Research in context**

This chapter highlights what is known about pitfalls and benefits of illustrations as communicative tools in educational materials, especially those about health. The scene is set by exploring and reflecting on the contested notions of literacy and development, and the relationships between them. According to research and reflections on experiences in the development communication field (much of it dated), print materials remain important in educational endeavours. This applies even when audiences have low levels of literacy, and particular communicative functions are expected of illustrations in such contexts. Past research into pictorial interpretation by low-literate audiences provides valuable guidelines, as well as contradictions and questions. Findings that are more recent signal a shift in emphasis away from audiences’ capabilities in favour of examining the limitations of illustrations.

### **Chapter 4: Research design and methodology**

In this chapter, I describe the research paradigm, design and research methods used. This study is concerned with meaning, which made an interpretivist paradigm utilising qualitative approaches

an appropriate choice. Such research is usually language-based and discursive, analysing the content of social interactions, opinions and behaviours rather than reducing these into numerical forms. Visual research includes researching a variety of visual phenomena, the use of visual material in research activities, and/or presenting research findings visually. To examine and compare the intended meanings and audience interpretations of illustrations, semiotic methods and theory is appropriate. Data was collected through individual interviews conducted with 23 adults who attended Zulu Level 1 mother tongue literacy classes. These took place at four different centres, two in rural areas and two in the city of Pietermaritzburg. The interview schedule was based on 27 illustrations, and included data collection instruments that I developed myself. I also report on the different forms of data analysis used for understanding the illustrations and the interviews, and how the semiotic concepts outlined in Chapter 2 were applied. I conclude by reflecting on the cyclical and developmental nature of the research process.

### **Chapter 5: The illustrations – Origins and analysis**

The illustrations used in the study are introduced, grouped in their ‘sets’, with detailed accounts of the sources, original context and/or development of each illustration. All of the illustrations were produced by me, and most had originally been published in the *Learn with Echo* educational newspaper supplement. Some were produced especially for the research but were either based on illustrations found in other publications, or developed in consultation with a medical doctor or HIV/AIDS support group members. This chapter is closely linked to the previous methodology chapter, because on one level the illustrations are part of the research instruments, however, they are also sources of data for semiotic analysis.

This chapter goes on to demonstrate a semiotic approach to analysing the construction of the intended meanings of selected illustrations, using Peirce’s sign types and Barthes’ orders of signification/layers of meaning. Unpacking sign types and relationships reveals just how interpretive the act of illustrating is. The choice and combinations of signs to communicate certain content visually is often conventional, idiosyncratic and unconscious. This analysis helps to shed light on the interview data (the participants’ interpretations of the illustrations), enriching my understanding of the findings. It also provides an example that others may use to evaluate illustrations for sources of likely misinterpretations by specific audiences.

## **Chapter 6: Findings and analysis**

Leading on from the semiotic analysis of the illustrations, the participants' interpretations of the individual illustrations are discussed in detail. The responses to each set of illustrations are summarised, and the results are discussed and compared in the light of the main research questions, brought together with the relevant theories and research findings discussed in Chapters 2 and 3. Certain types of messages and sign types were much better understood than others, and this is examined in the light of the semiotic analysis detailed in Chapter 5. However, some notable exceptions to the general interpretive patterns reveal that the factors which influence individual perception and interpretation of visuals are complex.

## **Chapter 7: Conclusion and recommendations**

I conclude by reflecting on what it was that I set out to investigate, and the extent to which I have been able to answer my main research questions. I summarise my findings and reflect on the elements of meaning on which interpretation depends. Illustrations alone are open to many different interpretations, and those to do with health education often carry a particular burden of needing to communicate complex messages to those with few resources and low-literacy skills. Visual communication theory and selected semiotic tools/concepts are useful for analysing whether illustrations are likely to communicate successfully with an intended audience or not.

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This chapter has introduced the topic, background, aims and scope of this study. The next chapter explores the theories which frame the research, and reflects on the interdisciplinary nature of educational research into visual communication.

## **Chapter 2: Literature review – Theory**

### **2.1 Introduction**

At the start of this research, I deliberately chose the term ‘pictorial literacy’ to describe my area of investigation, preferring this to the more frequently used term visual literacy because the latter is extremely broad. With the global mushrooming of myriad electronic media, visual literacy encompasses and refers to a host of different communication tools and methods including film, television, and the full range of visual experiences offered by computers, cell-phones, and even ordinary social interactions. Moore (2001: 7) suggests that the problem of definition of visual literacy makes it “difficult to formulate research problems”. I discuss definitions of visual in more depth towards the end of this chapter.

In the still-influential *Applied Communication in Developing Countries*, Fuglesang (1973: 63) defined ‘pictorial literacy’ as the ability to comprehend or ‘read’ pictures, an ability developed informally and “proportionately with the amount of pictorial stimulation the individual is exposed to in his environment”. The term has remained in use (for example, see Messaris, 1994: 59) thus I use the term ‘pictorial literacy’ for the purposes of this study. However, in the following chapters I do occasionally use the term ‘visual literacy’ when discussing or quoting from the work of authors who use that term.) During the analysis phase of the project, my sense of the issues and theories evolved and I came to understand the issues in terms of ‘pictorial interpretation’ rather than the more controversial term ‘literacy’.

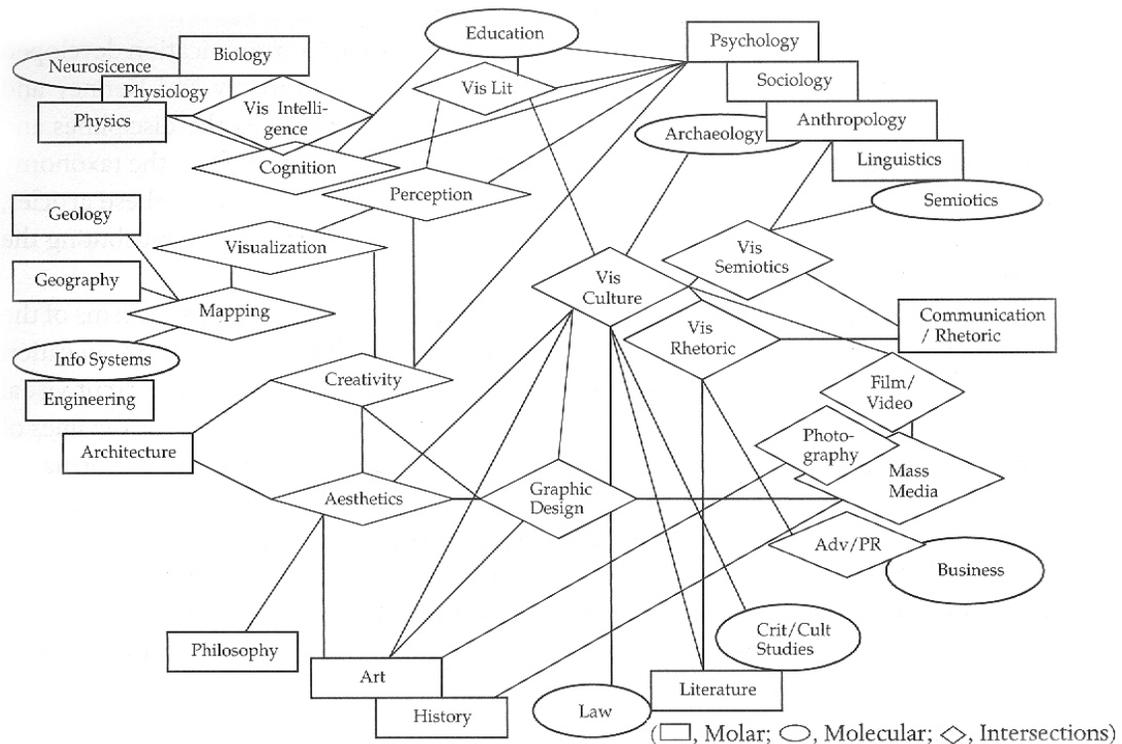
I consulted academic books, including a number which have become the ‘classic’ or seminal works on visual literacy (for example, Dondis, 1974; Manning, 2004; Messaris, 1994), communication studies (Fiske, 1990), development communication (Fuglesang, 1973; Hoffmann, 2000; Linney, 1995; McBean, 1989), and visual communication including semiotics (Barthes, 1977; Copley, 1996; Kress & van Leeuwen, 2006; Smith, Moriarty, Barbatsis, & Kenney, 2005), amongst others. These books mostly contained background information, critical issues and major concepts informing the field which I was exploring, and from this I managed to select a few key concepts which are most relevant to understanding the findings emerging from my research.

### **2.2 Interdisciplinary fields of study**

The study and theory of communication is multidisciplinary, with shifting boundaries which include developments in linguistics, semiology, philosophy and literary theory, in order to

investigate issues fundamental to communication: how messages are created, transmitted, constituted, and received, and why, with reference to factors within and outside of messages (Cobley, 1996: 1). These issues are relevant to this research, particularly how messages communicated through pictures are received (interpreted), considering factors both internal and external to the message. Located within the broad arena of communication theory, visual communication theory deals specifically with pictures, both moving and still.

The literature on visual communication is as wide ranging as that on communication in general, emanating from film and cinema studies, education, art, anthropology, psychology, architecture, philosophy, linguistics and semiotics (Moriarty, 1995). While cross-fertilisation has its benefits, this diversity creates difficulties for those who seek a firm base for scholarly research (Hoffmann, 2000: 3; Moriarty, 1995: 1; 1996: 7). For example, it is difficult to trace the roots of visual communication as a field of study to any one discipline, and while alternative ways of mapping such interdisciplinary research and practices have been proposed, for example “rhizome analysis” depicted diagrammatically in Figure 3 (see Moriarty & Barbatsis, 2005; Pettersson, 2009: 40), framing work in this area remains challenging.



**Figure 3. A rhizomatic map of visual communication (Moriarty and Barbatsis, 2005)**

Some argue that this sense of theoretical uncertainty is due to a historical downgrading of visual representations in relation to written/verbal texts (Stafford: 1996, in Moriarty & Barbatsis, 2005: xi), for example:

The problem we face is that literate cultures have systematically suppressed means of analysis of the visual forms of representation, so that there is not, at the moment, an established theoretical framework within which visual forms of representation can be discussed (Kress & van Leeuwen, 2006: 23).

However, in recent decades the rise of ‘new’ electronic media which use images as content means that in many contexts this sense of a dichotomy between visual and verbal literacy is changing (Leu, Kinzer, Coiro, & Cammack, 2004; Tyner, 1998: 93). Similarly there has been a “pictorial turn” in social science research (Mitchell, in Fischman, 2001: 29), extending into other professional fields such as law (Hibbitts, 1996), which Fischman (2001: 29) explains:

The growing interest in scholarly inquiry into visual experiences and studies of seeing and the seen follow an unmistakable social and cultural reality: that images have become an omnipresent and overpowering means of circulating signs, symbols and information.

However, the contextual realities of my study mean that much of the growing theory and visual research taking place have little to do with traditional educational print media for low-literate audiences in technologically under-resourced communities. According to Carstens et al (2006: 222), a “systematic and reliable account of the effect of visuals in a low-literate health context is lacking ... due to a large number of complexities associated with this type of research”. These complexities are identified as the lack of a theory on visual interpretation specific to low-literate viewers, the often-sensitive nature of health information, especially when depicted visually, and the methodological challenges of studying communication in a low-literate context. This relates to Hoffman’s experience of being “unable to find any piece of work that attempts to integrate all these different aspects and examine them in a unified way” (2000: 4-5), although he was referring to the many disciplines and fields which contribute to exploring the visual. However, as stated before, the availability of some more recent results of local studies helps to contextualise my research, for example, Hoogwegt et al (2010).

In education research, the appropriation of theories from other fields is commonplace due to the multidisciplinary nature of education (Dimitriadis & Kamberelis, 2006: viii). In my case, I fear I may already have fallen into the trap described by Fuglesang (1973: 18):

Discussions about communication in development work have a tendency to get hung up on the mass-media issue or on all sorts of macro-level models. So have the research efforts. We tend to forget that all communication ultimately ends up on the micro-level, in face-to-face, face-to-screen, face-to-loudspeaker or face-to-poster situations. This is the point where the

QUALITATIVE aspect of communication becomes the central issue and where the discipline advances from communication theory to APPLIED communication.

In the light of these comments, the rest of this chapter explores and narrows down those aspects of communication theory that are most relevant to the practical concerns which motivate this research, and which provide suitable approaches and concepts with which to frame and analyse my findings.

### **2.3 Communication theory**

According to Jansen and Steinberg (1991: 4) “the same view of communication may be expressed in different ways”, and theoretical approaches to communication cover an extremely broad field with fluid borderlines, which depend on a variety of possible delimiting criteria (1991: 10). Their own explicit application of three criteria for their work serves a useful example of how this is done (1991: 11). I find their emphasis on levels of generality, and how this may differ between individual theories, particularly valuable. Theories which deal with more specific aspects or examples of communication are said to be “verifiable”, while others may offer a grand view of a phenomenon that is not easily tested empirically, and are “so general and comprehensive that they may be regarded as theoretical approaches rather than theories” (Jansen & Steinberg, 1991: 4).

Fiske (1990) defines communication as “social interaction through messages”, a multidisciplinary area which can be studied through a variety of disciplinary approaches. He asserts that all communication involves signs, “artefacts or acts that refer to something other than themselves; that is, signifying constructs”, and codes, “systems into which signs are organised and which determine how signs may be related to each other” (1990: 1). As a social practice, communication is, in Fiske’s view, central to cultural life. He defines two schools of communication, the “process” school which sees communication as the transmission of messages, focussing on acts of communication, and the second, “semiotic” school, into which this research falls.

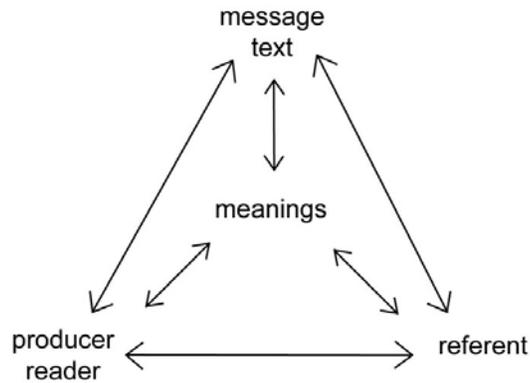
### **Communication as the generation of meaning**

The semiotic approach to communication considers the production and exchange of meaning (as opposed to transmission) – “how messages or texts interact with people in order to produce meanings” (1990: 2).

For semiotics ... the message is a construction of signs which, through interacting with the receivers, produce meanings. The sender, defined as transmitter of the message declines in

importance. The emphasis shifts to the text and how it is ‘read’. And reading is the process of discovering meanings that occurs when the reader interacts or negotiates with the text. This negotiation takes place as the reader brings aspects of his or her cultural experience to bear upon the codes and signs which makes up the text. ... so readers with different social experiences or from different cultures may find different meanings in the same text (Fiske, 1990: 3).

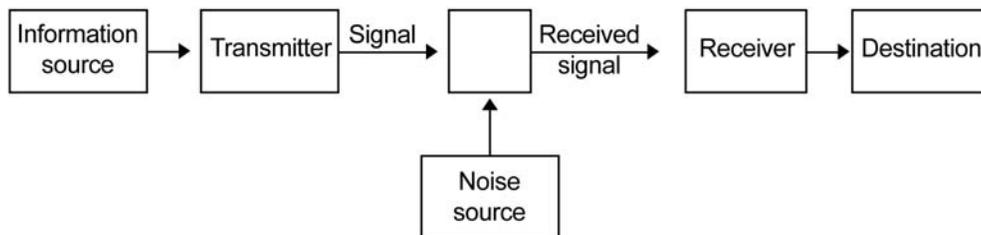
The following diagram demonstrates this:



**Figure 4. Messages and meanings (Fiske, 1990: 3)**

### **Models of communication**

Many different models of communication have been developed, usually with the purpose of presenting a summary of a particular theory by highlighting the most important aspects using a diagram (Jansen & Steinberg, 1991: 8). According to Fiske (1990-38), the best known original models include those developed by Shannon and Weaver (1949) (see Figure 5 below), Lassell (1948), Newcomb (1953), Gerbner (1956), Westley and Maclean (1957), and Jakobsen (1960).

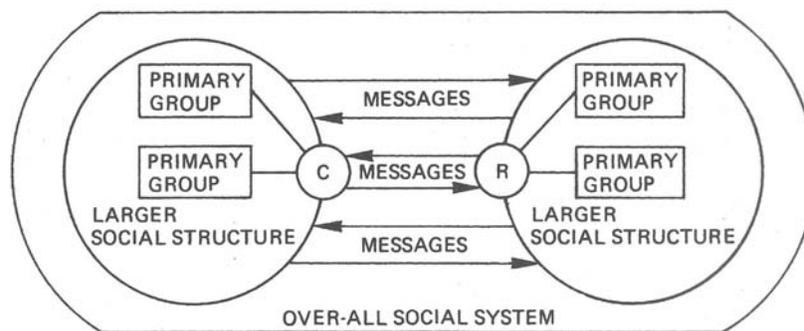


**Figure 5. Shannon and Weaver's model of communication**

Such models are favoured by the “process” school of communication mentioned above (Fiske, 1990: 6; Jansen & Steinberg, 1991: 8), and are often associated with positivist theories (Jansen & Steinberg, 1991: 8).

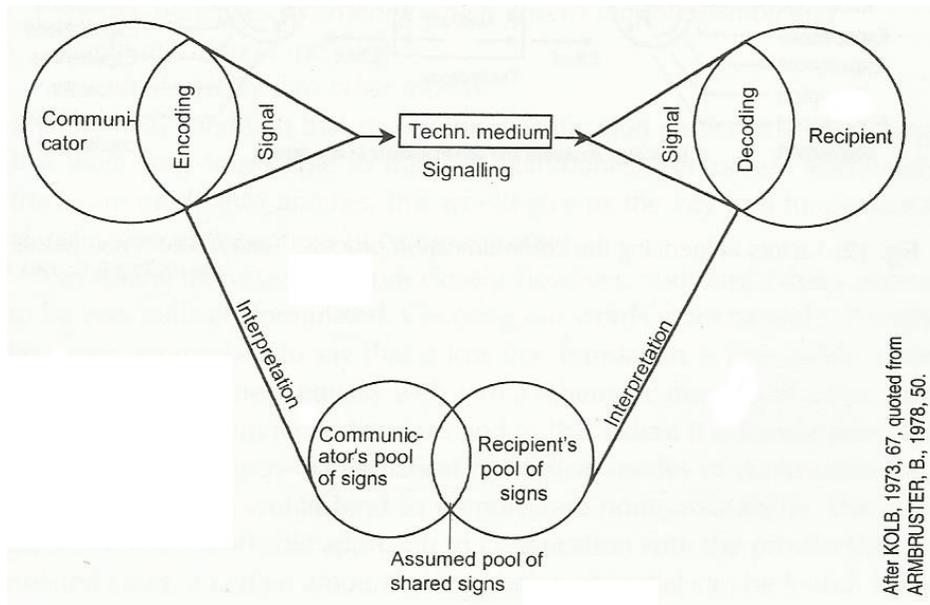
Approaches which describe communication as an ever-evolving process, for example a process in which the constitution of meaning is of crucial significance, do not usually generate models, a fact which illustrates one of the most important shortcomings of models. Models tend to present a static view of communication and, even if they try to show that a dynamic process is involved, they fail to capture its essence and ever-changing character (Jansen & Steinberg, 1991: 8).

Hoffman is less critical, recognising that older “simple transmitter-message-receiver models” are not able to represent the complexities of contemporary communicative situations, and that communication models need to account for contexts, individuals, feedback and changing roles (2000: 42-46). Some models have been adapted to cater for mass media communications, for example Westley and McLean’s complex mass-communication model (in Fiske, 1990: 31-34). Kress and Van Leeuwen contrast the model in Figure 5 developed by Shannon and Weaver, “two telecommunication engineers”, with a model developed by sociologists Riley and Riley (1959), “a kind of abstract map” showing a social system, social structures, groups and individuals (see Figure 6 below) (2006: 50-52).



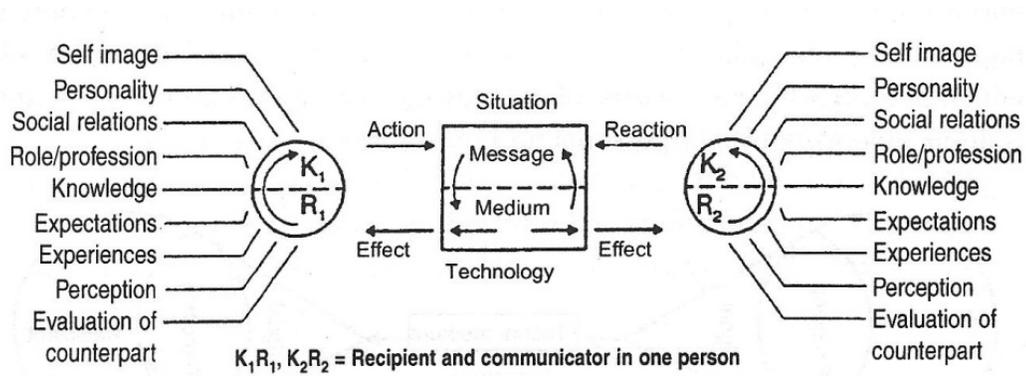
**Figure 6. Riley and Riley’s communication model (in Kress and van Leeuwen, 2006: 51)**

Hoffman (2000: 42) suggests that because “pictorial communication is nothing but a special case of ordinary communication, models of communication should also hold true for pictorial communication.” He explains that the original models accounted mainly for direct communication, such as speech between people, and that the “subsequent introduction of technological media into direct communication imposes additional conditions, and these in turn call for further refinement of the model.” (Hoffmann, 2000: 42). He adapts existing models of mediated communication for this purpose, an example of which is reproduced below. This model is relevant to my study because it incorporates technical media, encoding and decoding, interpretation by both communicator and recipient, and their ‘pools’ of signs, some of which are assumed to be shared.



**Figure 7. A model of indirect impersonal communication (Hoffmann, 2000: 45)**

Hoffmann states that this “simplified model neglects to show that, even in mass communication, there are ways of giving feedback, even if it requires much greater effort to find and use these than in direct personal communication, where it happens automatically” (2000: 45). An additional model, after Albrecht et al (1989) and Maletzke (1963), represents a communication process that allows role switching and feedback between communicators and recipients in both direct and indirect, mass communication.



**Figure 8. Factors influencing the communication process (Hoffmann, 2000: 46)**

Such models have their place, constituting an important part of the foundational knowledge needed to properly understand communication theory. Jansen and Steinberg suggest that, for work of an interpretive nature, models may be best suited to “organising and classifying research

findings, showing gaps in existing knowledge and generating research about specific aspects of communication”, and that it should be recognised that their simplicity distorts reality, selecting certain aspects over others to further particular interests (1991: 8-9).

For me, the salient points of this discussion are that meaning is constructed somewhere in the middle by the audience/reader, based on their conception of the purpose of the illustrated material and their knowledge of the signifying system used to construct the intended message. This means that multiple meanings occur, and intended messages are often lost somewhere in the middle of communicative processes or events. This may relate to the concept of *noise* in the system (see Shannon and Weaver’s model, above) which originally referred to technical challenges like a crackly telephone line hampering a conversation, but noise has come to encompass different levels of interference with communication, including anything unintentional which interferes with how the message is received (Fiske, 1990: 8). The “disjuncture” between the contexts of production and reception of illustrations described by Kress and Van Leeuwen (2006: 115-116) represents a potential noise source, because the producers and audiences of print materials seldom meet. The information needs to be communicated through some sort of symbolic system, and there is not the opportunity with mass print media to check and rephrase words or redraw an illustration during the interaction. Hoffman (2000: 43) discusses models in which he emphasizes the role of signs, stating that

... communication, especially symbolic communication, is dependent on signs. Signs are substitutes, not used in their own right but to stand in for a meaning they represent. Such signs need to be learned, and communication by way of signs and sign systems requires the communicator to encode the message and the recipient in turn to decode it.

This leads me on from models of communication to focus properly on semiotics, the science/study of signs, also referred to as semiology (Jansen & Steinberg, 1991: 63; Manning, 2004: 567; Rose, 2001: 69; van Leeuwen, 2001: 92).

## **2.4 Semiotics**

For communication to take place, I have to create a message out of signs. This message stimulates you to create a meaning for yourself that relates in some way to the meaning I generated in my message in the first place. The more we share the same codes, the more we use the same sign systems, the closer our two meanings will approximate to each other (Fiske, 1990: 39).

### **How I arrived at semiotics for this study**

Initially at the earliest stage of planning this research, the New Literacy Studies’ (NLS) seemed to be an appropriate broad frame to use, because it is an approach in which multiple literacies are

recognised and treated as context-bound social practices (Gee, 1999; Street, 2003). In addition, to examine the visual/pictorial aspect more specifically, I planned to use concepts drawn from social semiotics as applied to the visual mode by Kress and van Leeuwen (2006). Both the NLS and social semiotics can be described as post-structuralist, expressions of the phenomenon described as the “social turn” (Gee, 1999), and I will discuss this further, below.

In the course of conducting interviews and analysing the data, and reading further, I came to a fuller understanding of communication theory and the place of semiotics in this broad framework. Although the NLS and social semiotics remained relevant on an abstract level, I discovered other concepts which related more closely to the phenomena I had observed during the interview phase of the research, providing tools I could use to directly link theory to findings (see Chapters 5 and 6). These included concepts usually associated with structuralist semiotics, and I will elaborate on these below. Semiotics generally is acknowledged as being extremely useful for those seeking to understand how visual communication takes place, for providing “a potentially unifying conceptual framework and a set of methods and terms for use across the full range of signifying practices” (Chandler 2001, in Harrison, 2003: 47).

## **The foundations of semiotics**

As previously stated, semiotics, or semiology, is the science or study of signs. Charles Saunders Peirce (1839-1914) and Ferdinand de Saussure (1857-1913) are recognised as the co-founders of semiotics/semiology, and the different foci of their work are complementary (Aiello, 2006: 92; Fiske, 1990: 43; Jansen & Steinberg, 1991: 63; Manning, 2004: 570-572; Rose, 2001: 74-78). Later important and oft-quoted ‘semioticians’ include, amongst others, Louis Hjelmslev (1899 – 1965), Roland Barthes (1915 – 1980), Charles Morris (1901 – 1979), Thomas Sebeok (b. 1920), Umberto Eco (b. 1932), and Roman Jakobson (1896 – 1982) (Cobley & Jansz, 1999; Manning, 2004).

I will first briefly introduce Saussure, Peirce and Barthes individually, and save the detailed explanation of the specific concepts from their theories combined in my framework for the section below headed ‘Semiotic concepts relevant to this study’.

### **Saussure**

Saussure was one of the founders of the discipline of structural linguistics, out of which semiology emerged (Penn, 2000: 227). He focused on linguistic signs (words), and perhaps his most useful contribution was recognising the relativity between and within signs to build

meaning (Chandler, 1994; Penn, 2000). His ideas were first published posthumously in 1916, as the *Course in general linguistics*. According to Hawkes (1977, in Penn, 2000: 227), “the structural approach sees language as a system and attempts to discover ‘all the rules that hold it together’”. For Saussure the most basic unit of a linguistic system was the sign (words), and this system offers a model for analysing other sign systems, including visual signs (Penn, 2000: 229). The Saussurean concepts of motivation and constraint, and syntagm, are useful to my analysis, which I explain later in this chapter.

## **Peirce**

A philosopher, Peirce liked to be known as a logician, and he developed theories on pragmatism, metaphysics and scientific analyses amongst others, observes Hartshorne in his introduction to volume two of Peirce’s posthumously published collected papers (Peirce, 1932: iii). According to Peirce:

A sign, or *representamen*, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the first sign. The sign stands for something, its object. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the ground of the representamen (Peirce, 1932: 135).

Peirce left the application of his influential theory of signs to others (Magnussen, 2000: 195; Peirce, 1932: iv). He was more interested in the functions of signs than their structures, and his sign types are capable of accommodating anything that creates meaning in cultures. Discussions of these sign types seem to be found in every book which covers basic semiotics/semiology (for example, see Copley & Jansz, 1999; Jansen & Steinberg, 1991: 63-64; Manning, 2004; Moriarty, 2005: 230). The same is true of Saussure, but Peirce’s “richer typology of signs enables us to consider how different modes of signification work, while Saussure’s model can only tell us how systems of arbitrary signs operate” (Iversen 1986: 85, in Rose, 2001: 78). Thus Peirce’s basic triadic sign types, the icon, the index and the symbol, are central to my analysis.

## **Barthes**

Building on the work of Saussure, Roland Barthes was a key figure in 1950s’ and 1960s’ structuralism (Copley & Jansz, 1999; Fiske, 2011), and the first semiologist to treat signs as “dynamic elements of any given social and cultural fabric” (Aiello, 2006: 94). According to Fiske (1990: 90), he was the first to offer a model for the systematic analysis of how meaning is negotiated interactively. Between 1954 and 1956, Barthes’ work gained popularity through a

series of magazine articles that were eventually published as a collection of essays in *Mythologies* (1957). These essays deconstructed popular and often unnoticed everyday cultural phenomena, exposing how events, artefacts, and depictions that seem natural are often carefully constructed and perpetuate cultural myths through connotation. His ideas have had far reaching influence on many disciplines, particularly on communication, media and cultural studies (for example, see Hall, 1997; Procter, 2004). Barthes pays much attention to the construction of visual meanings, and the relationships between images and text, which are valuable to my study, particularly the concepts of denotation and connotation that I explain further on.

### **Semiotics versus semiology**

The literature is somewhat confusing regarding which term to use and when, for there is often seemingly inconsistent usage of the two terms among different authors. Moriarty (2005: 227) describes semiotics and semiology as “different but related approaches to a theory of signification – how these sign systems and codes work” but does not really explain the difference. According to Manning (2004: 568), Saussure invented the term ‘semiotics’ to describe a method to facilitate “semantic, syntactical and grammatical analyses, as well as serving a subject of *semiology*”, later noting that Barthes claimed semiotics as “a sub-category of semiology, the study of meaning” (Manning, 2004: 583). Rose (2001: 30) refers to ‘semiology’ as an analytical approach, and Van Leeuwen (2001: 94) discusses “Barthian visual semiotics”. The following is Cobley’s (1999: 13) account of the matter:

Saussure uses the term *semiology* as opposed to *semiotics*. The former word will become associated with the European school of sign study, while the latter will be primarily associated with the American theorists. Later “semiotics” will be used as the general designation for the analysis of sign systems.

I have opted to use the term ‘semiotics’, and refer to semiology only when quoting others who use that term. Semiotics represents both highly specialised, structured, analytical methods which can be strictly applied, and a “sponge concept” which soaks up different meanings while avoiding “precise definitions” (Manning, 2004: 567).

### **Criticisms of semiotics**

The semiotic analysis of images has been criticised for the potential danger of being overly subjective or idiosyncratic, and artificial (lacking in ecological validity) (Penn, 2000: 239-242). Structuralist semiotics’ focus on the signifying ‘text’ or image itself means there is traditionally little attention paid to audiencing, and little concern for reflexivity (Fiske, 1990: 40; Rose, 2001: 99). Certainly ‘mainstream’ semiotics is usually associated with structuralist approaches

(Cobley & Jansz, 1999: 53; Fiske, 1990: 115; Jewitt & Oyama, 2001: 135), which is evident in my discussion of de Saussure and Barthes particularly, above. According to Fiske (1990: 133),

Structuralism teaches us to look for the deep structures that underlie all cultural and communication systems. ... It therefore places communication (that is the social generation and circulation of meaning) at the centre of any society. Language, myths, and symbolic systems are the focus of structuralists' attention, for they provide unique insights into the way a society organizes itself and the ways its members have of making sense of themselves and their social experience.

Johansen and Larsen (2002: 228) stress the importance of Peirce's claim that signs are dynamic generators of meaning (as opposed to mere transmitters), a notion which is "crucial" to contemporary semiotics. However, Kress and Van Leeuwen argue that the respective ideas of Saussure, Peirce, Barthes and others have long been "overtaken by post-structuralism" and should be compared and contrasted with their own 'socially-oriented' approach (Arizpe & Styles, 2003: 42; Kress & van Leeuwen, 2006: 6). This leads me to discuss social semiotics.

## **Social semiotics**

Social semiotics in linguistics draws on the work of Halliday (1978), which interprets language within a socio-cultural context (where the culture itself is interpreted in semiotic terms as an information system) (Hodge & Kress, 1988: 124).

'Mainstream semiotics' emphasizes structure and codes, at the expense of functions and social uses of semiotic systems in social practice, all of the factors which provide their motivation, their origins and destinations, their form and substance. It stresses form and product, rather than speakers and writers or other participants in semiotic activity as connected and *interacting* in a variety of ways in concrete social contexts (Hodge & Kress, 1988: 1).

Visual social semiotics holds that visual structures "point to particular interpretations of experience and forms of social interaction" (Kress & van Leeuwen, 2006: 2). Kress and van Leeuwen's approach to visual meaning refers to a "grammar of visual design" (1996: 2). According to Cobley, their analysis appropriates the terms of linguistics, yet stresses "that visual representation possesses an autonomous language" (1996: 127). Visuals are susceptible to varied interpretations because of their open systems of meaning, more so than words whose meanings are likely to be fixed through dictionaries and conventional agreed-on uses.

Kress and Van Leeuwen (2006) explain their visual grammar as a general tool for the analysis of a range of visual social resources of particular groups. It can be used to explore explicit and implicit cultural knowledge, rules, and practices, and how these are expressed visually. Because it is general, this socially oriented grammar may be applied to various visual genres ranging from works of 'fine' art, to magazine designs, to scientific diagrams and even film shots – notably

examples from contemporary “‘Western’ cultures” (2006: 3). How this social approach to visual analysis differs from structuralist semiotic analysis is explained as follows:

We have quite deliberately made our definition a social one, beginning with the question ‘What is the group? What are its practices?’ and from there attempting to describe the grammar at issue, rather than adopting an approach which says, ‘Here is our grammar; do the practices and knowledges of this group conform to it or not?’ (Kress & van Leeuwen, 2006: 3)

## **Structuralism versus the social**

Both variants of semiotics treat meaning as something that is created or produced in the act of viewing the sign. However, in the structuralist model, meaning relies on relationships within a system where communication takes place when users share the same codes, whereas for post-structuralists, meaning is not fixed but “endlessly deferred” (Sheriff, 1989: 32). In my view these alternatives express different meaning-making strategies which viewers/readers may employ, depending on whether they know the rules/code used to communicate a particular message, as Jewitt and Oyama elucidate:

Some viewers interpret ‘according to the book’ ... others use whatever resources of interpretation and intertextual connection they can lay their hands on to create their own new interpretations and interconnections.” (Jewitt & Oyama, 2001: 134).

Although these concepts of meaning making are fundamentally different, they seem somehow complementary. This seems possible, if Sherrif’s observations have held true:

Structuralist and post-structuralist thought reflects (perhaps causes) a swing in modern scholarship from a stance of theoretical certainty to theoretical uncertainty ... it is within this milieu that the sign theory of Charles Peirce can give us a genuinely new opening to many of the old questions about autonomy, intention, validity of interpretation, the meaning of meaning. (1989: 50)

This is relevant for my study because while I acknowledge that the viewers of illustrations have the capacity to generate a variety of interpretations, in the context of health education there is the intention and the need to communicate particular meanings and an interpretive ‘free-for-all’ is problematic. Reader-response theorist Stanley Fish (1980) created the notion of interpretive communities to account for the role of social context in the production of meaning. Interpretive communities situate the meanings of texts “in something other than idiosyncratic and irresponsible interpretations” by the reader (Barbatsis, 2005: 286). Audiences’ common experiences and shared culture in the main should serve to create shared or somewhat predictable interpretations.

Apart from traditionally incompatible differences in theoretical orientation, tensions between mainstream or structuralist semiotics and social semiotics are not surprising, for new

developments, or approaches to almost any area of work, naturally arise out of some dissatisfaction or even disagreement with aspects of the old approaches and methods. Although theorists like Kress and Van Leeuwen have introduced new concepts and methods of analysis, I think *in practice* the structuralist and post-structuralist approaches to visual analysis are not always as different as exponents claim. Lemke (1990: 183, in Harrison, 2003: 48) describes social semiotics as a branch of the field of semiotics:

Formal semiotics is mainly interested in the systematic study of the systems of signs themselves. Social semiotics includes formal semiotics and goes on to ask how people use signs to construct the life of a community.

If social semiotics *includes* formal semiotics, as the above quote suggests, then these variants are not mutually exclusive, although they are sometimes treated as such. The literature on visual social semiotics suggests that in practice, its methods are seldom empirical and are usually used to analyse the internal structures of images rather than to explore the experiences and the interpretations of real audiences. Thus social semiotics may be vulnerable to the critiques levelled at other types of semiotic analysis – that it can be subjective, idiosyncratic and lacking in ecological validity. In addition, visual social semiotic methods are critiqued as being “complex” and “pedantic” (Jewitt & Oyama, 2001: 154). Examples of social semiotic visual analysis can be seen in Kress and Van Leeuwen (2006), Harrison (2003) and Jewitt and Oyama (2001).

### **Hybridized semiotics**

To address perceived shortcomings of semiotic analytical techniques, it is useful to introduce socially interactive research methods such as focus groups or interviews to be combined with the formal analysis of texts, objects or images. Penn (2000: 242) describes this as “hybridizing semiology”. Similarly, Moriarty and Sayre refer to this approach as conducting an intended-perceived study, drawing on reception studies:

Much of semiotic analysis ... owes its interpretive focus to structuralism. However, other scholars have approached semiotic analysis from a receiver viewpoint with an emphasis not on the linkages in the message, but rather on the connections in the mind of the viewer. Reception studies scholars work from the viewpoint of the receiver of the message — the reader/viewer of the text — and try to analyse the cues in the message, not so much as the message presents them, but rather as the viewer interprets them. These two approaches to the meaning of a text could also be expressed as a search for the *intended* meaning — the structural logic of the text as it is composed — versus the *perceived* meaning as received and interpreted by readers/viewers (Moriarty & Sayre, 2005: 245).

Although this strays into a methodological discussion which belongs in Chapter 4, it is important to articulate how using a mixed methodology relates to my theoretical stance. My actual

analytical tools are from structuralist semiotics, although I acknowledge the relevance of certain post-structuralist concepts from visual social semiotics. My use of a socially-orientated method of data collection, namely interviews, to supplement the semiotic analysis of the illustrations, means that I pay more than lip service to issues of social context. It is also easy to confuse the methodology with the theory, for example, to think that by conducting interviews I am mixing post-structuralist theory in with structuralist semiotics. In fact it is simply that part of my methodology involved social interaction through the interviews.

For the purposes of my study, I have investigated audience interpretations, and have not directly pursued the ideological issue of how social power might be expressed visually in the illustrations. Certain concepts belonging to visual social semiotics are relevant, and I have included these in my framework as a way of understanding my position in relation to that of the participants I interviewed. The nature of such a relationship must influence the intended and perceived messages of the illustrations. These relevant concepts are the notions of represented and interactive participants, and contexts of production and reception, explained below.

Nevertheless, ultimately I chose structuralist semiotic tools and concepts to understand the interviews and the illustrations. This is due to the focus of my research topic and main research questions, which is ultimately about the extent to which particular messages/information can be communicated visually. For this study there are limits to the usefulness of a relativist, socially-orientated stance which validates a range of interpretations. Although I do not want to record participants' interpretations as wrong, the intended meanings of the illustrations exist as a measure against which to weigh up the responses.

I will now clarify my approach to the various terms used in semiotics, before I elaborate on the concepts I use in my theoretical framework.

### **Dealing with terminology**

Semiotics, including social semiotics, offers the promise of standardised terms and language with which to discuss visuals, which some still feel is lacking, see, for example, Carstens, Maes et al (2006: 222). However, some of the same terms are used differently. For example Barthes (1977: 38) used the term 'relay' to describe when an illustration extends the meaning of a text, but Kress and Van Leeuwen (2006: 68) use the same word *relay* to describe a certain type of participant in a "chain of transactional processes". Their explanation of this use of the term is difficult to understand. Such tendencies to change the use of existing terms is perhaps one of the

many reasons that semiotics remains an approach rather than a fully formed discipline (Manning, 2004: 567). Fiske (2011: 49-50) expresses it thus:

One of the hardest aspects of any developing area of study is the amount of jargon it creates. New writers tend to coin new words, and it is only when a science becomes well established that its terminology settles down and becomes fairly widely agreed. In our case authorities cannot even agree on the name of the science itself.

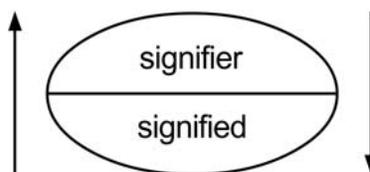
As I stated earlier in the chapter, the way to deal with this is to decide which concepts and terminology to use, and then use them in a coherent, logical and consistent manner. I have found that there is enough conceptual consistency across the recent mainstream literature on semiotics to allow me to do this with confidence.

## **Semiotic concepts relevant to this study**

### **Sign models and relationships**

A sign is something physical, perceivable by our senses; it refers to something other than itself; and it depends upon a recognition by its users that it is a sign (Fiske, 1990: 41).

Saussure's model of the sign consists of a signifier (the form of the sign) and the signified (the concept represented). Thus this model of the sign has two parts existing in a dyadic relationship (de Saussure, 1966: 65-67). In linguistics, the signified is the actual thing or idea that the signifier (a word/name) refers to, and this relationship is always bound by convention. However, other sorts of "motivated signs" or "natural indications" which function as signs (which I take to include non-linguistic signs) may be subject to less rigid conventions (Guiraud, 1971: 24), being "more or less inclusive and more or less precise" (Guiraud, 1971: 27).

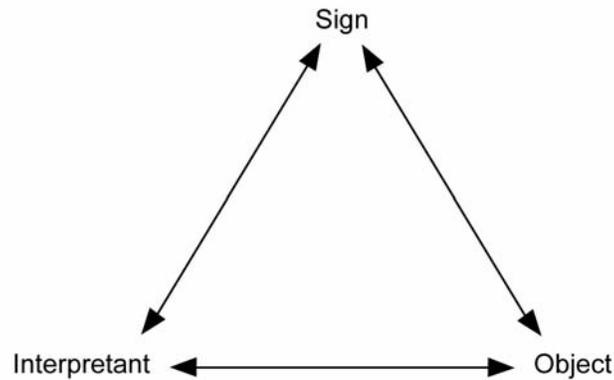


**Figure 9. Saussure's sign model (de Saussure, 1966: 114)**

This model has limitations for my purposes because it does not explicitly account for users of signs, which Peirce's model (below) does include. However, the two different models of Peirce and Saussure are not mutually exclusive, for according to Chandler (1994):

Peircean distinctions are most commonly employed within a broadly Saussurean framework. Such incorporation tends to emphasize (albeit indirectly) the referential potential of the signified within the Saussurean model.

Peirce (1932: 135) described signs as triangular in nature, a relationship consisting of the sign itself (Peirce’s original term was *representamen*), the object to which it refers, and the *interpretant* of the sign, seen in Figure 10 below.



**Figure 10. Peirce’s elements of meaning (Fiske, 1990: 42)**

The relationship between these three factors is fundamental to the sign process, known as semiosis, described as “the dynamic process in which it [the sign] signifies a given object and produces an interpretant” (Johansen & Larsen, 2002: 51).

It is important to note that the interpretant is not the same thing as the viewer/reader of the sign, but rather “the idea evoked in a person’s mind by the sign” (Moriarty, 2005: 228), or “a mental concept produced both by the sign and by the user’s experience of the object” (Fiske, 1990: 42). Manning (2004: 570) holds that the interpretant has much to do with the context of the sign, concluding that, “Defining and explicating context, or what is brought to the message, is the foundational idea of all interpretive work in social science.”

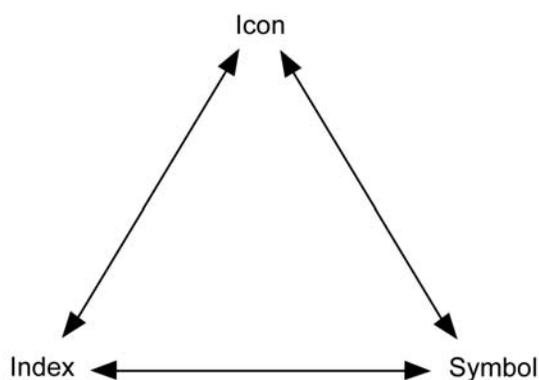
The sign had a social location and meaning for Peirce: a sign was something that stood for something in the eyes of someone, and in a sense, completing the sign, connecting it to the interpretant, was social activity. How this ‘standing for’ was accomplished depended on the source of interpretation. This, the Peircian interpretant, could be a body of knowledge, a formalized code book, or an abstract statement of principles, but it was not a person or an ‘interpreter’ (Manning, 2004: 570).

Others versions of semiotic triangles have been developed, such as those by Ogden and Richards (1923, in Fiske, 2011) and Noth (1990: 89, in Chandler, 1994), which differ mainly by changing Peirce’s terms and/or emphases. Peirce’s system became so “elaborate” and “complex” that most of it is not in general use, but his original recognition of contextual factors and of “the fundamental incompleteness of the sign” (Manning, 2004: 71) have had far reaching influence. It

is clear that the most basic concepts from his system retain currency and exert huge influence. I expand on these below.

### Categories of signs

Within an extremely complicated system (including three different trichotomies and ten classes of signs with additional subdivisions), Peirce's second trichotomy identified the fundamental sign categories as the *icon*, the *index* and the *symbol* (Peirce, 1932: 2.247). These are depicted in a triangular relationship, as seen in the figure below, and most signs are combinations of the three types, although one type is usually dominant.



**Figure 11. Peirce's categories of sign types (Fiske, 1990: 47)**

An icon is similar to the object that it represents, and in Peirce's words,

The only way of directly communicating a sign is by means of an icon; and every indirect method of communicating an idea must depend for its establishment upon the use of an icon. Hence, every assertion must contain an icon or set of icons or else must contain signs whose meaning is only explicable by icons (Peirce, 1932: 2.278).

Peirce identified three different categories of icon: images, diagrams, and metaphors (Peirce, 1932: 2. 277). Images include any sign that looks like the thing it represents, and would seem to be the most relevant category of icon for this research because illustrations are images. To elaborate, images have “simple qualities in common with the object ... Those objects we commonly refer to as images, such as portrait paintings, consist of a collection of properties shared by both object and sign.” (Johansen & Larsen, 2002: 37).

Diagrams and metaphors seem more abstract and conceptual. A diagram need not look like the object(s) it represents (Peirce, 1932: 2.281), but its parts correspond to the parts of the object(s) through “analogous relations” or a “relational likeness” (Magnussen, 2000: 196). What

differentiates the above description of diagram icons from the descriptions of image icons is the word 'parts'. Diagrams show only the elements that are vital to the intended meaning of the object, and leave out the rest. By suppressing certain details, a diagram "allows the mind to more easily think of the important features." (Peirce, 1998: 13) A metaphor represents the characteristics of its object through a parallelism in something else (Peirce, 1932: 2.277).

The metaphor clearly distinguishes itself from the image and the diagram by bringing together signs from two different areas. Images and diagrams, on the other hand, are often near indistinguishable, since most iconic signs that we refer to as images also contain diagrammatic properties, by presenting relationships as well as qualities. ... even simple images (in the common everyday sense) possess a high degree of freedom from the represented object, and that the method of representation is as dependent on conventions as it is on the object (Johansen & Larsen, 2002: 42-43).

Moving on to the index, this category of sign represents its object through a real connection, or by causing a mental association with the object (Peirce, 1998: 14). Common examples include the way smoke indicates a fire, or that paw prints show that an animal passed by, or a fever is symptomatic of illness. In fact the sign type 'index' is sometimes described as 'symptom', for example, in Maes et al (2008). In such cases, there is a physical relationship between the sign and its object, often a situation of cause and effect. Peirce named indices of this nature, reagents (Johansen & Larsen, 2002: 32).

A symbol has a meaning determined by convention, that is, a rule that users of the sign share (Peirce, 1932: 2.292). The appearance of symbols is often arbitrary, that is, they do not look like the thing they represent. Examples of symbols include the red cross on ambulances, the red ribbon for HIV/AIDS awareness, and many logos (Fiske, 1990: 48; Jansen & Steinberg, 1991: 66; Johansen & Larsen, 2002; Manning, 2004: 571; Rose, 2001: 78). It is also important to remember that any sign is to some degree conventional, even 'realistic' icons, and agreed upon conventions are seen as the social aspect of signs (Bryson, 1991: 65; Fiske, 1990: 56).

Peirce was very clear that signs seldom occur in pure form, as Johansen and Larsen elaborate:

Whenever a sign enters into the semiosis, the dynamic process in which it signifies a given object and produces an interpretant, all three mechanisms – connection/interaction, similarity and convention – help establish the meaning of the sign. Therefore the designations 'indexical', 'iconic' and 'symbolic' simply indicate the sign's dominant, but never sole, mechanism of the standing-for relation. ... In this way all three aspects of the semiotic process – indexical, iconic and symbolic – constantly support each other; and it is the interrelation between them that makes the production of meaning possible (Johansen & Larsen, 2002: 51-52).

Peirce also referred concepts of determinacy and indeterminacy, or vagueness, which can be applied to assess how much variation in interpretation a sign allows, which naturally applies to

visual signs (see, for example, Gaede, 2010), and to my mind this can be related to Barthes' anchorage, and the concepts of motivation and constraint discussed below.

Others have developed models based on Peirce's sign types with reference to the analysis of meaning in illustrations, modifying or hybridizing categories in order to account for the blurring of boundaries between the three. Examples of these include Gralki (1985, in Hoffmann, 2000: 84) whose categories include direct-iconic, logical, and analogical. These are adapted by Hoffmann (2000) as iconic (external resemblance), symbolic-analogical (structural or functional resemblance) and symbolic-abstract (only fixed by convention). Hoffman's categories are considered in terms of the representation of objects, quantities, relationships, processes and concepts, illustrated in the figure below.

	<b>Objects</b>	<b>Quantities</b>	<b>Relationships</b>	<b>Processes</b>	<b>Concepts</b>
<b>Iconic</b> external resemblance	<b>Illustrations from naturalistic to highly stylized</b>	Containers of different relative sizes, stacks, heaps	Illustrations of gesture and facial expression of actors	Illustrations of subjects in action	
<b>Symbolic- analogical</b> structural or functional resemblance	Construction plans Circuit diagrams Street maps <b>Maps</b>	Isotype statistical symbols Bar charts Line graphs <b>Venn diagrams</b>	Pictorial metaphors Tree diagrams <b>Network diagrams</b> Line graphs	Flow diagrams Process diagrams <b>Effect diagrams</b> Pictorial metaphors	Pictorial metaphors
<b>Symbolic- abstract</b> only fixed by con- vention	Symbolic figures Signets	Figures Formulas Units of measure- ment	Calculation signs Logic signs Formulas	Formulas Computer programs	<b>Pictorial symbols</b> Symbolic figures Signets Formulas

**Figure 12. Synopsis of representational forms using 2D still images (Hoffmann, 2000: 84)**

Carstens (2004a) refers to concepts from Hoffmann's framework in her study on how people with low literacy understand visual symbolism in educational illustrations. Maes, et al refer to interpretation strategies classified as symptomatic, iconic, and symbolic, "which increase in the level of abstraction they require and decrease in the level of natural correspondence with the real world they rely on" (2008: 151).

Here, symptomatic seems basically the same as indexical. For my own purposes I have tried to use Peirce's categories unaltered, acknowledging that the boundaries are blurred. While hybridizing the different sign types and coining new terms as some have done may seem a logical step to account for fluid boundaries I find value in using the elegantly simple core

concepts. These can be applied to concrete examples, and allow the exploration of boundaries and apparent exceptions to ‘rules’, case by case.

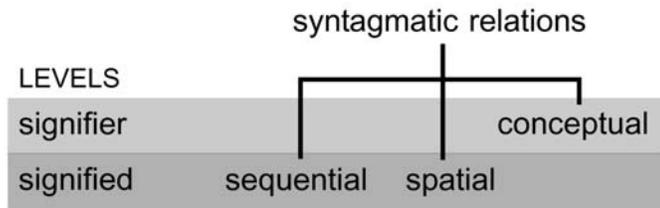
### **Syntagmatic relations**

Saussure held that a sign’s meaning depended on its relationship to other signs, and he identified two main relationship forms – syntagmatic and associative relations – quite different yet both necessary ways of sense-making. In Saussure’s linguistic terms, a syntagmatic relation is by nature linear, for example, in sentences individual words depend on their sequence/position in relation to other words for their meaning in the whole. Associative relations are in opposition to the linearity to the syntagmatic in that the meaning of a term depends on what Saussure called the “inner storehouse that makes up the language of each speaker” (1966: 123), where a user will associate a word with other similar, absent words and concepts s/he already knows, in a non-linear manner (de Saussure, 1966: 122-127). To me this links with the notion of mental schemas, discussed in section 2.6 below.

However, while associative relations may be relevant to my study, it is syntagm that seems to have been adapted and applied to the analysis of non-verbal, visual communication. Linguistic syntagms are structured according to strict rules, for example by the grammar and syntax that govern sentences (Moriarty, 2005: 237), whereas the ‘rules’ for visual codes are loosely defined and open to multiple interpretations (see discussion on polysemous signs below) (Penn, 2000: 229). This makes the syntagmatic analysis of visuals different from analysing written texts. For example:

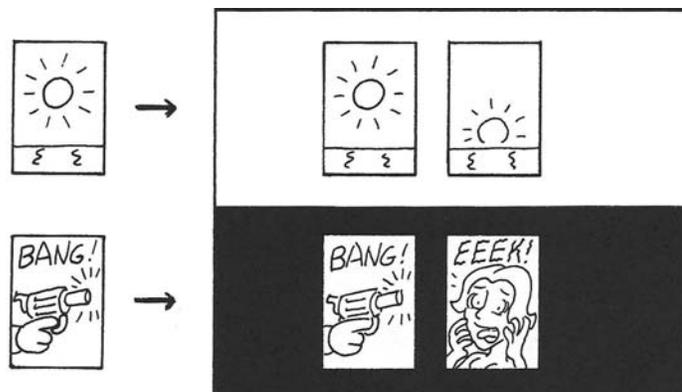
A syntagm is the message into which the chosen signs are combined. A road sign is a syntagm, a combination of the chosen shape with the chosen symbol. In language, we can say that the vocabulary is the paradigm, and a sentence is a syntagm. So all messages involve *selection* (from a paradigm) and *combination* (into a syntagm) (Fiske, 2011: 54).

Moriarty (2005: 237) describes a syntagm as a structured “chain of events, actions, or signs that lead to an understanding of how meaning is built up, such as words in a sentence or shots in a scene.” Chandler (1994) points out that while narrative is the most widely used of syntagmatic structures (sequential), there are other forms of syntagmatic relations, namely spatial and conceptual, expressed in the diagram below.



**Figure 13. Syntagmatic relations (Chandler, 1994)**

According to Penn (2000: 230), the signs in still images are seen together at once, and thus sign relations within an image are spatial as opposed to sequential. When multiple images (or frames) are grouped together with the intention of telling a ‘story’, for example in a comic style genre, then the individual images as sign vehicles relate in a narrative syntagm which can be classified as sequential (Legrady, 2000). In fact the term ‘sequential art’ is used by some to describe comics/graphic novels (Eisner, in McLoud, 1993: 5). Barthes himself referred to the images in “cartoons and comic strips” as “fragments of a more general syntagm and the unity of the message is realised at a higher level, that of the story” (1977: 41). The very simple example below illustrates visually how combining different pictures in sequence adds to or changes their meaning.



**Figure 14. The effects of combining pictures sequentially (McLoud, 1993: 5)**

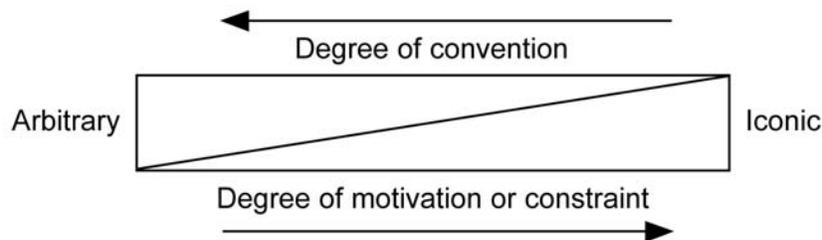
Similar to the way in which the borders between Peirce’s sign types are sometimes blurred, more than one form of syntagmatic relationship can exist in one sign. Visual syntagms are described in terms of spatial relations between elements in the composition, quite literally “above/below; in front/behind; close/distant...”, for example (Chandler, 1994). However, there must be conceptual relations of association between the constituent parts, in terms of what the depicted objects are, and not only where they are placed in relation to each other.

## Motivation and constraint

Saussure recognised iconic *signifiers*, and their *signifieds*, but also *arbitrary* signifiers, which meant much the same thing as Peirce's symbols. Saussure's followers, Barthes (1968, 1973) and Guiraud (1971) developed his ideas and added new terms, including *motivation* and *constraint*, to account for how the meanings of signs could be made less open to interpretation by certain factors which could motivate and constrain meaning (Fiske, 1990: 51-53). In Saussure's own words, and referring to words which his sign model classifies as arbitrary,

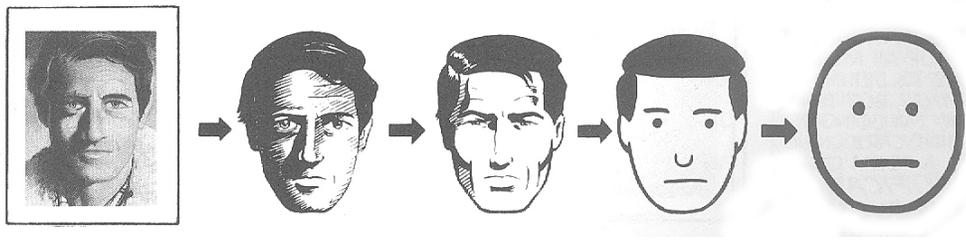
The fundamental principle of the arbitrariness of the sign does not prevent our singling out in each language what is radically arbitrary, i.e. unmotivated, and what is only relatively arbitrary. Some signs are absolutely arbitrary; in others we note, not its complete absence, but the presence of degrees of arbitrariness: *the sign may be relatively motivated* (de Saussure, 1966: 131).

Fiske explains these concepts as a continuum rather than as separate categories using the following diagram:



**Figure 15. Scale of motivation (Fiske, 1990: 56)**

To apply these concepts visually, a photograph of a man is iconic and thus highly motivated, a portrait of an individual because the medium of photography produces images that look like the reality we see around us. A line drawing of the same man is more of an abstraction, depending on the conventions of the particular artistic style used. The more arbitrary or abstract the style, the more the image becomes a symbol of a man or person, rather than a depiction of a particular individual such as in the photograph. A line drawing is thus less constrained by individual features of a person, and it could be placed more towards the middle of the scale than the photographic portrait. This is beautifully shown by McLoud's (1993: 29) illustration, below, which aimed to explain the degrees of abstraction and realism commonly used in comics, but which can also be seen as illustrating degrees of motivation and constraint in images. The 'face' on the far right of this illustration would belong towards the left side of Saussure's scale, above, because the image has become a symbol of a face, with arbitrary tendencies.



**Figure 16. Degrees of motivation and constraint (McLoud, 1993: 29)**

Symbols such as the continuous circular arrow recycle signs on plastic containers are conventional and arbitrary, and would belong towards the left of the scale.

Sign types and a scale such as the one above are useful tools for understanding how the meaning in illustrations is constructed (Moriarty & Sayre, 2005: 244), although the situation becomes more complex when one remembers to include the users of signs, for “it takes (at least) two to recognise a sign” (Bryson, 1991: 65).

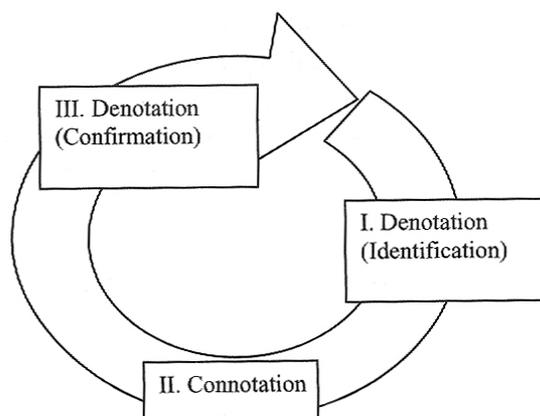
### **Layers of meaning: Connotation and denotation**

Much of the work of Barthes is described as visual semiotics. In this, the key idea is of the layering of meaning, firstly through *denotation* (what or who is being depicted, or a sign’s literal meaning), and secondly by *connotation* (what ideas and values are expressed through what is depicted and the manner of its representation, or a sign’s associated meanings) (Emmison & Smith, 2000: 75; Fiske, 1990: 85; Procter, 2004: 172-173; van Leeuwen, 2001: 96). Barthes (1977) refers to orders of signification, with denotation as the first order, and connotation as the second. According to Barthes (1977: 17-19), all “‘imitative’ arts”, including visual art such as illustrations, have these two elements, “the collusion of a denoted message and a connoted message (which is the – probably inevitable – status of all the forms of mass communication)”. Fiske (1990: 85-86) describes denotation as “the common-sense, obvious meaning of the sign”, but connotation is far more complex, working on many levels and in a cyclical relationship with denotation. Moriarty (2005: 231) summarises it thus:

A connotative meaning is “cultural baggage” attached to or associated with the object. It is derived from past experiences or repeated associations between a sign and its object. Barthes’ theory is that there is a first and second level of meaning. Denotation is the starting point; meaning making then shifts to the second level where connotation takes over and delivers a richer experience of the meaning by engaging Peirce’s interpretants.

This suggests that the possible connotations of an image are reliant on cultural associations and social conventions. Viewers’ individual experiences, culture and social background influence the

extent that they interpret or misinterpret an image. The relationship between connotation and denotation is cyclical because a viewer can take in the denotation, consider the connotations and then return to the denotation for confirmation or a reassessment of the initial interpretation (see Figure 17 below). Because images are more open to multiple meanings depending on the viewer, this cyclical process is said to involve ‘chains’ of signification (associations), and ‘shifts’ (or changes) of meaning during interpretation (Moriarty, 2005: 232-234).



**Figure 17. The circular nature of denotation and connotation (Moriarty 2005: 234)**

### **Anchorage and elaboration**

The complexity of visual meaning is described as ‘polysemy’, or the ‘polysemous’ nature of visual signs (Barthes, 1977; Rose, 2001: 92)

... all images are polysemous; they imply, underlying their signifiers, a ‘floating chain’ of signifieds, the reader able to choose some and ignore others. Polysemy always poses a question and this question always comes through as a dysfunction ... (Barthes, 1977: 38-39)

For Barthes, the question is, “What is it?” at the layer of denotation, and the most common method of addressing this is to include explanatory text with images, in the form of captions, “the linguistic message” (Barthes, 1977: 38-39). A caption helps to ‘fix’ the meaning of an image, and Barthes calls this *anchorage*:

The text is indeed the creator’s (and hence society’s) right of inspection over the image; anchorage is a control, bearing a responsibility – in the face of the projective power of pictures – for the use of the message (Barthes, 1977: 40).

The visuals we encounter in daily life are very often accompanied by written text (such as captioned newspaper photographs) or spoken words (in the case of television, for instance). Barthes (1961, in Fiske, 1990: 110) suggests that captions control the connotations an image may

have, by narrowing the range of possible meanings. The different ways in which words and image influence each other are worthy of consideration, and Barthes recognised different image-text relationships and functions, of which anchorage is just one. Barthes, according to Kress and van Leeuwen (2006: 18):

...distinguished between an image-text relation in which the verbal text *extends* the meaning of the image, or vice versa, as is the case, for example with the speech balloons in comic strips, and an image-text relation in which the verbal text *elaborates* the image, or vice-versa. ... He distinguished two types of elaboration, one in which the verbal text comes first, so that the image forms an illustration of it, and one in which the image comes first, so that the text forms a more definite and precise restatement or 'fixing' of it (a relation he calls *anchorage*).

The concept of anchorage is relevant to this study because the research investigates illustrations that were originally developed to appear in written materials aimed at low-literate audiences. Certainly, the purpose of the illustrations was to elaborate or to be elaborated by the text (written words), depending on the illustration and the materials, for the illustrations were from a few different sources. It was hoped that people who could not read the text might understand the intended message depicted visually in the illustrations. To repeat what has already been said in Chapter 1, pictures are often assumed to be easy for all people to understand "because of their inherent ability to represent things in a way which is similar to what we perceive and to create meaning in a non-arbitrary way" (Maes et al., 2008: 152). However, if all visuals, including illustrations, are polysemous, then what happens to pictorial interpretation when audiences are unable to read and understand the anchoring text? This research deliberately removes the anchorage from illustrations to investigate this question, hoping to discover the real effectiveness of illustrations for conveying meaning to people who do not read well.

The concepts discussed thus far are originally associated with structuralist semiotics, and I will now move on to outline the concepts from visual social semiotics which are relevant to my study.

### **Represented and interactive participants**

Kress and van Leeuwen (2006: 114) discuss the representation of narrative interactions, and that of conceptual relations, between the people, places and things depicted in images. More interesting, however, is the exploration of the relationships between producers and viewers of images. Two kinds of participants in visual communication are identified:

- *represented participants* (the people, the places and things depicted in images)

- *interactive participants* (the people who communicate with each other *through* images, the producers and viewers of images)

I initially considered my research to be mostly concerned with interactive participants, although the notion of represented participants is also relevant, dealing with what is signified through the people and objects depicted in the illustrations. The people depicted in the illustrations are intended to be recognisable to the intended viewers/audience of the materials in which the illustrations appeared. In a way I attempted to represent the audience in the illustrations through details such as racial group, dress and objects in the environment. This could open up a whole new line of investigation or debate about the extent to which such representations rely on stereotyping of people and their lifestyles. This was something I kept in mind throughout my research in case it emerged as an issue for the participants, which it did not. However, it is worth making the point that although stereotypes in general have negative associations, they are seen as an “accursed necessity” in certain types of images, including illustrations (Eisner, 2008: 11). For a convincing discussion of this, see Eisner (2008).

To return to Kress and van Leeuwen’s participants, also identified are three kinds of relations:

- relations between represented participants;
- relations between interactive and represented participants (the interactive participants’ attitudes towards the represented participants)
- relations between interactive participants (the things interactive participants *do* to or for each other through images) (Kress & van Leeuwen, 2006: 114)

My study can be seen as a meeting of interactive participants, between the producer (myself) and the viewers of the illustrations (the participants), attempting to temporarily close the gap between the context of production and reception, explained below. The interviews provide some insight into the interactive participants’ (viewers) responses to the represented participants. The semiotic analysis of the illustrations themselves deals with the represented participants and their roles in the signifying process.

In my understanding, social semiotics tends to consider these interactions in order to analyse socio-cultural power relations and discourses. These are very important issues to acknowledge and explore. Having said that, my study foregrounds the processes of how meanings are generated/negotiated by signifying practices, rather than how broader social power is expressed within the illustrations.

## **Contexts of production and reception ('Implied' and 'real' readers)**

The fact that the interactive participants (producers and viewers) of images almost never physically meet is referred to as “a disjunction between the context of production and the context of reception” (Kress & van Leeuwen, 2006: 115). This requires that the image producers have a mental concept of the intended viewer, similar to the notion of the “implied reader” of literary reader-response criticism, described by Iser (1974), who differentiated between implied- and “real” readers (1974: 34). This means choosing the style and the content of images according to a presupposed “specific encyclopaedic competence” on the part of a “model reader” (Eco, 1979: 7; in Kress and van Leeuwen, 2006: 115). Kress and van Leeuwen warn against excluding ‘real’ authors and ‘real’ readers from the production or analysis of “mass media texts” (literary and visual), because such texts are produced in social contexts for particular purposes:

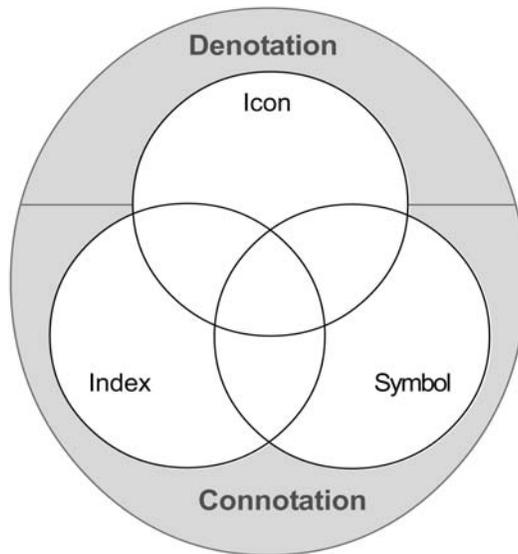
... in order to do certain things to or for their readers, and in order to communicate attitudes towards aspects of social life and towards people who participate in them, whether authors or readers are consciously aware of this or not (Kress & van Leeuwen, 2006: 115).

The use of social semiotics to analyse the differences between contexts of production and reception (and participants, implied and real) makes these factors in the communication process more explicit, by revealing that visual meanings are “interactive” and “encoded in ways that rest on competencies shared by producers and viewers” (Kress & van Leeuwen, 2006: 115).

In the next section I explain how certain key concepts discussed previously can be used together to explain how visual interpretation works.

## **Barthes and Peirce combined**

I developed a diagram, Figure 18, which combines the key concepts I use from Peirce and Barthes, to show how they are complementary and compatible.



**Figure 18. Peirce's sign types and Barthes' denotation and connotation**

Fiske's triangular depiction of Peirce's sign types was my starting point. The three circles represent the three different sign types, and they intersect in order to emphasize that most signs are not 'pure', but are combinations of two or all of these types. For me the areas of overlap between the circles show this more clearly than the more usual representation of the typology as a triangle. The triangle still exists, underlying the positioning of the overlapping circles. Lines drawn between the words icon, index and symbol would reveal the triangle again.

Influenced by the depiction of Barthes' denotation and connotation as cyclical (Moriarty, 2005: 234), as described earlier in this chapter, I added denotation and connotation within a wider shape, framing the sign types in the inner circles.

To recap, denotation, what Barthes' described as the "first order of signification", works at the level of surface appearance, in the same way that the type of icon Pierce classified as 'image' appears similar to the object it represents. This is where a viewer needs to recognise what is physically depicted. Connotation, the "second order of signification" relies on inference based on understanding the indexical and symbolic aspects of icons presented in certain ways/combinations. To evoke a deeper or more developed meaning, then indexical or symbolic qualities must be associated with the icon.

The sign types (icon, index and symbol) can account for the internal meaning construction within the sign (illustration). Denotation and connotation relate more to the cyclical process of meaning making on the part of producers and viewers, or what Barthes termed the "collusion of a denoted

message and a connoted message” (1977: 19). These concepts can be overlaid or combined to build a rich account of visual meaning-making processes at the stages of production and reception of illustrations.

This section has explained the semiotic concepts that are relevant to this study, and how they are complementary. The following section will explore visual literacy, an ill-defined concept frequently used, particularly in education.

## **2.5 Visual literacy**

The term ‘visual literacy’ has been in periodic use for at least 150 years (Elkins, 2008: 1), and more recently has been widely used, meaning different things to different people, depending on their discipline and purposes. Visual literacy gained momentum as a movement in the 1960s, the most influential group being the International Visual Literacy Association (IVLA) (Avgerinou & Ericson, 1997: 287). According to Arizpe and Styles (2003: 40),

Visual literacy also has its roots in structuralism (Saussure, Lévi-Strauss, Barthes *et al.*) and fits comfortably within notions of literacies (as opposed to the narrow view of literacy singular as reading and writing) as social practices (which brings in cultural and ideological considerations), pioneered by scholars such as Street (1984)...

In my experience visual literacy has been used in South Africa mainly by those concerned with literacy and education (Basel, 1995; Bouwer, 2000; MacDonald, 1996; Moore, 2001; Sejake, 1993).

### **Definitions of visual literacy**

Visual Literacy ... is a strong and seemingly unavoidable metaphor, one that compares the acquisition of skills, competence and expertise (quite distinct levels of mastery) to the mastery of language and literature. Seeing, it suggests, is something like reading. But how exactly? And how is seeing different from reading? What are the limits of this metaphor? (W. J. T. Mitchell, 2008: 11).

Certainly the use of linguistic terms to define and understand the visual is a double edged sword, potentially “appropriate and liberating” in some situations, and “misleading or constricting” in others (Raney, 1999: 41). Speech and written language have “a fully articulated and systematic mode of communication that most non-verbals don’t have”, such as the structured logic of grammar systems (Bruski, 2011: 14-15).

Dondis (1974: 9) suggested that it was problematic to “over define” visual literacy when developing an approach to the study of how people interpret what they see. However, “a general lack of focus” and lack of consensus on its definition has caused it to be contentious (Arizpe &

Styles, 2003: 40; Raney, 1999: 41) and to be rejected by some (Pettersson, 2009: 38). For example, Avgerinou and Ericson (1997: 290) went so far as to suggest discarding the term altogether, while arguing in favour of reawakening debates “to bring the concept of Visual Literacy to a wider audience.” Thus the term ‘visual literacy’ remains in use despite its lack of specificity, particularly as several of the seminal texts include the term in their titles, for example, *A Primer of Visual Literacy* by Dondis (1973), *Visual Literacy: Image Mind and Reality* by Messaris (1994), and more recently *Visual Literacy* by Elkins (2008), who himself describes the term as “dubious” (Elkins, 2008: 8). Visual literacy also appeared in curricula policy documents of the South African Department of Education (DOE), in the Literacy, Language and Communication Learning Area and the Arts and Culture Learning Area, although vaguely described and with very broad outcomes, such as “interpreting visual information” (Bouwer, 2000: 44; Moore, 2001: 33). Internationally proponents of visual literacy are concerned with promoting visual studies in school and college curricula, in order to both empower and protect young people from unconscious visual manipulation in what has become an image saturated environment (Avgerinou, 2009).

The culture we call postmodernism is best imagined and understood visually, just as the nineteenth century was classically represented in the newspaper and the novel (Mirzoeff 1998, in Avgerinou, 2009: 28).

Kress and van Leeuwen (2006: 23-34) distinguish between the “old” and the “new” types of visual literacy. This refers to the ways that image styles, and their roles in relation to verbal text, have changed. They use the example of older illustrations in children’s books, which tended to be realistic and detailed in style, and “subservient” to the written text. These are contrasted with an illustration in a more recent children’s book, which is “stylized and conventional and quite clearly a coded image” and unaccompanied by any verbal text. The meaning lies in the illustrations, which can be adapted by the readers to tell a different story, in any language. This example can be related to the ways in which visuals increasingly bear content separate from, or without, verbal/written text, most obviously seen in digital media, on computer programmes and on the internet, where icons and symbols (stylized, conventional and coded) often stand for things in place of words. (This may seem to contradict some of what I discussed earlier about the anchoring function of text, but the point is that in many situations or media, image-text relations and/or functions have changed.)

We have looked at these kinds of visual literacy as historical and cultural alternatives. But they also exist side by side in our own culture, and we suggest that we are in the middle of a shift in valuation and uses from one mode to the other, from the ‘old’ to the ‘new’ visual literacy, in many important social contexts (Kress & Van Leeuwen, 1996: 21).

Thus visual literacy in these terms is relevant to almost every aspect of modern life in a developed/urban context, and although as an umbrella it includes the terrain of my research, it is not enough to frame the study or analyse data. Avgerinou (2009: 29) lists the ten common ideas which most definitions of visual literacy cover, concluding that,

... in the context of human, intentional communication, visual literacy refers to a group of largely acquired abilities, i.e., the abilities to understand (read), and to use (write) images, as well as to think and learn in terms of images.

She lists 11 visual literacy competencies (Avgerinou, 2009: 29-30) which are reproduced in her words here:

1. Knowledge of Visual Vocabulary: knowledge of the basic components (i.e. point, line, shape, form, space, texture, light, colour, motion) of visual language.
2. Knowledge of Visual Conventions: knowledge of visual signs and symbols, and their socially agreed meanings (within the western culture).
3. Visual Thinking: the ability to turn information of all types into pictures, graphics, or forms that help communicate the information.
4. Visualisation: the process by which a visual language is formed.
5. (Verbo-) Visual Reasoning: Coherent and logical thinking that is carried out primarily by means of images.
6. Critical Viewing: Applying critical thinking skills to visuals.
7. Visual Discrimination: The ability to perceive differences between two or more visual stimuli.
8. Visual Reconstruction: The ability to reconstruct a partially occluded visual message in its original form.
9. (Sensitivity to) Visual Association: The ability to link visual images that display a unifying theme. Also: (Sensitivity to) Verbo-Visual Association: The ability to link verbal messages and their visual representations (and vice versa) to enhance meaning.
10. Reconstructing meaning: The ability to visualise and verbally (or visually) reconstruct the meaning of a visual message solely on the evidence of given information which is incomplete.
11. Constructing Meaning: The ability to construct meaning for a given visual message on the evidence of any given visual (and perhaps verbal) information.

I think there are some problems with this list, for example, I find number 4 on the list vague, and numbers 8 and 10 seem too similar. Number 11 is interesting because it does not refer to intended or correct meanings but rather to visual or verbal evidence to support one's interpretation of a visual message. It seems to me that 11 also summarises what one would be able to do by achieving/possessing many of the other competencies on this list. Thus for my research, I find number 11 along with numbers 1, 2 and 9 most relevant. Avgerinou's addition of "(within the western culture)" at the end of number 2 is interesting, because it suggests that these competencies refer to visual literacy in the developed world, or the 'West'.

There seems to be an assumption that visual literacy training can result in a person becoming "visually literate", along with a recognition that rapid change and technological developments mean that skills, definitions and curricula must constantly evolve. This seems no different from the 'challenges' of defining other kinds of literacy, including the traditional concept of reading and writing words, which are also contentious and shifting (Lyster, 1992; Tyner, 1998: 15-18).

Arizpe and Styles offer a comprehensive summary of visual literacy in terms of "processes, frameworks and models, towards a developmental theory of response to visual texts", using the term 'text' loosely to include paintings, photographs, video, book illustrations, and other artworks (2003: 39). For them Raney's framework of five "kinds of visual literacy" is the most convincing, and certainly I find these relevant to my work, especially the first three categories (Arizpe & Styles, 2003: 41; Raney, 1999: 45-46).

- Perceptual sensitivity (basic visual reception, the sensitivity of which is determined by cultural factors and education)
- Cultural habit (variations according to cultural practices and historical periods)
- Critical knowledge (historical, cultural and artistic on the part of the viewer)
- Aesthetic openness ("our capacity for visual delight", that is, emotional and sensual responses to visual experience)
- Visual eloquence (the integration of all of the above)

The other, older definition which really fits with my research is Sinatra's, which describes visual literacy as "the active reconstruction of past experiences with incoming visual information to obtain meaning" (Sinatra, 1986: 39). This definition leads me on to consider how such processes work.

## **2.6 Perception and cognition**

Many definitions of visual literacy refer to the mental processes that happen simultaneously with the physical act of seeing, including Sinatra's and Raney's above. According to Williams (2005: 194-195), the eyes are responsible for only about ten percent of the processes of "visual knowing" and the rest is cognitive activity. Thus cognitive psychology is recognised as "an essential foundation for communication studies" (Hoffman, 2000: 53), and references to the works of Piaget, Vygotsky, Bruner and Arnheim are common (For examples, see Arizpe & Styles, 2003; De Santis & Housen, 2009; Fuglesang, 1973; Hoffmann, 2000; Sinatra, 1986). Perception is a complex process involving several organs of the body (Hoffmann, 2000: 50), and is an essential part of decoding messages (Severin & Tankard, 1992: 57). Perception is described in a simplified manner thus:

In the first step, visual information is transmitted from the retina to the brain. Essentially a two dimensional array of light and colour values, this information is processed by the brain to detect the outlines of objects and the edges of surfaces. ... the brain proceeds to figure out the scene's three dimensional properties and to identify the objects in it (Messaris, 1994: 11).

Visual stimulus activates stored knowledge of objects or memories of events, known as schemas, explained as "serviceable though imperfect devices for coping with complexity" (Fiske and Kinder, 1981, in Severin & Tankard, 1992: 66). Schemas are also described as the "code relating consciousness and surrounding world in perception and interpretation" (Johansen & Larsen, 2002: 217). Without realising, the viewer compares prior knowledge with what is perceived in the present, and modifies that prior knowledge accordingly. This leads to a tension, both physical and mental, when the stimulus from the "outer world" – what is seen – encounters the stored mental schema of the "inner world" – things one has seen, imagined and knows. This tension is relieved by making sense of what is seen and what is known, and can be understood as problem solving. Thus perception is a cognitive activity which involves thinking (Arnheim, 1970: 24). The "cycle of perception" is repeated and shapes one's mental representation of external events, into which personal information is unconsciously introduced (Hoffman, 2000: 53). Not only is perception mostly unconscious, it is also selective, in that one's existing expectations, attitudes, and unconscious assumptions exert influence over what one sees (Severin & Tankard, 1992: 41).

This explains the need for external stimulation to promote mental development, and part of this is building one's perceptual 'brain bank' of images. As new information is assimilated, cognitive structures change in order to accommodate that new information (Sipe 1998, in Arizpe & Styles, 2003: 31). Barry (2005: 46-47) remarks that "much of our visual experience today comes vicariously through media", and that there is a strong relationship between vision and memory. If

what we see is integrated into a mental schema, then those who are constantly exposed to global images and information through electronic mass media possess “a veritable nonverbal storehouse of events, of peoples, and of impressions lodged in visual memory”, in addition to the sights they have personally encountered (Sinatra, 1986: 98). Those with less exposure to primarily visual media are likely to have less varied visual experiences to draw on, perhaps being more dependent on what they have directly witnessed. This relates back to Raney’s dimensions of visual literacy (particularly those to do with “cultural factors and education”, above) and explains why individuals may perceive and interpret the same visual stimulus differently.

According to Moll (1994), Vygotsky proposed that higher psychological processes are fundamentally culturally constructed, and that all human cognitive operations are the “internal reconstruction of an external [social] operation”. In addition, people acquire sign systems of communication socially, “then apply these sign systems in the regulation and direction of their own thinking” (Moll, 1994: 190-191). In the past, studies with low-literate, uneducated people defined their cognition in relation to “perception, generalization, classification and deductive reasoning” as “Graphic functional” which means “activity guided by the physical features of objects that the individual works with in practical circumstances”, meaning the same as “contextualised thought” and “concrete intellectual operations” (Luria 1976, in Moll, 1994: 192). This notion has been criticised as unfairly comparing literate with non-literate societies, and implying a denigration of the latter, yet should not be dismissed outright for politically correct reasons alone. Moll (1994: 192) summarises Luria’s central research insight as follows:

It is that social contexts whose dominant form of cultural activity is concrete in character will tend to generate and elaborate *concrete* higher psychological processes at the level of mind.

Moll goes on to suggest that Luria’s ideas are more palatable to contemporary thought if they are considered in the light of schooling, and the “cognitive consequences” thereof, which somehow removes the sense of making a value judgement about the cognitive processes of societies or communities.

Schooling is the only social domain in which de-contextualised thought is the dominant mode of cognitive activity and sustained over a significantly long period of time. It is also the only domain in which we are required to specifically attend to this characteristic of the tasks we are learning to master. School knowledge, as a cultural form, thus represents a rupturing of the boundaries of everyday experience (Moll, 1994: 196).

This seems relevant to findings that low-literate viewers found it more difficult to recognise unfamiliar objects and pictorial elements in illustrations than literate viewers did, in other words, literate viewers tend to be more able to process and understand unfamiliar things (See Carstens et al., 2006: 225; Hoogwegt et al., 2010; Maes et al., 2008). This could be linked to schooling, or

other formal educational experiences, and exposure to varieties of visual media, and not just verbal literacy levels but the whole scenario that enables or accompanies literacy. Thus, viewers with formal education or ‘informing’ background experience/knowledge seem more likely to have more developed cognitive schemas or frameworks to assist with interpretation.

The above ideas are congruent with the definitions of visual literacy that highlight perception and cognition in the light of context and culture. This goes further than the perceptual ‘problems’ linked to culture highlighted by Ausburn and Ausburn (1994: 445), which concentrate mainly on Western “representational conventions, such as perspective, dimensionality, abstraction and symbolism”, by moving beyond basic technical visual skills which can be taught and learned, into the realm of understandings of knowledge and interpretive skills which formal education offers.

It seems natural to relate these theories of perception and cognition back to Peirce’s interpretant (above), because they help to explain why different individuals will interpret the same signs differently. Our interpretants of signs depend on the experiences that shaped our mental schemas, and these are context-dependant.

This section concludes by considering analogical thinking, a cognitive skill involved when interpreting images, and which links to terms and concepts used by Barthes and others, which inform this study.

## **Visual analogies**

Messaris (1994: 4) contends that “the skills of pictorial interpretation are derivatives of cognitive skills that may be assumed to pre-exist independently of a viewer’s experience of visual media.” Recent literature on pictorial interpretation frequently contains the term ‘analogical’ or ‘analogous’ to describe visuals which have a “natural correspondence” to the appearance of reality (for examples, see Carstens et al., 2006; Hoogwegt et al., 2010; Maes et al., 2008).

“Analogical thinking” is defined as an intellectual activity of “spatial intelligence” (Gardner 1999, in Messaris & Moriarty, 2005: 489). Analogical thinking involves being able to see similarities between different things, such as a real object and a pictorial representation of the object, and to understand some meaning from the relationship, or “derive insight” (Stafford 1999, in Messaris & Moriarty, 2005: 489). This concept has been applied to different types of graphics, including more conceptual representations such as bar graphs (the sizes of the bars are

said to be analogous to the quantities they represent) (Tufte, in Messaris & Moriarty, 2005), however, it is most relevant to this study when used relating to ‘realistic’ images:

... the most obvious sense in which visual images can be called analogical is illustrated by any clear, full-color photograph of a recognisable object. Here there is more or less a close analogy between the shapes, colors and overall structure of the image, on the one hand, and the corresponding features of the real world, on the other (Messaris & Moriarty, 2005: 490).

Barthes (1977: 17) describes photographic images as the “perfect analogon” of reality, linking the analogical to denotation and first order signification. According to Maes et al. (2008: 154), “the ‘analogous’ nature of visuals, which is said to make visuals easy for everybody, is only one layer in a more complicated interpretation process of visuals.” This is further explained by Carstens et al. (2006: 228), who suggest that an illustration’s “ultimate interpretation requires a full understanding of the range of analogical and abstract [pictorial] elements” as well as a “correct assessment” of contextual knowledge of an illustration’s content. Thus, layers or levels of meaning still apply to analogical images (icons), and while one may recognise the literal denotation of an image, the full meaning relies on how one interprets the connotations.

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In this chapter, I have presented and discussed the theories that explain the findings of my study, and which inform the analysis of the meanings – intended and otherwise – in a variety of illustrations. The interdisciplinary approach necessary to explain how and why it is that people interpret illustrations in particular ways involves complex combinations of concepts from communication theory. In my search I explored several areas of work which seemed relevant, and yet ultimately some were discarded for the sake of conceptual clarity. I believe I have described a framework which is coherent, appropriate, and offers a plausible lens through which to view my conclusions.

In the following chapter, I will continue my exploration of relevant literature, this time focussing on findings from previous research that contextualises my study.

## Chapter 3: Literature review – Research in context

### 3.1 Introduction

The literature on communicating with low-literate audiences using visual materials emanates from a variety of academic fields, including development policy, sociology of developing countries, media didactics, communication sciences, visual literacy research, the health sciences and agricultural extension (Hoffmann, 2000: 4; Rother, 2008), but much of the literature is dated. Some have suggested that for a significant length of time there was a gap in research into pictorial literacy in development contexts (Carstens, 2004b: 466; de Lange, 1999: 2; Hugo & Skibbe, 1991: 49).

Overall, the relevant literature is very widely dispersed, some of it very difficult to obtain and, in terms of thought, it requires a great deal of effort for an individual mind to grasp, as it involves having to digest an extremely varied range of highly specialized vocabularies and bodies of ideas (Hoffman, 2000: 4).

Peer-reviewed journal articles were the main way of accessing more recent research findings, theories and opinions on topics relevant to this study. These articles came from a variety of fields including patient education research (health), media studies, technical communication, visual communication, visual literacy, education, adult basic education, and literacy studies more generally. The lamented lack of recent locally-relevant literature is changing. Two large SANPAD-supported studies conducted in South Africa, namely *Improving the effectiveness of public information documents on HIV/AIDS in South Africa* (EPIDASA, 2003-2006), and *HIV/AIDS communication aimed at local and rural areas* (HACALARA, 2007-2010), produced a number of scholarly publications. Amongst these are two extremely pertinent book chapters on visual health communication for low-literate audiences by Hoogwegt et al. (2010) and Maes et al. (2008), emanating from the EPIDASA project. Recent journal articles by Gaede (2010), and Jordaan (2010) are also very useful references. These will be discussed in more detail in section 3.5 below.

Unpublished local theses were also important points of reference for this study, because I was interested in any research which explored pictorial interpretation in low-literate contexts or which related to health education or development communication in South Africa. In addition there have been interesting findings in the field of occupational and environmental health which consider the interpretations by low-literate farm workers of pictograms in instructional leaflets for pesticide use (Rother, 2008). Relevant unpublished dissertations included those by Sejake (1993), Basel (1995), Griffiths-Myers (1997), de Lange (1999), Bouwer (2000), Moore (2001),

Stefano (2004), and Bruski (2011). The latter reports research conducted in the USA but is highly relevant. These supplement the patchwork of information from many sources, eras and geographical locations, and helped me to maintain a sense of the history and context framing my research.

This chapter is divided into the following sections:

3.1 Introduction

3.2 Communication for development

3.3 Print materials

3.4 Illustrations

3.5 Health education

### **3.2 *Communication for development***

One may think sometimes that development can come about only by peoples' own creative action in an effort to increase their control over the environment – and themselves. I am inclined to believe that this is basically a problem of applied communication (Fuglesang, 1973: 18).

I am attracted to Fuglesang's emphasis on applied communication in his consideration of development, which he contrasts with what he calls "the conventional, one-way, information service thinking" (Fuglesang, 1973: 10). Similar views of the relationship between development and communication are explicitly expressed or implied by many others (Ausburn & Ausburn, 1994; Carstens, 2004b: 459; Carter, 1999; Linney, 1995; Zeitlyn, 1992).

Development is not a neutral term, and it is interpreted differently in different contexts. According to Roberts (1984) development means "the more equal distribution of power among people" but many approaches to development do not empower people, because true empowerment is something people can only do for themselves (Roberts, 1984, in Linney, 1995: 1). I prefer Hoffman's description of development as "a social process ... a joint effort to realize better ways of living together, towards creating a better future" (2000: 291) because it describes something people do together rather than something one group does to or for another. Top-down approaches to development are reflected in one-way communication models, which reflect the processes used to develop many educational materials and resources (Carstens, 2004b: 461). Effective materials for development communication should be people-centred, and ideally produced in an action-reflection cycle with the active participation of members of the intended audience/users of the materials at all stages (Germann, 1995; Linney, 1995: 16).

## Literacy and development

The common-sense definition of literacy is often that of the ability to read and write words on paper (or computer screens, or school boards), but this reveals very little of the complexities surrounding the study of literacy, what it is and how it is used in different contexts. According to Tyner, “literacy resists and refuses all attempts to pin it down into simple definitive categories that transcend history” (1998: 15), and the term “is shorthand for cultural ideals as eclectic as economic development, personal fulfilment, and individual moral fortitude. To be illiterate is a powerful social stigma” (Tyner, 1998: 17). In short, there is no one thing that is literacy, but rather a collection of practices which can be seen as existing on a continuum, and therefore any definition is a “cut off point” for practical purposes in a particular situation (Lyster, 1992). This presumably has implications for how one defines any sort of literacy, including visual and pictorial literacy, and hence the definition dilemmas to do with visual literacy which I discussed in the previous chapter.

Distinctions have been made between ‘oral societies’ and ‘literate societies’, and literacy has been linked in an oversimplified manner to ‘civilisation’, intellectual achievement and economic growth (Hannon, 2004: 21-22). Havelock, Goody and Ong are known as the “great divide theorists” who argued, to put it very simply, that the thought processes of literate and illiterate people are different (Lyster, 1992: 22). Such notions have been convincingly criticised, by, for example, the New Literacy Studies theorists (Halverson, 1992; Street, 1995). The issue remains complex and contested (Hannon, 2004: 22).

Despite the above on-going debates, literacy is, for good reasons, seen as one of many indicators of development (UNICEF, 2010; World Bank, 2010), and the converse of this is that *illiteracy* is usually seen as a barrier to development (Hoffmann, 2000: 120; Klaas & Trudell, 2011).

While acknowledging the link between illiteracy and poverty (see for example Kiggundu & Castle, 2006: 66), Rule guards against making simple assumptions, for example, that illiteracy causes poverty or vice-versa (2006: 118). The attainment of literacy for adults is thought to be an empowering vehicle of social change, with the potential to free people from dependency and marginalisation, leading to development and poverty alleviation (Hunter, 2010; Openjuru, 2004: 424; Pretorius, 2004: 343). This is not always the case, especially if there is inadequate post-literacy support, such as a lack of appropriate printed reading materials (ACCU, 1985: 3-5; Carter, 1999: 56; Hoffmann, 2000: 121; Lyster, 1995: 2-3). Despite these issues, basic education

is a constitutional right in South Africa, making adult literacy a matter of “redress and equity”, which should be contributing to personal and social development (Rule, 2006: 130-131).

### **Literacy materials and development**

According to Lyster (1995), UNESCO’s efforts to promote literacy from the 1970s onwards were dominated by the notion that education would make people economically productive in underdeveloped countries. This meant there was a lot of support for the creation and use of literacy materials on “development themes and topics: pit latrines, breastfeeding, coping with diarrhoea, protecting the environment, starting a co-operative, planning a family, etc.” Although this meant a sad neglect of most other types of literature for such audiences, a positive spin-off was that local expertise in literacy and materials production of adult basic education was developed in parts of what was then generally dubbed ‘the third world’ (Lyster, 1995: 6). It is worth noting that South Africa did not enjoy the support of UNESCO in this regard (Lyster, 1995: 7), presumably due to apartheid. This may explain why the older literature and research into literacy materials (including work on visual literacy) seems to be mainly based on work in Asian countries like India and Nepal, and in some other African countries rather than South Africa.

In my more recent experience, the overtly ‘empowering’ approaches to materials development advocated by Linney (1995) amongst others, are seldom practised outside of small, community-based projects run by activists or non-governmental organisations, and are not easily sustainable due to practical limitations such as funding. It seems to me that this may relate to development paradigms which have changed under the influence of the dominant global ‘consumer-culture’, or what has been called the “direct influence of capital over learning” (Aitchison, 2000: 7). The profit motive has more or less overtaken social transformation agendas (Hunter, 2010). In this climate, most literature advocates audience research and the pre-testing of materials with the intended users (for example see PATH/FHI, 2002) which are important and useful, but less people-centred and developmental in Linney’s ideological sense. Carstens (2004b: 459) accurately sums up what happens in practice: “owing to budgetary and time constraints, these practitioners often rely on gut feelings ... which may result in the production of materials which do not fit the needs and the skills of the intended audiences.”

### **Literacy rates in South Africa**

Assessments of national literacy rates are ... notoriously unreliable. This is partly the result of the problem of definition and measurement of literacy ... but also a problem of logistics and politics (Lyster, 1992: 13).

South Africa has an 88% literacy rate according to UNESCO (2011), based on figures supplied by the South African government, but independent researchers agree that the available data is not reliable enough to support this (Aitchison & Harley, 2006: 90; Gustafsson et al., 2010: 21; Posel, 2011). Aitchison & Harley's examinations of the statistics led them to conclude that politically motivated "misleading claims about provision (of adult literacy programmes) have indeed become endemic" (Aitchison & Harley, 2006: 99).

More recently, Gustafsson et al. point out contradictory findings, depending on the criteria one uses to assess literacy, for example, the main method of assessment, highest school grade attainment, seems to suggest an increasing rate of literacy in those aged 15 and above. However, the criterion of self-reported literacy suggests a decline (Gustafsson et al., 2010: 14). The reasons for this are explored but the discrepancy is still considered "puzzling". According to Carstens et al. (2006: 222), adults often inflate their actual school grade attained, "presumably to save face". If this is the case, then should not the highest school grade attainment also be considered self-reported? In addition, Rule (2006: 115) makes the important point that the legacy of apartheid schooling means that school grades achieved are not necessarily reflective of actual literacy skills, and that consequently "many adult learners who have nine years of schooling still require basic education." Posel (2011: 41) supports this.

The school grade attainment method of assessing literacy, however, gives a lower literacy rate of 70% if one uses Grade 7 as a "safe" threshold (Gustafsson et al., 2010: 17), and this is congruent with the view that 30% of South Africans are functionally illiterate and that 40% have limited reading skills (Carstens et al., 2006: 221). In short, the actual literacy rate is difficult to ascertain and unlikely to be nearly as high as the 'official' 88% (Aitchison & Harley, 2006; Gustafsson et al., 2010: 21).

According to currently available statistics, rates of illiteracy vary across population groups, languages groups, and provinces, clearly demonstrating which groups were historically discriminated against and/or marginalised (Gustafsson et al., 2010: 19; Rule, 2006: 116-118). Older adults, women, people with disabilities, and those living in rural areas have the highest rates of illiteracy.

I was particularly interested in the reasons which Gustafsson et al. (2010: 17) put forward as possible explanations for the trend that South African adults seem to be self-reporting lower levels of literacy than previously:

One can speculate that a more competitive and information-driven society is making people downgrade their own sense of being literate as they experience more barriers relating to their levels of literacy ... These patterns confirm that self-reported measures of literacy are highly unreliable. Not only are they likely to be incomparable across countries, they are moreover unstable within a country over time.

This suggests that perhaps, as electronic media are increasingly used, and messages are delivered in more 'international' consumer-oriented styles, less attention is being paid to producing paper-based texts and learning materials specifically tailored for adult new readers, which should remain an essential part of nurturing basic literacy. The lack of appropriate print materials may contribute to difficulties people experience in moving beyond basic functional literacy, and the rapid advances in media technology mean more people at the low-literate end of the spectrum may find it impossible to maintain a sense of being literate.

### **3.3 Print materials**

For the purposes of my study, the term 'print materials' refers to a medium, print, by which documents and/or information are reproduced on paper for distribution to a wider audience. In this context the word 'print' specifically refers to (or is derived from) the technical process of printing by which the materials or documents are produced and reproduced, and not to print in the sense of verbal text or written words which occur in many different media. The paper-based print materials I refer to may include both words/text and pictures/illustrations. 'Printed materials' may be a clearer term to avoid such confusion and this term is sometimes used interchangeably with 'print materials' (for example, see Carstens, 2004b: 473), however, the term 'print materials' is in common use and I will continue to use it (Carstens, 2004b; Morris & Stilwell, 2003). The following types of print materials are relevant to this study: informational or educational pamphlets, leaflets, newsletters, newspapers, magazines, booklets and even books that are aimed at a low-literate adult readership.

#### **Print materials in the digital age**

Technology has changed the way many people use literacy and text to create and share information. For example, information is now accessible in electronic format much more quickly for those who have access to the necessary technology and the skills to use it, although this information is often in small chunks, with a limited lifespan or of dubious reliability. These trends mean that those unable to afford or use expensive technology are increasingly marginalised, perhaps enjoying less access to information than before, if traditional media like print become increasingly overlooked. Zeitlyn (1992: 12) also makes an important point that

“good training should be about activating people” and that non-interactive electronic media such as video often places learners in a passive role, discouraging real engagement. Even in the digital era, locally produced print materials have an important role to play in basic education and extension activities or media campaigns (Carter, 1999; Goldstein, Perlman, & Smith, 2008: 73; Maes et al., 2008: 152).

Comprehensive communication strategies are the ideal, which include consistent messages disseminated through a variety of media, and which take account of all the factors contributing to a problem/topic and the resources which are really available to assist those targeted by the message (Nowak & Siska, 1995: 172; Parrott, Kahl, & Maibach, 1995: 282; PATH/FHI, 2002: 4). Locally, the Soul City health campaigns represent a good example of such a comprehensive approach, combining a televised edutainment series and a daily radio drama with a print media campaign, as well as lobbying (Goldstein et al., 2008; Scheepers et al., 2004). Print materials linked to Soul City included “easy-to-read”, popular print booklets in the 11 official languages, distributed with newspapers countrywide, life skills materials for schools, and “adult education materials” (Goldstein et al., 2008: 72-73). I am not sure whether all aspects of this campaign penetrated most rural areas though, for similar reasons raised by Kiggundu and Castle (2006) as to why other campaigns such as *Lovelife*, and the education efforts of the Treatment Action Campaign (TAC), may have failed to address the needs of many adults in rural areas. These reasons include lack of infrastructure/resources, low rates of adult-literacy, and the focus of the materials on urban youth. This means that the resources which do make it into rural areas tend to be “thinly spread and often inaccessible” (Kiggundu & Castle, 2006: 66).

### **Educational print materials**

The endeavour of producing written materials to communicate with people who cannot read, or who do not read well, may seem to be a contradiction (Land & Buthelezi, 2004: 430; Morris & Stilwell, 2003). This is especially true when the information to be communicated is complex, such as in health education about life threatening communicable diseases such as HIV/AIDS, where misinterpretation risks grave consequences (Mashele, Mckenzie, & Ferrinho, 1991; PATH/FHI, 2002: 1; Robinson, 2005).

However, there are many sound arguments for the use of print media in this context, not least that the availability of appropriate material promotes reading by providing the motivation and the means for people to practise and improve their literacy skills (Land & Buthelezi, 2004; Lyster, 1995: 3; PATH/FHI, 2002: 5). Paper-based print media have advantages in contexts where the

intended audiences have little or no access to electricity and computer equipment, a situation still faced in many rural parts of South Africa and in developing countries around the world (Goldstein et al., 2008: 73; Morris & Stilwell, 2003). Printed materials can be relatively cheap to produce, especially if one foregoes full colour, glossy printing and design by commercial designers which is often unnecessary (MacDonald, 1996). Locally produced materials can address the needs of specific audiences. Once produced, print materials can be used without any special equipment. Well-developed materials can provide excellent support to development workers and professionals during verbal interactions with groups or individuals. Afterwards, the materials can serve as reminders of what was discussed, and may be shared widely amongst peers in the target audience (Bhola 1989, in Bradley, 1995: 38; Hoffmann, 2000: 3; Morris & Stilwell, 2003; PATH/FHI, 2002: 5). The materials also have the potential to break down communication barriers between generations and enable families to discuss sensitive subjects (like HIV/AIDS or teen pregnancy), by acting as ‘conversation starters’ in homes (Goldstein et al., 2008: 79, 83).

Carstens (2004b: 461) sums up the common advantages cited, found particularly in the literature on health education and agricultural extension, under three headings: *production and delivery*, *information transfer*, and *literacy promotion*. She explains these categories as follows:

*Production and delivery*: inexpensive production and distribution, easy storage, repeated use, transfer to others, tailored to specific geographical and linguistic and cultural needs.

*Information transfer*: awareness creation, instruction, persuasion (behaviour change), reinforcement, and accurate and uniform transmission of factual and technical information.

*Literacy promotion*: The enhancement of visual and verbal reading skills.

For me the most compelling of these factors are repeated use and transfer to others. Pamphlets, books and even posters may be taken home and shared with other family members and neighbours, in other words these resources have multiple readership potential. At home, such materials serve to remind people of information they learned, during a workshop or even a clinic consultation, for example. Materials may even assist individuals to act as trainers, passing on information to others (Zeitlyn, 1992: 12).

## **Appropriateness**

The challenge therefore is to create print materials that are appropriate for low-literate readers, and the concept of ‘appropriateness’ is frequently used (for example, see Carstens, 2004b: 469; Hoffmann, 2000: 292; Linney, 1995: 27; Morris & Stilwell, 2003; Sejake, 1993; Zeitlyn, 1992).

This means being clear on what information needs to be communicated to whom, and for what purposes, and this awareness answers the ‘how’, guiding decisions on the format the educational material must take. This should include on-going monitoring of target audience literacy levels and assessments of readability of both verbal text and images (Carstens, 2004b: 469). According to Morris and Stilwell (2003, in Carstens, 2004b: 470), there are over 30 readability formulas for written text. Many of these can be applied ‘manually’, while some are available in software applications. The latter are rather mechanical and may not always reflect the real situation of the difficulty level of a text, especially in relation to the needs of low-literate readers. Staff members of the *Learn with Echo* project have found that the best way to evaluate the readability of articles produced for the adult literacy newspaper supplement is for members of the intended target audience to proofread the material. Not only does this help us to discover small typographical errors, but more importantly, alerts us to language difficulties and instances where something is not explained clearly enough, the layout is difficult to follow, or the meaning of the illustrations is not clear. It is helpful to observe the person reading, or listen to them if they read aloud, and to be able to discuss with them the reasons why a text was difficult for him or her, in order to make the appropriate changes. This supports Carstens’ opinion, drawing on Meade and Smith (1991), that “human judgement and common sense, rather than mechanised analysis, are important when writing and assessing information materials” (Carstens, 2004b: 470).

Sejake, however, critiqued the notion of ‘appropriateness’, suggesting it may inhibit educators and materials developers from providing growth opportunities for low-literate readers, who she felt should be exposed to variety and new forms of texts as well as those deemed ‘appropriate’ (1993: 26). Linney’s ideological concerns are expressed more strongly. For example, he suggests that “outsider designers” who go about developing “appropriate pictorial language” perpetuate neo-colonial attitudes towards “passive” local audiences (1995: 29). I think Sejake’s critique is more relevant to educational situations as a whole but should be approached with caution when developing ‘informational’ materials that may not be mediated. Certainly pre-testing, or the type of ‘proofreading’ activities described above, may assist one to extend the boundaries of what is considered appropriate for readers with low-literacy. This might encourage the provision of more innovative supplementary materials, with the potential to increase interest and promote the development of advanced reading skills.

An awareness of the social construction of meaning can assist in attempts to find ways to decrease the likelihood that texts will be misinterpreted by the intended readers (Robinson, 2005). In situations where the producers and users of educational materials almost never

physically meet there can be “a disjunction between the context of production and the context of reception”, which means that writers and illustrators need to have a mental image of their intended audiences (Kress & van Leeuwen, 2006: 115-116). This is similar to the notion of the “implied reader” of literary reader-response criticism, which differentiates between implied- and “real” readers (Iser, 1974: 34). This means choosing the content, language, and design of materials according to a presupposed “specific encyclopaedic competence” on the part of a “model reader” (Eco, 1979, in Kress & van Leeuwen, 2006: 115). Kress and van Leeuwen (2006: 115) warn against excluding “real authors and real readers” in the following way:

This bracketing out of real authors and real readers carries the risk of forgetting that texts, literary and artistic texts as much as mass media texts, are produced in the context of real social institutions in order to play a very real role in social life – in order to do certain things to or for their readers, and in order to communicate attitudes towards aspects of social life and towards people who participate in them, whether authors or readers are consciously aware of this or not. Producers, if they want to see their work disseminated, must work within more or less rigidly defined values and beliefs of the social institution within which their work is produced and circulated.

For Zeitlyn this means that materials have to be appropriate in terms of the intended audience’s culture, levels of education, their language, as well as the message content and how the information is to be used (Zeitlyn, 1992: 6). These factors may seem obvious, but each one contains complexities that are important to acknowledge and explore (Hilligoss & Howard, 2002: 57). Like any audience, low-literate audiences should not be treated as homogenous. In addition, the issue of primary and secondary target audiences in development communication is an important one, but beyond the scope of this study. For more information on this in a health context, see PATH/FHI (2002: 8-9) and Maibach and Parrott (1995).

PATH/FHI (2002: 11-12) provide a simple yet detailed explanation of principles and methods of audience research to inform the development of health education programmes and materials, favouring qualitative techniques such as interviews, informal meetings and focus group discussions as the most “efficient” use of resources to gain in-depth insights into individuals’ existing knowledge, needs, habits and attitudes. These principles and methods are applicable to developing educational materials on any topic for any audience. “Their ability to read and understand print material” is one among many considerations listed by PATH/FHI (2002: 11).

### **Designing print materials for low-literate readers**

Apart from the readability of verbal language, the visual design and layout of texts guides readers through the reading experience (Hilligoss & Howard, 2002: 3). Fuglesang (1982: 151) suggests that “layout is critical to a viewer’s perception and comprehension of pictures, teaching

aids, printed information materials and films. Layout is a functional tool which should make the reader, or viewer, see what is intended to be seen in the picture.” In my experience, when creating print materials for low literate audiences, design is extremely important, and involves much more than using a large typeface. Typography choices are important and complex, and well beyond the scope of this study. However, it is worth noting that the overall visual design of a document offers important cues, such as where on the page to start reading, and which information is most important, amongst other things.

The amount of ‘white space’ on the page and the balance between verbal text and illustrations are important considerations. This is a complex area of work on its own, based on principles including visual perception, Gestalt, and genre (Fuglesang, 1982: 151; Hilligoss & Howard, 2002; Pettersson, 2009). There are many useful and established guidelines on designing documents specifically for low-literate readers (For example, see ACCU, 1985; Carstens, 2004b; PATH/FHI, 2002).

However, Carstens notes that there is little evidence in most of the literature on the bases for the guidelines suggested for document design for low-literate readers, and she cites Morris and Stillwell’s 2003 study as “an impressive attempt at eliciting research-based guidelines from the available literature” (2004b: 475). She presents a comprehensive table which includes Morris and Stillwell’s findings combined with information from other sources, which presents guidelines for text and visuals including design, which explains how these are likely to assist or affect low-literate readers (Carstens, 2004b: 475-480). This table is a useful resource for anyone entering the field of materials development for adult education, or for those seeking to better understand and improve their existing practice. I will concentrate on that aspect which is most relevant to my study, the use of illustrations.

### **3.4 Illustrations**

Illustrations, which may include visuals of all types, are important in educational materials and may serve many purposes. When the materials are aimed at a low-literate audience the primary role of illustrations is usually to do with making the message clearer or the text easier to read (Blacquiere, 1992: 5; Houts, Doak, Doak, & Loscalzo, 2006; Maes et al., 2008: 152; Velasco 1996, in Morris & Stilwell, 2003).

Placing illustrations throughout the text makes the material more appealing and can help the reader to absorb the information presented. For illiterate and low-literate viewers, illustrations are critical for conveying the message (PATH/FHI, 2002: 67).

Expectations of what illustrations can achieve are high, and thus ‘appropriateness’ applies as much to illustrations as it does to all other aspects of the verbal text content and page design. If one is developing illustrated materials because the target audience is *illiterate*, or *very low* literate, then the assumption seems to be that illustrations can *replace* text to convey meaning. It is useful to return to the theory on image-text relationships, such as Barthes’ notions of polysemy and anchorage discussed earlier in this chapter, to consider whether such assumptions are valid (Kress & van Leeuwen, 2006: 18).

### **The universality hypothesis**

There seems to be a universal understanding of the form, if not the context of maps and diagrams. Pictures also, at the most simple level of understanding, have a universal appeal and can transcend language (Bradley, 1995: 10).

Many people seem to believe that the inclusion of pictures can make a text easier to read, based on the assumption that the ability to understand pictures is an inherent human ability (Hoffmann, 2000: 136), and indeed some researchers have concluded that “most people, in most cultures” do recognise pictures of objects (Kennedy, 1994; Sless, 1981; Levie, 1987; and Schapiro, 1969, in Boling, Eccarius, Smith, & Frick, 2004: 189). However, recognising objects is not the same thing as understanding the *intended* meaning or purpose of the depiction of particular objects or situations (Hoogwegt et al., 2010). This should not be surprising, because there is a big difference between concrete objects and concepts or situations.

Most research into visual literacy with regard to education in developing countries has debunked the universality hypothesis, which is the notion that all people have the ability to understand visuals in the same way, regardless of levels of education, culture and geographic context (Bradley, 1995: 11; Carstens, 2004b: 465). In my experience, educational materials with strong visual components to cater for low-literate audiences are often developed by practitioners who are not familiar with relevant research findings, or the theoretical foundations of visual communication. For example, the creator of a comic book about the life of Nelson Mandela is quoted in a newspaper article as saying that this medium “doesn’t exclude people with low literacy levels” (Mohlala, 2008), and a comic on measles was developed for children because comics are “easy to read, even for less literate children” (Uys & Madlala, 1991). Yet literature demonstrates convincingly that comics are a highly sophisticated genre, the conventions of which often place a variety of heavy cognitive demands on the reader (Blacquiere, 1992: 7; Carstens et al., 2006; Le Roux, 1995; McLoud, 1993).

Rose (2001: 7) describes Western culture as “ocularcentric”, meaning that visual representations have become a central feature of modern life. It is easy to understand why many people take this ocularcentrism for granted, for it has become the globalised water in which the urban, educated, and technologically advantaged swim (Avgerinou, 2009: 28; Hoffmann, 2000: iv; Rose, 2001: 7). In 1993, Sejake (1993: 3) suggested that in rural areas “the only illustrations or popular images people see are for Coca Cola”, and it may be true that in ‘deep’ rural areas with no electricity and under-resourced schools the most common pictures people see are on packaging, on clothes such as T-shirts, or on the occasional shop sign. My own more recent experience in rural areas supports this. Even improved infrastructure does not guarantee an increase in visual media in communities with high unemployment and high rates of illiteracy.

### **The roles of illustrations**

Bradley (1995: 3) asks, “Why use pictures and not words?” supplying many reasons, including the following:

Pictures can be shown by the individual, the community or the state to project an image or an idea which would be difficult to express in any other way in such a direct manner. They can bridge languages and cultures, they can educate the world and inform a friend.

This rather rosy statement contains elements of the universality hypothesis, along with the desire to promote the use of visuals. As an illustrator, I naturally also wish to highlight the many valuable reasons to use visuals, and it is seldom a matter of using either words *or* pictures, but of using both together. Bradley’s useful book *How People use Pictures* (1995) contains, in my opinion, many similarly conflicting ideas and examples, testimony to the challenges of accounting for how visuals work.

### **Specific functions of illustrations**

The reasons for including illustrations are many and varied. Pictures can support, reinforce, and illustrate the meaning of a written text. *Illustrations* are a particular type of picture, with the very name implying that they are there to *show* something or support a message. This is known as the *referential* function, which is “to make explicit the object(s), matter(s) or event(s) under discussion or observation”, and this function is a given, assumed by illustrators (Blacquiere, 1992: 4). Certain types of information or messages may be communicated better when written or spoken information is supplemented with illustrations, for example to explain abstract concepts visually (Hoffmann, 2000). Other functions which are not always used, are identified as the

*expressive* (adopting a stance); the *aesthetic*; the *conative* (motivational), and the *phatic* (to attract and keep attention) functions (Peters 1977, in Blacquiére, 1992: 4).

Illustrations can also extend the meaning of the text by introducing extra information, for example details in a picture may show extra information about a character in a story that adds much to a plot (Arbuckle, 2004: 446). This is particularly true of the better children's picturebooks (as opposed to "books with illustrations") produced during the last few decades, where narratives are composed largely of mutually dependant relationships between words and pictures (Arizpe & Styles, 2003: 22). This characteristic is not limited to children's literature although that is where it tends to appear in its purest form. Arizpe and Styles (2003: 23) list some of the attempts made to theorise the complexities of how words and pictures interrelate, including Mitchell (1994), Nodelman (1988), Kress and Van Leeuwen (1996), Kummerling-Meibauer (1999), Sipe (1998) Nikolajeva and Scott (2000) and Lewis (2001), among others. Arizpe and Styles themselves acknowledge the influences of Iser (1980) and Rosenblatt (1978) for the notion of the "gap in the text which has to be filled by the reader, particularly pronounced, of course, in picturebooks" (Arizpe & Styles, 2003: 20). This gap is seen to result in a complex reading process, the "hermeneutic circle", where the reader starts with either the verbal or visual element, which in turn builds expectations about the other element, leading to a moving between the two elements towards an understanding the whole 'text' (Arizpe & Styles, 2003: 21-22). Such a process is also particularly evident in the genre of comics, where "words and pictures are like partners in a dance and each one takes turns leading" (McCloud, 1993: 156).

<sup>1</sup>Illustrations in print materials may attract readers by capturing their attention – the phatic function mentioned above. This function is of particular value when the audience may be reluctant readers, or readers who may be intimidated or put off by expanses of unbroken text, such as readers with limited education. Research into rural farmers' use of agricultural extension materials in Uganda and Ghana reveals that participants "showed clear preferences for design incorporating plenty of clear illustrations with little text" (Carter, 1999: 65). This finding has been confirmed by recent research conducted into the use of print materials by small scale farmers in KwaZulu-Natal, who made the following comments: "Pictures are good", "It is easy to understand the pictures", and "When I see the picture I become interested in the story and read

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<sup>1</sup> The following two paragraphs are extracted from my article published in Language Matters Volume 35 (2) 2006, pages 445 – 458, with minor updates added.

about it” (Stefano, 2004: 60). Thus it seems clear that illustrations provide motivation, attract attention, create anticipation and maintain interest (Blacquiere, 1992: 3).

In addition to supplying the motivation to read, illustrations can help readers to become involved in material, if familiar objects and situations that may elicit emotion in the reader are depicted. In many educational materials such as those that encourage people to prevent the spread of HIV/AIDS, it is desirable to “touch the heart as well as the mind of the audience” (PATH/FHI, 2002: 37). Pictures have great potential to do this, by adding a visual element that strengthens the affective appeal of a text, or by supplementing information through the illustration of a real-life situation. However, emotional responses to illustrations may not always be positive, and negative perceptions of illustrations can adversely affect readers’ opinions of the whole message (de Lange, 1999; Houts et al., 2006).

Illustrations also play a reinforcement role, in that they may do what body language, tone of voice, and facial expressions do in conversation, by adding extra-linguistic features of communication (Blacquiere, 1992: 3). Similarly, illustrations have the potential to contextualise a text, encouraging inference (Blacquiere, 1992: 3; MacDonald, 1996: 71). Learning may be enhanced, including readers’ capacities to remember what they have read (recall) by presenting information in more than one way (Blacquiere, 1992: 3). At best, “we can learn in the presence of compelling objects that engage our senses, allow for many kinds of cognition, connect to many facets of life and sustain our attention. We look and we see meaning upon meaning, all more or less immediately accessible” (Perkins 1994, in Arizpe & Styles, 2004: 186).

Of course, the extent to which illustrations are able to fulfil these functions is dependent on many factors, not least the quality of the illustrations themselves, but also the variations of contexts and viewers. Poor quality or inappropriate illustrations may have a negative effect and actually demotivate readers (Peeck 1987, in Boling et al., 2004: 188).

### **Illustrations and low-literate audiences**

Although illustrations are usually included in educational materials for low-literate audiences, studies over decades have shown that the likelihood of misinterpretation of such visuals is high. This has been considered to be a problem particularly in developing countries and rural areas, although studies conducted with low-literate people in developed nations have shown similar findings, which are also often related to cultural diversity as well as levels of education and literacy (Ausburn & Ausburn, 1994; Carstens et al., 2006; Doak, Doak, Friedell, & Meade, 1998; Dowse, 2004; Hoogwegt et al., 2010; Maes et al., 2008; McKeon, 1996). According to Linney

(1995: 20), “the literature on visual literacy is full of examples of pictures that have been misunderstood by non-literate people. Difficulties arise because people do not understand perspective and pictorial conventions relating to scale or size, movement and so on.”

The high rate of misinterpretation of illustrations among low-literate people in developing communities is attributed to lack of exposure to illustrated educational material, and visuals in general, where schools do not have resources such as textbooks and few families read at home (Aitchison, Keyser, Land, & Lyster, 2005: 10; Linney, 1995: 19; McBean, 1988: 393). This is in contrast to the situation of children from ‘literate’ cultures and in ‘wealthy’ countries, who see so many pictures in storybooks and elsewhere as they grow up that they develop complex visual literacy skills naturally (Fuglesang, 1973: 71; Messaris, 1994). It is suggested that people who see very few pictures may not learn to decode the pictorial conventions often used in illustrations, and thus there is a greater likelihood of misinterpretation of the few pictures they do see (Linney, 1995: 20; McBean, 1989: 2). Fuglesang called for “systematic and better controlled research” while predicting that pictorial illiteracy and similar phenomena would disappear as development proceeded, an optimistic view which advocated “an intermediate” approach so that the issue might not be overemphasized.

The findings of different studies have been contradictory though, and as discussed earlier in this chapter, often lack firm theoretical foundations (Hoffmann, 2000: 136). In the more recent literature, which I discuss further on, attention has indeed shifted away from what people can and can’t understand in illustrations towards exploring theories which explain why some illustrations are more difficult to interpret than others.

### **Difficulties with pictorial interpretation in low-literate communities**

In Lyster’s experience, many of the “commonsense notions of what neo-literate adults can perceive” are fallacies (1995: 38). These may have arisen out of reliable (or unreliable) early research, some of which is discussed below, as well as anecdotal evidence, but of course such rules risk becoming invalid if they are mechanically applied over the years and in differing contexts without investigation or critique.

Many readers may not pay careful attention to the illustrations in educational materials, possibly because they do not expect visuals to be about anything important. Factors listed as “ethnic group, gender, dress, social customs, acquaintance with symbols, and architectural and landscape settings” may not have prepared them to find information in illustrations (Carstens, 2004b: 474). This is in agreement with the findings of the landmark 1976 UNICEF study, *Communicating*

*with Pictures in Nepal* which found that “villagers” did not expect to “receive ideas from pictures and often read pictures very literally” (Linney, 1995: 25). In addition, people may seem to ‘ignore’ illustrations (or details in illustrations) which they do not understand, and this is related to the “active and selective” functioning of human perception (Fuglesang, 1982: 145).

Once viewers have turned their attention to an illustration, they are faced with “pictorial language” which according to Fuglesang (1982: 154) “consists of a series of cues which people must know in order to be able to perceive and interpret correctly the content or message of a picture.”

A basic problem in pictorial perception is that a three dimensional reality has to be expressed in two-dimensions. The fourth dimension, the time factor, further complicates the matter, entering the picture when the expression of movement is depicted. Depth, the third dimension, is expressed by various cues. One is the shade-cue. Shade-cues can be reproduced in different ways, ranging from line hatching to photographic tones. They provide the knowledgeable reader with the cue to depth in the picture (Fuglesang, 1982: 154-155).

Messaris (1994: 41-60) also presents a thorough and detailed exploration of the problems of representation using two-dimensional, still images, including a list of discrepancies between images and the things they represent.

The following list consists of those common pictorial cues/conventions that may be most open to misinterpretation by low-literate audiences.

### **Perspective, and the depiction of pictorial depth**

One of the most common difficulties attributed to low-literate viewers is the inability to correctly interpret the depiction of depth in the two-dimensional picture-plane, through the use of perspective (Ausburn & Ausburn, 1994: 446; Carstens, 2004b: 474; Fuglesang, 1982: 155-156; Hoffmann, 2000: 139; McBean, 1989: 3; Hudson 1960, in Messaris, 1994: 65; PATH/FHI, 2002: 2; Zeitlyn, 1992: 54). Other means of depicting depth which have been found to cause difficulties include overlapping or ‘occluded’ objects or parts of objects (Lyster, 1995: 37), also known as “superimposition” (Fuglesang, 1982: 156) and relative size differences of near and far objects (Fuglesang, 1982: 155; PATH/FHI, 2002: 2). This relates to the next point, that of difficulties with differentiating between foreground and background.

### **Background detail**

People may have difficulty in differentiating between foreground and background in illustrations, and detail in the background of illustrations may interfere with interpretation if

there is too much unimportant detail that is unrelated to the intended meaning of the illustration (Holmes 1963, in Linney, 1995: 22; PATH/FHI, 2002: 2). Unnecessary detail anywhere in the picture may also cause problems (Carstens, 2004b: 474). However, paring a line drawing down to minimal details, for example, may have a negative effect which prevents people from being able to identify the objects/scene depicted (Fuglesang, 1982: 165).

### **Sequencing of picture frames**

Both Holmes (1963) in Kenya, and UNICEF (1976) in Nepal found that people in undeveloped communities did not understand sequences in pictures (Linney, 1995: 23-25). Other findings support this, some of them more recent (Carstens, 2004b: 468; Hoffmann, 2000: 97; McBean, 1989: 3; PATH/FHI, 2002: 2). This would include ‘reading’ the frames in the intended order, and relating the contents of different frames to each other in the intended manner. McCloud (1993: 70-72) discusses different categories of panel-to-panel transitions and relationships.

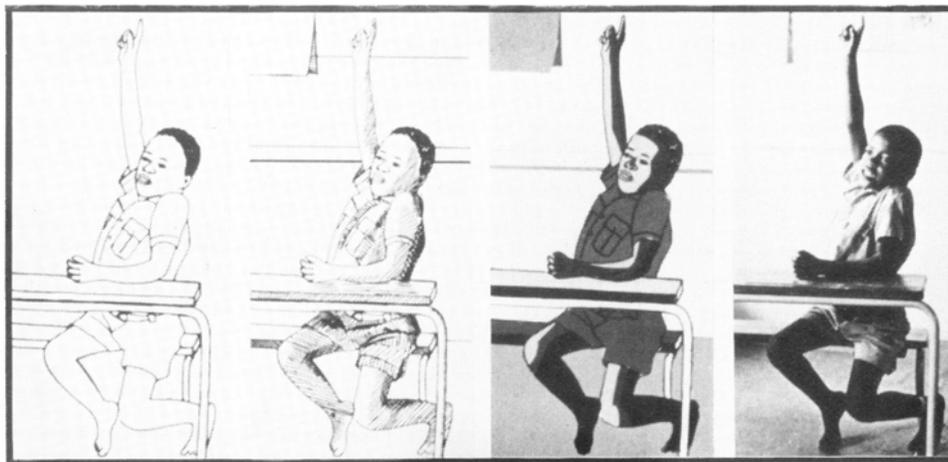
### **Object recognition**

While some have suggested that “most people, in most cultures, recognise pictures of things, or the illustration content” (Boling et al., 2004: 189), much of this research does not seem to specifically take account of low-literacy levels. Others have found that people have more trouble recognising depictions of unfamiliar objects than they do with recognising familiar ones (Carstens et al., 2006: 225; Holmes 1963, in Linney, 1995: 24), and these difficulties have been found to apply to depictions of animals, plants and “non-human” subjects (Cook 1984, in Linney, 1995: 26). Gaede (2010) reports similar findings on how people with low literacy had difficulty with recognising objects in nutrition education materials. Object recognition also does not equate with being able to interpret the intended meaning of the objects depicted (Boling et al., 2004: 189; Bruski, 2011: 88; Carstens et al., 2006: 222).

### **Artistic style**

Certain artistic styles may hinder interpretation (Carstens, 2004b: 474). Simple un-shaded line drawings were found to be more difficult to interpret than photographs (Fuglesang, 1973; Linney, 1995: 24-25). Fuglesang (1982: 154-155) makes the point that different artistic styles/techniques suggest three dimensions differently, with some bearing a closer surface resemblance to three-dimensional reality than others, which are less natural in appearance. Ausburn and Ausburn (1983: 445) go as far as to state that styles are conventional, like symbols, which are discussed separately below. Fuglesang’s own research conducted in Zambia in 1969

compared four styles: line drawings, silhouettes (outlines ‘coloured in’ with flat black fill), “block-outs” (photographs with all the background removed), and photographs (with background left in). It was found that the block-outs were the easiest to interpret (Fuglesang, 1982: 170). A similar study by UNICEF/National Development Service (NDS) in Nepal in 1975 increased the number of styles tested to six, adding a photograph-like shaded drawing, and a very stylized line drawing. This time the shaded drawing was the most recognised, followed by the block-out photograph. Other studies revealed similar results (Fuglesang, 1982: 171; McBean, 1989: 2). These findings suggest that shading or tone is an important pictorial cue to create a stronger resemblance to reality and thus aid pictorial interpretation.



**Figure 19. Ways of depicting depth (Fuglesang, 1982: 154)**

This is supported by Gaede’s (2010) more recent findings, that research participants’ preference was for limited shading of line drawings, and that more abstract styles of depiction were disliked. This also suggests that artistic style is likely to have an impact on viewers’ affective response to illustrated texts, and may influence their engagement in other ways.

### **Symbols and other graphical devices**

People with low literacy levels often do not recognise or understand the meanings of symbols, such as the skull and cross bones symbolising danger or death (Bruski, 2011; Maes et al., 2008: 164; Zeitlyn, 1992: 32). This is because symbols are conventional, that is, their appearance is often arbitrary and often not obviously related to that which is symbolised, thus their meanings have to be learned (Ausburn & Ausburn, 1994; Carstens et al., 2006: 228; Zeitlyn, 1992: 30). Many symbols also have different meanings in different cultures (PATH/FHI, 2002: 2; Zeitlyn,

1992: 32). These issues relate back to the key semiotic concepts, of sign types and how meaning exists in a triangular relationship between the sign, the objects and the interpretant, as discussed in the previous chapter.

Certain symbols may be less problematic than others, for example Carstens et al. (2006: 226, 228) found the cross to be “fairly successful in expressing prohibition”, which they attribute to its “analogical residue”, that is some appearance to the reality of something being barred or literally crossed off. This has been referred to as “natural visual meaning” (Maes et al., 2008: 156).

Often illustrations include visual elements that attempt to represent things that cannot be seen or shown in a static image, such as speech, other sounds, thought, movements and directions of movement. Such elements have been referred to as “graphical devices” (Boling et al., 2004: 187) and “abstract visual elements” (Hoogwegt et al., 2010: 188). Examples of these devices include:

- lines around objects to show movement or noise
- arrows showing direction
- dotted lines showing what a person in the picture is looking at
- speech bubbles containing text, and thought ‘bubbles’ which may contain text or images
- symbols of mood, for example a heart floating near a person who is in love or happy (see Figure 13), or a rain cloud hovering over the head of an unhappy person.

Like symbols, such devices are culture-specific and depend on the viewer being familiar with their use, or the genre of comics, for example (PATH/FHI, 2002: 2; Zeitlyn, 1992: 44). Such devices are often misinterpreted or simply ignored (Boling et al., 2004: 187; Carstens et al., 2006: 229). This is not always the case, however. For example, the illustrations from a New Readers Publishers book, *Woza Friday* by Wendy Anneck, incorporated several graphical devices which “beginner” adult readers had no difficulty interpreting, according to Lyster (1995: 38). One of these illustrations, Figure 20, below, includes a heart symbol followed by a wavy line, showing that the main character’s “heart is light” because it is Friday.



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**Figure 20. Illustration from *Woza Friday* (Annecke, 1991)**

Nevertheless, the inclusion of several different graphical elements (such as the mixing of analogical and symbolic depictions) in a complex visual leads to a high cognitive load which is likely to cause problems for low-literate viewers (Carstens et al., 2006: 228-229; Dowse, 2010: 167; Maes et al., 2008).

The traditional guidelines for creating illustrations for use in materials aimed at low-literate audiences include several of the factors listed above, in my experience. They resulted in the emergence of a “development illustration” style which McBean (1989: 3) describes as “simplistic shaded drawings of familiar objects with superfluous background detail omitted”.

While some suggest that one can avoid pitfalls by being aware of likely sources of misinterpretation, others are less definite in their conclusions, emphasizing the importance of knowing one’s local intended audience, and involving audience representatives in developing and/or evaluating the illustrations before final production. Of course it is possible to do both (see, for example, PATH/FHI, 2002: 75).

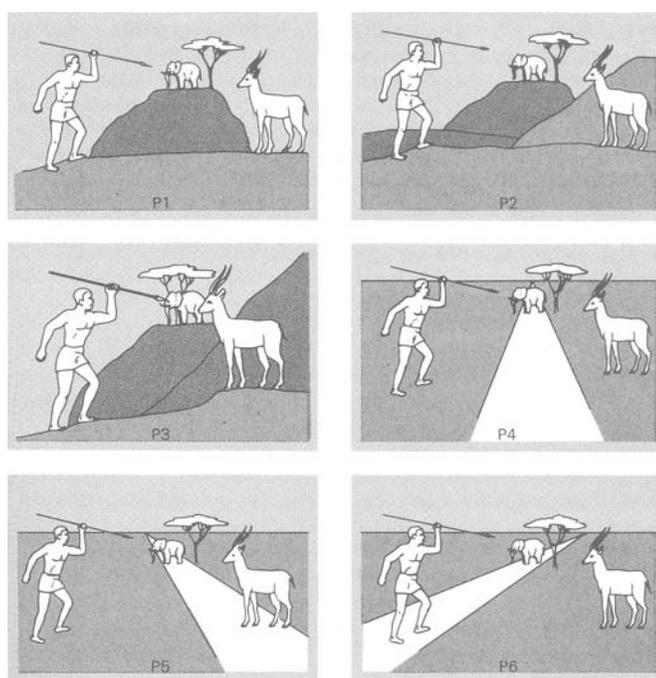
I will now focus on research findings, starting with early, seminal studies.

### **Findings from early research**

There are many summaries of early research efforts into the ‘visual literacy’ of adults in developing countries, for example Fuglesang (1973, 1982), Goldsmith (1984), Messaris (1994), Linney (1995), Hoffman (2000), most of which yielded similar results, according to Linney (1995: 23), and led to the list of guidelines mentioned above. I do not wish to go into detail on

each of the major studies here, because the findings of many of these are cited in the section immediately above. However, the following raise issues of particular relevance to my study:

The 1960 ‘Hudson test’ is a rather infamous South African example of an attempt to compare pictorial depth perception between literate and illiterate populations (see Fuglesang, 1982: 165-166; Hoffmann, 2000: 136; Linney, 1995:24-25; Messaris, 1994: 66). This early study was published in the *Journal of Social Psychology* (Issue 52, 1960: 183-208), in an article titled “Pictorial Depth Perception in African Groups” (in Messaris, 1994: 65). A set of six pictures with the same subject matter was used, consisting of a hunter aiming a spear at a buck, with an elephant standing under a tree in the background. These are seen in Figure 14.



**Figure 21. The Hudson test (in Messaris, 1994: 65)**

The participants in Hudson’s study were black and white, with different levels of education among both groups. Different compositions of the same subject matter used different combinations of depth cues: occlusion, relative size, linear perspective, and relative height of placement in the visual field. Occlusion is when objects in the picture overlap/are obscured because one is in front of the other. Hudson found that many people did not understand pictorial depth conventions, and that schooling was the common factor amongst black and white viewers who could comprehend the depiction of three dimensions (Linney, 1995: 24). Occlusion was found to be the most effective way of depicting depth, and relative size was the least effective (Messaris, 1994: 65-66).

Others replicated Hudson's original study, with hardly different results when using the same set of pictures. However, similar studies using different pictures and test procedures were "consistently less likely to evoke such two-dimensional responses", such as Cook's study in 1981 (Messaris, 1994: 66). This suggests that people's inability to comprehend the depth cues in the Hudson Test was as much (or more) to do with the limitations of the pictures as it was to do with their lack of skill or abilities to interpret depth. Many of the 'repeat' studies adapted Hudson's pictures to include more familiar objects, animals and local styles of dress. Messaris explores the different studies in great detail, comparing research methods of the different studies, and his most interesting conclusion, for the purposes of my research, is that "viewers find it easier to integrate the elements of a picture into a three dimensional percept if they already have a good idea of what the represented scene should look like" (Messaris, 1994: 69). This relates to theories of perception, which I have discussed previously, which suggest that we see according to our experience (Arnheim, 1970: 90).

Another interesting example of a situation where a picture was misunderstood is the 1966 report about a woman in rural Africa who could not recognise anything in a black and white photograph of her own son (Messaris, 1994: 60). It is argued that such anecdotes should be accepted alongside more systematic data, especially when they come from trained observers, for often they reveal unexpected information which contributes towards a more complete understanding of the issue of pictorial literacy in communities starved of visual and/or print media. In the case mentioned above, the woman was quickly able to identify the face in the picture after a quick tutorial about what the picture was.

For many of the inexperienced viewers in these accounts, their first encounters with the pictures they were shown were also their first encounters with paper. As Herskovits himself pointed out, this fact in itself might explain their initial puzzlement regarding what they were being shown (Messaris, 1994: 60-61).

On a similar note, often illustrations used in such research may have been of poor quality (badly drawn, and/or poorly reproduced) and often chosen for their deliberately misleading or difficult pictorial elements (Hoffmann, 2000: 139-142; Linney, 1995: 23; McBean, 1989: 4-5). Results of such studies may be more reflective of the shortcomings of the illustrations than indicative of 'pictorial illiteracy' on the part of the participants. Hoffman (2000: 140; Linney, 1995: 23) sums up the issue by asserting that "Much confusion has resulted from people being shown pictures of things that they cannot know":

Here, again, the trivial realisation that one can only perceive what one knows is ignored and responsibility for the pre-programmed failure of the attempt at communication is shifted, as so often, from the communicator onto the recipient (Hoffmann, 2000: 140-141).

Studies which compared how people interpreted different artistic styles of illustration are of relevance because I included this aspect in my research. The best known of these are those of Fuglesang (1973), and Haaland et al. (1976), as well as similar studies by Fonseka in 1960; Holmes in 1962; Cook in 1981; Haaland in 1986, and Gurgen and Simenyimana in 1987 (McBean, 1989: 2). However, an unpublished study by Sejake (1993) is of particular interest to me because it was conducted locally in the Pietermaritzburg area, where half of my interviews were conducted.

Titled *Exploring the Appropriateness of three central visual literacy conventions for illiterate people in the Pietermaritzburg area*, Sejake's study compared the use of line drawings, shaded line drawings, and photographs. Interestingly, "people in the target group were often unable to spot the differences between a shaded illustration, a line drawing and a photo with the same content. Some said "There are no differences", or, simply commenting on content, "This one has nice hair."'" (Sejake, 1993: 24) Sejake also compared response to illustrations with and without background details, which I have also done.

Overall, it was found that restricting shading (particularly on faces); the use of photographs, and a careful or limited use of background detail were "appropriate" for illiterate people (Sejake, 1993: 27). Criteria were identified for "visual perception and preference in illiterate people", namely clarity and context (including viewers' "own experiences", and "self-relevance") (1993: 25). Correct interpretations of illustrations were consistently more likely to be made by those with more years of formal schooling than by those with less formal schooling, and it was observed that "people bring their **experiences** to the task of interpreting an illustration. People in the target group may be able to identify figures in an illustration, but have little idea of the meaning if it is in a context outside their experience" (1993: 24). The need to distinguish between urban and rural dwellers is highlighted, though she cautions not to assume 'visual literacy' in urban people (Sejake, 1993: 27).

Such research methods, which offer participants the opportunity to compare different depictions of the same thing, seem more positive than methods which could be seen as setting up participants to misinterpret illustrations.

### **More recent studies**

Using a Peircian semiotic framework similar to that used in my analysis, Bruski (2011) found that illustrations are especially useful in learning contexts involving low-literate adults and second-language learners, and that contextualised iconic images are the most reliable. The ability

to interpret visuals was widely variable among research participants, who otherwise seemed to share very similar backgrounds and levels of education. Bruski recommends further research on this. In my opinion this finding is explained by the notion that visuals are generally more widely open to interpretation than language/written text (Barthes, 1977; Penn, 2000; Rose, 2001). This study took place in the United States, with adult refugees from Somalia, but despite the different context, the issues explored are highly relevant to my research, and the theoretical stance affirms my approach. Anything that adds new evidence to the mostly dated body of research is highly valued.

On the local front, South African research into the interpretation of illustrations over the past two decades can be categorised into several areas of work/contexts: Adult Basic Education and Training (ABET), education more generally, agricultural extension, and health. I will discuss the first three below, and the last, health, in the next section on health education and communication.

### **Visual literacy and ABET**

Basel's descriptive study of the use of pictures to aid English second language learning in an adult basic education setting found that adults do not automatically attain the skills to correctly interpret all types of visual material (Basel, 1995). She identifies the following factors which influence the attainment of "visual literacy", including: cognitive ability; learning strategies; environment; culture; and levels of exposure to two-dimensional images (Basel, 1995: 85). She suggests that pictures aid learners of a second language to speak the language, by providing something to talk about as a class activity. She sees this language "production" role as more valuable than that of supporting second language text comprehension, providing "both content and context without dictating the learners' linguistic output" (Basel, 1995: 86). She explains that misinterpretation of pictures due to the "cultural relativity of visual codes" can lead to difficulties with understanding a text:

Once a picture has been perceived from a particular viewpoint viewers find it difficult to 'read' it in another way, thus what teachers often regard as linguistic errors are in fact the result of the readers' contrary perceptions of pictures (1995: 87)

Basel concludes that "simple representational pictures" are more appropriate and effective than "dense realistic images and abstract images" in the ABET second language learning context. This study is of interest, although I believe Basel could have considered some of the definitions and terminology she uses more carefully. For example, many would argue that "representational" and "realistic" are similar in meaning (de Lange, 1999: 28).

Like Basel, Bouwer (2000) considers visual perception with regard to low-literate adults learning English as a second language. She developed, facilitated, and evaluated a visual literacy course for an adult literacy group. Her findings suggest that visual literacy should be given far more attention in the ABET context, and that it cannot be taught in a short three-month course like the one she conducted. For Bouwer, pictures have “unlimited potential when used communicatively” (2000: 120). She advocates challenging adult learners to acquire greater levels of visual literacy through the use of complex and interesting images rather than “overly simple self-explanatory ones” (2000:122).

The *Research Report on the New Readers Project* (Lyster, 1995) documents research into an ongoing innovative publishing project now known as New Readers Publishers, which publishes books for newly literate adults in all of the 11 official languages of South Africa. The report offers detailed insights based on the development and pre-testing of illustrations for supplementary readers. For example, learner readers may have difficulty in describing why they find an illustration problematic, which may mislead researchers (Lyster, 1995: 37). The boundaries between discussing form and content are sometimes blurred, and comments seemingly about the style of a depiction on discussion may turn out to be more about the content of a depiction. Pre-testing can be as much about readers’ preferences as their understanding (Lyster, 1995: 40). Most significantly, as cited previously in this chapter, it was discovered that some of the “commonsense notions of what neo-literate adults can perceive” did not hold true for some of the more stylized illustrations, which, although they did not conform to the ‘traditional’ development communication illustrating style, were understood by readers (Lyster, 1995: 38).

### **Illustrations in school textbooks**

Griffiths-Meyers (1997) investigated how visual imagery in educational textbooks impacted on black primary school children from an informal settlement in Cape Town. She attributed the learning difficulties experienced by these children in part to their lack of exposure to pictorial print materials, but also to the inadequacy of the illustrations. She found that publishers neglect the development of the visual aspect of educational texts, and that many illustrators are unaware of pictorial literacy issues, often rendering printed learning materials ineffective.

Although his subjects were also school pupils, from Grade 6 to Grade 11, De Lange’s (1999) thorough investigation of the learning effect of culturally modified pictures in printed educational media in developing countries has relevance. He found that pictures including “socio-cultural” variables of viewers in “developing communities” improve the appeal of

learning material but do not necessarily improve comprehension of intended messages. Examples of socio-cultural variables include details such as local styles of clothing, for example. On the other hand, inappropriate cultural conventions in text and pictures can actively impede communication.

Moore (2001) offers a critique of the “fragmented”, “clumsy and largely unusable” role of visual literacy as it appeared in Curriculum 2005 (2001: 95), and draws on Kress, amongst others, to advocate a more holistic, synthesized approach in order to maximise the potential offered by the visual mode across learning areas. Like Griffiths-Meyers, she also criticises the educational publishing industry, “deeply dependent on visuals for the sale and reception of its textbooks” for privileging the verbal over the visual (2001: 95). She advocates the training of teachers and illustrators in visual literacy; further research into visual literacy issues; building terminology for the visual mode; and curricular change. Although Moore was considering a schooling curriculum, her findings are easily applicable to adult education and have much in common with those of Bouwer (2000), above.

### **Agricultural extension**

Morris and Stilwell (2003) reviewed research on print agricultural information materials (PAIMS) in order to produce guidelines for the production of effective and readable resources for rural and low-literate farmers. Their discussion of the use of “visuals” (Pictures, photos, graphs, and diagrams) is extremely brief but flags that there are both benefits and pitfalls to the use of illustrations with very few details included. This remains “an impressive attempt at eliciting research based guidelines from the available literature” (Carstens, 2004b: 475) for the development and design of print materials for low literate, rural audiences.

Complementing the above study, Stefano (2004) conducted research into printed information access and preferences among small-scale farmers in Umbumbulu, KwaZulu-Natal, which included an attempt to gain insight into how the farmers relate to pictures. The inclusion of pictures in extension material was found to be beneficial for motivating reading, and to aid understanding and recall; however, pictures without text or a spoken explanation were often hard to interpret correctly. This finding relates to the concept of anchorage (Barthes, 1977). Respondents expressed a liking for familiar, recognisable content which they could relate to easily, and preferred series of sequential drawings explaining concepts in steps, to single illustrations. This latter finding is interesting considering that sequences have also been found to be often misinterpreted by low-literate audiences, as discussed previously.

More recently, Rother (2008) discusses the labelling of potentially harmful pesticides, which may be handled and used by low-literate farm workers. She found that pictograms are often used in an attempt to communicate risk factors and instructions to such audiences, and that the misinterpretation rates among farm workers were very high, reflecting farm workers' "social and cultural frames of reference rather than the technically intended risk information." (Rother, 2008: 419). Similar studies conducted in the UK and Australia, which did not focus on literacy levels of users of pesticides, also found that pictograms depicting safety information were often poorly understood, thus limiting their actual effectiveness (Davies, Haines, Norris, & Wilson, 1998; Wilkinson, Cary, Barr, & Reynolds, 1997). Therefore the degree of comprehensibility of such illustrations may be as much linked to the genre of pictograms and their quality of execution as to the literacy levels, education and social context of audiences. A common thread is that testing and audience involvement in the development of illustrated resources are recommended, along with the recognition of the limitations of pictures as communicative tools. These studies relate to the extensive research of Dowse et al (2010; 2004, 2005; 2003) in the field of health, specifically to do with pictorial medication instructions, which I discuss in the next section.

### **3.5 Health education**

#### **Health literacy – another changing construct**

The field of healthcare has not escaped the blurring of interdisciplinary boundaries which I have discussed with regard to research into communication, and the contested notion of visual literacy. According to the World Health Organisation (World Health Organisation, 2010),

Health literacy has been defined as the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. Health literacy means more than being able to read pamphlets and successfully make appointments. By improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment.

This definition is rather different from earlier, more limited understandings of health literacy, a term coined by Scott Simmonds in 1974, when he presented an argument for the inclusion of 'health' as a school subject (Ratzan, 2001, in Tones, 2002: 287). Over the years health literacy came to mean the skills people needed to use health systems effectively, including the capacity to understand instructions on medication packaging, appointment slips and "other essential health-related materials". More recently, health literacy has been described as "a set of skills combining knowledge in health issues, understanding of socio-cultural constraints surrounding health practices, and individual and community agency to bring about positive changes in health conditions" (Scheepers et al., 2004).

Tones (2002: 287) suggests the earlier, narrower concept of health literacy had the ultimate goal of achieving “patient *compliance*”, which he contrasts ironically with the use of the term ‘empowerment’ in the WHO’s current definition, above, which cites Nutbeam (2000) and Kickbush (1998) as major sources (World Health Organisation, 2010). He criticises the “expanded definitions” put forward by Kickbush (2001) and Nutbeam (2000) for, in their own words, “some repackaging of established ideas concerning the relationship between education and empowerment” (Nutbeam, 2000, in Tones, 2002: 289). Tones argues that it is unclear “how this particular compendium of constructs improves on the many well-researched models that describe empowered health-related decision making”, and warns against “putting new wine in old bottles” (2002: 289).

Tones does not seem to have a problem with considering the contextual factors influencing health at the individual and societal levels, but rather is concerned about attempts to redefine and complicate a functioning, accepted construct without good reason, and especially in the light of current tendencies to overuse the term ‘literacy’. I agree with him, that it is possible to draw on the “considerable, well-developed and theoretically sound literature” in public health and the social sciences without “translating limited, but clearly defined concepts into much broader, semantically unrelated constructs” (2002: 289). Tones’ critique is succinct but detailed, and food for thought for those of us negotiating murky interdisciplinary waters, perhaps each keen to name and define our own small islands.

Returning to ‘health literacy’, narrower definitions of health literacy suit the concerns of this study better, placing practical emphases on education and the literacy skills needed to read and understand health messages. However, the broader social definitions are useful for framing large national health communications projects like Soul City, which was truly comprehensive, employing radio, television and print media as well as other advocacy measures such as lobbying government (Scheepers et al., 2004). There are other examples of studies that demonstrate the importance of understanding health in the context of other factors. For example, Bogale et al. (2009) linked low-literacy levels to lack of knowledge of HIV/AIDS among older rural women in Ethiopia, which in turn needed to be examined in the light of social history and cultural practices.

## **Health communication in South Africa**

The 2009 National Communication Survey on HIV/AIDS (NCS) assessed the impact of 11 South African HIV/AIDS communication programmes, including Soul City, and although the

available report summary does not seem to deal specifically with illustrated material or with visual communication, certain of the findings are highly relevant to my research (South Africa Government Online, 2010).

While 90% of South Africans were reached by at least one of the 11 programmes studied, older audiences were less likely to be reached than younger audiences. While up to 67.3% of people read newspapers, only 18.4% of people use the internet, yet in my opinion an 'internet' style of information design is becoming more commonly used in other non-electronic media, almost as a fashion trend, and this may impact on readability for non-internet users.

Knowledge of HIV/AIDS prevention and treatment is high (87%) and has shown significant improvement since 2006. However, 50% of people lack the correct knowledge about the treatability of TB combined with HIV/AIDS infection. People who have been exposed to communication programmes are more likely to be tested for HIV, and are more likely to discuss this with their partners.

The study also reveals information about behaviour and social attitudes that have a negative impact on health, such as having multiple sexual partners. Access to health information does not necessarily translate directly into behaviour change and lower rates of HIV infection. The most significant recommendation, in relation to my study, is that more effort should be made to reach older people, and especially men. I would like to see more work done on evaluating the effectiveness of particular methods used by the different programmes and media, whereas this survey looks at the reach of programmes on the macro level, and then at the information people have, and seemingly less at *how* the information is transmitted.

## **Research into health communication and low-literacy**

Much of the research done into the impact of communication or education strategies that employ pictorial means to convey health information has been done in the USA, and while it is interesting to consider the findings of these studies, it is essential to bear the influence of contextual differences in mind (de Lange, 1999: 2). Such differences might include definitions and rates of low literacy, and the type of access to information and health resources that ordinary people have in developed countries, compared to average South Africans in both rural and urban areas.

As mentioned in the introduction of this chapter, the EPIDASA and HACALARA projects have helped to address this gap significantly. EPIDASA (2006) aimed to improve the effectiveness of

educational print materials on HIV/AIDS in South Africa, by considering aspects of design as well as target audiences' needs and preferences, amongst other themes. The HACALARA project investigated "the use of spoken communication combined with printed visual and verbal information as a strategy to bring about effective comprehension and persuasion in the context of HIV/AIDS intervention programmes" (HACALARA, 2010). Based in Limpopo province, this project assessed the effectiveness of rhetorical communication strategies (for example, the loveLife mass media campaign) which aim to inspire peer-group discussions among the youth rather than delivering information explicitly. In addition, experiments were conducted to assess alternative strategies. I will refer to some of the findings of the EPIDASA project as these are most relevant to my research.

Reviews of the literature on health communication and medication instructions suggest that illustrations (including pictograms) are beneficial, especially to low-literate patients, with the potential to focus attention, support understanding, aid recall of treatment details, and thus encourage adherence to treatment. However, sometimes illustrations can confuse patients and have the opposite of the desired effects (Houts et al., 2006; Katz, Kripalani, & Weiss, 2006). The following guidelines are offered by Houts et al. (2006) to improve practice by health educators:

Educators should: (1) ask "how can I use pictures to support key points?", (2) minimise distracting details in pictures, (3) use simple language in conjunction with pictures, (4) closely link pictures to text and/or captions, (5) include people from the intended audience in designing pictures, (6) have health professionals plan the pictures, not artists, and (7) evaluate pictures effects by comparing responses to materials with and without pictures (Houts et al., 2006: 173).

These guidelines are not very different from those offered to anyone preparing materials for educational purposes and low-literate audiences. The importance of combining the use of pictures with written or oral instructions is emphasised, in line with the recommendations from other sources (See Katz et al., 2006). Point (7) above, comparison, has been found to be a useful approach to evaluating illustrated materials, and for pre-testing illustrations on their own (Lyster, 1995: 40; PATH/FHI, 2002: 42; Sejake, 1993: 11).

McKeon (1996) discusses health care communication with low literate patients in general terms, and while she mentions layout, graphics and typography in passing, her main point about pictures is cultural, for example, that "culturally different" patients may find the content of certain visuals offensive. Doak et al. (1998) suggest that pictures aid memory when communicating health information to low-literate cancer patients, are useful to support verbal communication strategies, and reinforce written information. A study by Morrow et al. (1998)

suggests that icons assist comprehension of information to do with medication, such as daily doses, by adults both young and old. Morrell, Park and Poon (1990) also considered the factor of age when they compared the effects on comprehension and memory of presenting prescription information in a pictorial format with that of a verbal format. It was found that instructions that included pictures helped young adults but hampered older adults' memory and comprehension. Delp and Jones (1996) found that cartoon illustrations are an effective strategy for conveying information and may improve patient compliance with treatment instructions.

Gustafson (1986) investigated what non-literate village women in Haiti recognised in certain health education pictures, and found that picture complexity had a negative effect on recognition rates. Hugo and Skibbe (1991) investigated to what extent illiterate female patients were able to interpret instructional illustrations on breastfeeding, and found visual literacy to be a key factor in successful health education and that great care is needed when designing visual materials in this context. While the findings indicate that low-literate patients are able to interpret instructional illustrations, black and white illustrations were far more difficult to identify than colour pictures. In Cameroon, Ngoh and Shepherd (1997) developed and tested "culturally sensitive visual aids" to aid non-literate female adults to take oral antibiotic medication correctly, and concluded that "population specific" visual aids contribute significantly to improved treatment comprehension and compliance.

Mansoor and Dowse (2003), Dowse and Ehlers (2004, 2005), and Dowse (2010) have investigated the local use of "pictograms" to communicate medication instructions amongst different population groups. The different studies have found that participants liked pictograms on medicine instruction labels, and that locally generated pictograms had higher rates of correct interpretation than those from international sources which contained unfamiliar symbols. The risks of misinterpretation due to poor visual literacy skills are highlighted, along with the need to design such materials in consultation with the intended audience. Interestingly it was found that participants from certain African language groups seemed to have significantly better skills at interpreting pictograms than others, and that it was not possible to attribute this to cultural factors (Dowse & Ehlers, 2004: 692). However, education levels did have considerable impact on these skills, with correct interpretation increasing amongst those who had passed grades 5 to 7 at school (2004: 689). Pictograms were better interpreted when they were combined with text, which "possibly resulted from viewers being better able to contextualise the image within a body of information which provides an automatic prompt to the viewer in creating meaning from the image" (Dowse, 2010: 168).

On a different note, and moving away from illustrations of treatment, some have considered how attempts to depict the physical symptoms of HIV/AIDS in media images may contribute to increased stigmatisation of the disease and those who live with it (Varas-Diaz & Toro-Alfonso, 2003). The difficulty of depicting symptoms that are not visible or not obvious is something I have wrestled with as an illustrator, and some of the illustrations tested in this study suffer from this issue, of trying to show something without grotesque exaggeration or being ineffectual. Others have reflected on the difficulties of depicting illness, for example finding effective ways to convey states of mind, or depict advice, in visual terms (Carstens et al., 2006).

Linked to the EPIDASA project, Carstens et al. (2006) considered ‘visuals’ in HIV/AIDS education materials, and whether literate and low literate audiences interpreted these differently (Carstens et al., 2006). Their study tested illustrations of varying complexity and levels of abstraction, and found that the difference between low-literate and literate participants’ abilities to interpret the visuals increased with more complex cognitively demanding illustrations. It is argued that very often the illustrations in HIV/AIDS education materials try to depict messages that are not possible to communicate clearly in visual terms:

This implies two types of meaning that are not compatible with the potential of the visual medium: static visuals cannot directly express the difference between deontic and epistemic states of mind, for example the difference between what *is*, as opposed to what *can* or *should be*. This results in images that are complex combinations of analogical and symbolic elements, and that require recognition and understanding at different levels. Although the pictures appear to be simple, they impose heavy cognitive load on viewers, who have to recognise individual elements and attribute relevant roles to them in the depicted scene or situation (Carstens et al., 2006: 222).

They go on to state that “The ultimate interpretation requires a full understanding of the range of analogical and abstract elements, as well as correct assessment of this knowledge in the context of the story of HIV.” (Carstens et al., 2006: 228).

The study was later replicated, with a few methodological changes, reporting similar findings (see Maes et al., 2008: 160). While low-literate participants could identify people and objects to the same extent as literate participants, the former had more difficulty interpreting symbols, and details such as gestures and facial expressions according to their intended meaning, than those in the literate group. The important findings are as follows:

... stand alone visuals are not or hardly-not able to transfer complicated health messages. The results show how important it is to offer a relevant context for interpreting visual messages. Furthermore, designers should be aware of different interpretation strategies related to visual signs. This should stimulate them to use as much as possible visual elements enabling simple ‘symptomatic’ interpretation strategies based on natural correspondences and analogy with familiar real world experiences of viewers. Iconic and symbolic visual elements are dangerous as they have a high chance to be misunderstood (Maes et al., 2008: 167).

It is worth noting that Maes et al. seem to interpret the terms ‘icon’ and ‘iconic’ differently from the icon-index-symbol categories of Peircian semiotics. Their analysis uses terminology which seems similar, i.e. distinguishing between symptomatic, iconic, and symbolic “interpretation strategies”. However, their examples reveal the differences: “brown bread → healthy food” is identified as belonging to the “iconic elements” of interpretation (2008: 161). In Peirce’s terms, as I interpret them, the association of brown bread with healthy food is more of an index, because icon relates more to the surface appearance of things. I think it is impossible to avoid “iconic ... visual elements” as advised in the quote above, which confirms my sense that Maes et al. use iconic differently to the way in which I and others use it in semiotic visual analysis. For example, Hoffman explains the term ‘iconic’ as external resemblance (Hoffmann, 2000). The same interpretation is evident in Fiske’s sample analysis of a cartoon (Fiske, 2011: 46-47).

Hoogwegt et al. (2010) whose research was also associated with EPIDASA, investigated the challenge of depicting motion in static, health-related illustrations, specifically the use of abstract pictorial elements such as arrows. “Natural visual elements, such as hands and objects” were better at conveying movement to a low-literate audience than were arrows. The differing use of iconic is again obvious in the quote below, although the salient issue is the limitations of using visuals in this context:

Given the complex nature of many of these messages, static pictures consisting of natural analogical elements cannot do the job on their own. The practice of health related pictures shows that communicative pictures almost always combine natural elements (for example, human figures with their meaningful postures, gestures and facial expressions, analogical objects) with a large number of abstract elements, requiring more complex interpretations, such as iconic associations (in which visual objects do not denote themselves but some related concept, e.g. a coke denoting the whole class of unhealthy food, a leg denoting walking, or a mouth denoting talking) or rule based symbolic meanings ... But even the addition of abstract elements cannot do the communicative job properly. Oral explanations are often needed to convey complex messages (Hoogwegt et al., 2010: 189).

These three investigations represent a move away from the technical consideration of matching different illustrating styles to particular audiences, to a more theoretical, conceptual consideration of the content and context of illustrations, and meaning-making strategies. Certainly, these findings and reflections concur with much of what I have observed in my own research. In addition, certain terms for discussing these issues seem to be becoming more concrete and consistent with regular use in these related studies, such as the use of the term ‘analogical’.

Gaede (2010) details the research process involved in creating a nutrition education calendar for elderly Sharpeville residents with low levels of literacy, in order to describe strategies for

“stabilising pictorial meaning” for this audience. This study used a semiotic framework influenced by Peirce, also referring to visual representational latitude (VRL) from Pauwels (2005, in Gaede, 2010: 170), and Goldsmith’s syntactic, semantic and pragmatic semiotic levels (1984). The findings related to difficulties the participants experienced with recognising depicted objects and linking captions to illustrations, and later the exploration of the influence of degrees of abstraction and illustrating styles. Participants preferred “hand-drawn, sparingly shaded or filled in, photorealistic line drawings” over more abstract/simplified pictograms “in a style associated with public signs used at international airports” (2010: 179-180). The importance of exploring an intended audience’s interpretive abilities and then adapting illustrations accordingly to avoid a wide VRL is advised. This should be done through dialogue and a participatory approach which does not coerce communities to accept pictorial signs but rather enables people to play an active role in deciding what should be depicted and how. This echoes others’ earlier recommendations, and reminds me of Linney’s “people-centred” approach, which is not usually possible in a less than ideal world where resources are stretched, unless it is part of a funded research project like the one Gaede describes. This study is valuable for its theoretical approach and its updated findings.

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The literature reviewed in this chapter confirms that the relationship between literacy and development is real but contested. The need to communicate with low literate audiences has in the past, and still does, involve illustrated print materials, despite the limitations of this media which may seem passé in the era of electronic and digital communications. I have discussed the known strengths and weaknesses of pictorial communication in this context, to inform and understand the investigations reported in the following chapters. The next chapter explains my research approach and the mixed methods adopted.

## Chapter 4: Research design and methodology

Broadly, the aims of most qualitative studies are to both reflect the complexity of the phenomena studied, and to present the underlying structures that make sense of that complexity. The task of the researcher is thus a dual and contradictory one of simultaneously ‘telling the story’ from the point of view of the research participants, and unpacking that story in some way such that the broader meanings can be elicited (Green & Thorogood, 2004: 175).

Since the mid-1980s, the question of how to provide “qualitative, yet authentic (re)constructions of subjects’ communicative experiences” has troubled communications researchers (du Plooy, 2009: 32). This concern was strongest during the 1990s, and led to a revisiting of quantitative methods to address issues such as the validity of observations and the generalisation of findings. The question also contributed to the growth of cultural studies, feminist research and participatory research, but it has not been definitively ‘answered’ (2009: 32).

This study seeks to answer questions of *what* people see and understand when they look at illustrations, through individual interviews. It also explores the *why* and *how* aspects of pictorial interpretation, through analysing how the meanings of illustrations are constructed in relation to their purposes. ‘What?’, ‘Why?’ and ‘How?’ types of questions are strongly associated with qualitative research methods, requiring language-based data and discursive explanations, as opposed to questions of ‘How much?’ or ‘How many?’ which suggest the reporting of more numerical data (Green & Thorogood, 2004: 5).

According to Lindlof (1995: 21) “... qualitative researchers seek to preserve the form and content of human behaviour and to analyze its qualities, rather than subject it to mathematical or other formal transformations. ... Actual talk, gesture, and social action are the raw materials of analysis.” For my purposes, visuals are included in these raw materials. There is an “alleged schism” between qualitative and quantitative approaches to communication research (Lindlof, 1995: 10), resulting in labels such as “soft” and “hard” science (Lindlof, 1995: 6). Some prefer a compromise, taking the view that the divide may be artificial. It is unhelpful to view qualitative and quantitative approaches and their associated methods as mutually exclusive, for often methods from each are combined (du Plooy, 2009: 19; Green & Thorogood, 2004: 5; Hardy & Bryman, 2004: 1). Certainly qualitative research needs to follow generally accepted, common procedures in order to avoid confusion between the number of methods available, and maintain scientific recognition (Green & Thorogood, 2004: 174; Marshall & Rossman, 1989).

## **4.1 Paradigm and approach**

The term paradigm refers to the “constellation of philosophical assumptions which are shared by members of a given research community” which express the ontology, epistemology, and axiology (values) embedded in any research endeavour (Humphrey, 2013: 4). How we understand the nature of existence, different types of knowledge, and the values which guide us relates to the kinds of research questions we ask, and the methodologies we choose in order to address those questions. Thus paradigms are of practical use to locate and evaluate research, and should enhance researchers’ capacity for critical reflexivity (Humphrey, 2013).

My study belongs within an interpretivist paradigm, because it is concerned with subjective interpretation and responses to visual information. Interpretivism is humanistic and concerned with the meanings of social events or processes, usually viewed through the lens of individuals’ subjective experiences (Bryman, 2008; Cohen, Manion, & Morrison, 2011; du Plooy, 2009; Silverman, 2000). Its premise is that reality is not fixed, but can be examined from multiple viewpoints as people actively construct their social world in unique ways. Researchers who attempt to represent social realities have been likened to quilt makers, in that they produce “a pieced-together set of representations that are fitted to the specifics of a complex situation” (Denzin & Lincoln, 2003: 5). This means qualitative, “thick” descriptions are preferred in order to fully represent such complexities, rather than reducing findings to their simplest terms (Geertz, 1973, in Cohen et al., 2011: 17). Qualitative researchers prefer to analyse words and images rather than numbers, and focus on meanings rather than behaviour (Hammersley, 1992: 165). In reporting, researchers acknowledge their own subjectivities, drawing on their own experiences and empathy to better understand their participants’ stories (Humphrey, 2013). Bryman (2008: 17) describes the layered nature of interpretivist research as follows:

“There is a double interpretation going on: the researcher is providing an interpretation of others’ interpretations. Indeed there is a third level of interpretation going on, because the researchers’ interpretations have to be further interpreted in terms of the concepts, theories and the literature of a discipline.”

As an exploratory study, this research demanded a qualitative approach, a choice supported by the multi-disciplinary, fragmented nature of studies in visual communication. A qualitative approach to communications research is guided by the ontological assumption that reality is subjective, and that insights into the social world, including communication, can be gained from the subject’s viewpoint. In order to describe reality, one must explore the meanings people derive from communicative events. In epistemological terms, knowledge exists in many forms and can be gained from a variety of sources, including culture, and the researcher uses

interpretive skills to understand and explain phenomena (du Plooy, 2009: 35). The diversity of the theories and research conducted in many different fields both enriches and complicates the topic (Hoffmann, 2000; Moriarty, 1995; Pettersson, 2007), and thus the “flexible” nature of qualitative research methods are appropriate (Green & Thorogood, 2004: 25; Silverman, 2000: 2).

Mouton’s ‘Three Worlds framework’ distinguishes between “real-life problems” (World 1), “the world of science and scientific research” (World 2), and meta-science (World 3), providing a structure with which to “describe and clarify (different) aspects of the logic of research” (2001: 137). My research brings together the three worlds. I draw on World 2 to investigate a situation in World 1, through investigating an aspect of “human behaviour”, to do with “cultural objects and technology” (2001: 52). I engage with World 3 in order to understand the coming together of Worlds 1 and 2.

#### ***4.2 Researching the visual***

My study is concerned with images, and may even be argued to be image-based, but I do not consider my methodology to be visual research in the way that many understand it (Banks, 1995: 1). Visual research is not necessarily the same thing as researching visuals. I have not produced visual records of the investigation, and the research participants did not produce any images as data. My interview data and my analysis of the illustrations are word-based. However, the investigation of the perception and reception of images in educational and cultural situations is an important part of understanding the visual, the inclusion of which into educational research “goes beyond the mere use of photos, drawings and other images as fashionable accessories” (Fischman, 2001: 29). In addition, after an initial focus on the participant’s interpretations, it was necessary to broaden the analysis to include the illustrations themselves. Thus a brief consideration of image-based or visual research methodologies follows, in order to locate this study on the visual research ‘map’ and show which concepts in common use have relevance, and why certain approaches do not.

Image-based research has its roots in anthropology and sociology, disciplines which emerged at roughly the same time as the invention of photography in the eighteenth-century, and according to Prosser (1998: 100), early practitioners used photography to capture peoples’ appearances, built environment, and cultural practices to use as ‘scientific’ records. In educational research, visual methodologies have received growing attention since the 1990s, through the analysis of visual culture in relation to education (including film, advertising and other examples of popular

culture), while others turn to a variety of visual methods of collecting and recording data, such as taking photographs, making drawings, and even films (Fischman, 2001: 28; C. Mitchell, 2008; van Leeuwen & Jewitt, 2001: 4-9). This phenomenon is part of Mitchell's "pictorial turn" in social science research (1987, 1992, in Fischman, 2001: 29; W. J. T. Mitchell, 2008: 15) which Fischman eloquently explains:

The growing interest in scholarly inquiry into visual experiences and studies of seeing and the seen follow an unmistakable social and cultural reality: that images have become an omnipresent and overpowering means of circulating signs, symbols and information (2001: 29).

Mainstream academia resisted the use of visuals as data, or as major components of research 'products', because in most fields findings are traditionally presented in particular ways using words and/or numbers. Visuals are included as illustrations of experience rather than as the main evidence of something, due to the complex and often ambiguous nature of visual meaning (Booth, Colomb, & Williams, 2008: 85; Fischman, 2001: 28; Prosser, 1998: 97-98; Stuart, 2006: 65). Visual recording technology such as film and camera have at times been thought to capture "neutral" objective records of social situations, but it has become widely accepted that this is not the case, and most researchers are aware of the consequent limitations (van Leeuwen & Jewitt, 2001: 4).

Images are no more 'transparent' than written accounts and while film, video and photography do stand in an indexical relationship to that which they represent, they are still representations of reality, not a direct encoding of it. As representations they are therefore subject to the influences of their social, cultural and historical contexts of production and consumption (Banks, 1995: 2).

Such issues have implications for the constructs of trustworthiness and validity in image-based research, and it is necessary to avoid making "exaggerated claims" for visual research methodologies (C. Mitchell, 2008: 366). However, similar challenges are faced by all qualitative researchers to varying degrees, and there are accepted methods for addressing such concerns. For examples, see Prosser (1998: 104-106), Bell (2001: 24-34) and Mitchell (2008: 374-377). There is also a large body of literature on researching the visual, on using visual material in research activities and on presenting research visually, suggesting that visual research is increasingly accepted in the social sciences, even if in practice the uses of images may be fragmented and diverse (Banks, 2001: 2). Fischman (2001: 31) argues powerfully for the uses of images in educational research as revitalising tools for more comprehensively exploring and communicating knowledge, in conjunction with traditional written texts.

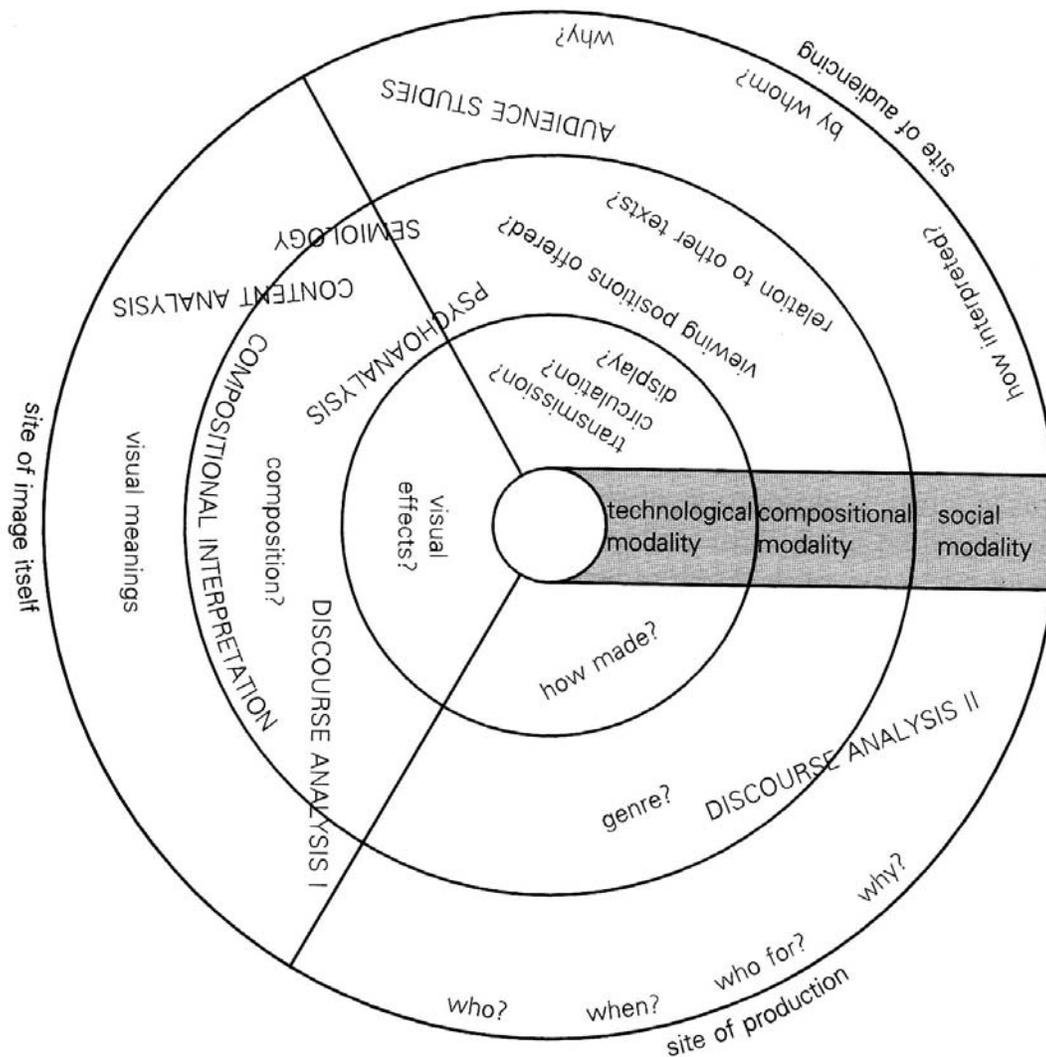
Van Leeuwen and Jewitt (2001) mention ways of including the producers and viewers of images but are not very clear on alternatives to the content and semiotic analysis of images, for even

social semiotics is criticised for being more concerned with “‘textual’ structures” than with real viewers of text and their interpretations (Iedema, 2001: 200), as mentioned in Chapter 2.

Nevertheless, Prosser’s (1998: 2) hope that “in the future visual researchers will draw on several quite different approaches to conducting studies and yet provide an approach based on the commonality of thinking on how best to understand the visual world” is coming to fruition. Although there is still a confusing array of material to consider, I have found certain ideas and tools recurring across many areas of visual work and approaches, for example the use of semiotics to analyse the construction of meaning. I discuss this methodology in more detail below, in relation to Rose’s diagram (Figure 22) which captures the wealth of approaches to visual analysis.

### **Studying audience interpretations**

Rose links theory and approaches to methodology in very practical terms, which helps to provide some clarity on where I should locate this study in the visual research spectrum. In a chapter titled *Researching visual materials: towards a critical visual methodology*, she advises against attempting to examine too much (Rose, 2001: 29). She identifies and discusses sites and modalities and practical analytical tools for interpreting visuals. How these work and relate to each other is demonstrated in the diagram below:



**Figure 22. Sites, modalities and methods for interpreting visual materials (Rose 2001: 30)**

Seen on the diagram above are three sites where meanings of an image are made: the site of production, the site of the image itself, and the site where audiences see it. I understand meaning at the site of production, and at the site of audiencing, but I have questions about meaning at the site of the image itself, for can any meaning exist independently of a viewer's interpretation, be they the producer or the receiver? Rose (2001: 203) suggests that studies of audiences usually neglect the site of the image itself, and given that the researcher is also an audience, such work often lacks "reflexivity". However, it seems impossible to consider meaning in the site of the image without including the site of audiencing to some extent. Perhaps this concern is answered by the other components of the diagram, modalities.

Each site consists of modalities, different aspects to the processes of each site. Three modalities in particular contribute to critical understanding of images: technological, compositional, and social. I initially chose the latter because it seemed most relevant for this study, referring to “the range of economic, social and political relations, institutions and practices that surround an image and through which it is seen and used” (Rose, 2001: 17). According to Rose, trying to look at all aspects of sites and modalities results in “analytical incoherence” and it is better to choose which of these “are most important in explaining the effect of an image.” She also asserts that “Theoretical decisions will enable you to focus on your methodological strategies” (Rose, 2001: 29).

Rose’s diagram demonstrates visually how modalities work across sites, and in which areas of investigation particular analytical methods tend to be used. These methodological choices must correspond with theoretical approaches at various levels of generality, informing each other. Thus presented, it seems easy to delineate the scope of an investigation; and initially this study sat mainly in the zone of “audiencing”. Within the section labelled “site of audiencing” is the outer “social modality” band containing the questions “How interpreted? By whom? Why?” with the label “audience studies”. “Semiology” overlaps slightly from the “site of image itself” section. As I have already explained, in my study I use concepts from semiology, or semiotics, in the data analysis of audience responses. In relation to this diagram, Figure 11, Rose comments as follows:

...it should be noted in some cases, these focuses are more a matter of what has been done so far by those researchers interested in visual matters than what the method itself might allow. This is the case, I think, in relation to the neglect of audiencing by the second type of discourse analysis that precludes exploring the site of audiencing, but very few of its proponents have carried out that kind of research. (Rose, 2001: 190)

The term ‘audiencing’ is also used by Fiske (1994, in Rose, 2001: 25) who suggests that “this is the most important site at which an image’s meanings are made”, defining audiencing as “the process by which a visual image has its meaning renegotiated, or even rejected by a particular audience watching in specific circumstances.” Jansen and Steinberg (1991: 32) refer to theoretical approaches concerning the “recipient”, which treat the viewer as “an active or equal partner in the communication process” and emphasise the recipient’s interpretation of the message, and they include semiology as a theoretical approach which concerns “the dynamics of communication” (Jansen & Steinberg, 1991: 45).

What I have read about audiencing affirms the approach, methods and sites (in Rose’s sense) which this research covers. However, what began as essentially an audience study, utilising

semiotic tools/concepts to analyse participants' interpretations, has broadened to include more equally the site of the image and site of production. According to the above diagram, the study remains located in the social modality, far more than in the compositional and technological modalities. The social modality explores visual meanings at the site of the image itself, and asks "Who, when, who for?" and "Why?" at the site of production. My experience of this research suggests to me that the questions "How interpreted? By whom? And why?" at the site of audiencing cannot be divorced from the questions in the other two modalities. They are essential to the exploration of visual meanings, and the site of production clearly involves interpretation as well. Although my study refers to all three sites on this diagram, it hopefully avoids the analytical incoherence Rose warned against, by restricting itself almost exclusively to the social modality (the outer ring of the diagram). Although "How made?" and visual effects, composition and genre from the other two modalities in the inner rings have some relevance, they are not the primary focus. Finally, semiotics provides a structured conceptual framework with which to analyse the different data sources, namely the written transcripts and recordings of the interviews, and the illustrations themselves. In this manner, I was able to study the interpretations of the intended viewers, alongside the intended meanings of the illustrations as interpreted by the producer.

### ***4.3 Methods of data collection***

This study was initially intended to be based on data collected through interviews, but it became clear that the illustrations would also need to be analysed and thus they are also sources of data. The demands of these different sorts of data led to a mixed method analytical approach, the benefits of which I discuss further on in this chapter.

The process of collecting the 27 illustrations, which eventually became both data sources for semiotic analysis and part of the research instruments used in the interviews, is detailed in section 4.7 below. The detailed account of the sources/origins and rationale behind selecting each one is covered in Chapter 5.

Interviews are the method most widely used to collect data in qualitative research, and "a relatively efficient way of generating data on almost all health topics" (Green & Thorogood, 2004: 79). I chose to conduct my research through semi- or partially-structured interviews, commonly used in a comparative research design, where several people are asked the same questions, or in this case shown the same pictures and asked the same questions, in order to enable the researcher to reach a deeper understanding of an issue (Wengraf, 2001: 103).

Although the interview is structured, it is essentially qualitative, allowing participants' own words to come through in context, and enabling further discussion to enable in-depth understanding of how meanings are constructed (du Plooy, 2009: 198; Lindlof, 1995: 164).

According to Rose (2001: 191-192), the interview method is the one most commonly used to investigate how audiences interpret images, for it allows the researcher access to both the interviewees' "conscious opinions and statements" and their language usage and what this may reveal about their construction of meanings and experiences. Penn (2000: 242) supports the use of interviews in this type of research. Audience interviews commonly involve television viewers, and are most often unstructured and open-ended, falling into three types: one-to-one interviews, group interviews (usually existing groups but sometimes brought together especially for the research), or family interviews (also group interviews but often involving participants of several generations) (Rose, 2001: 194).

Morley (1980: 33) criticised one-to-one interviews for treating participants as "social atoms", and that groups allow for social dynamics to be observed. However, I believe individual interviews are valid in certain situations, when one needs particular information, and is not focussed on observing social interactions. Green and Thorogood support this (2004: 120).

In my study, I am fully aware of the significance of social context and interpersonal relations. This awareness was one of the factors motivating this research, for I recognise that people from different contexts and/or cultures may interpret messages of all kinds differently due to multiple factors. This links back to Kress and Van Leeuwen's (2006: 119) represented and interactive participants discussed in Chapter 2. The social aspect is the metaphorical 'water' in which this research 'fish' swims.

The interviews were conducted in Zulu with the help of an interpreter. Participants were interviewed individually, away from the others in the group. By away, I mean in a separate room, or at one rural site, out of doors, because the resource centre where classes take place at that site has only one room. I chose to speak to individuals on their own because I wanted to get immediate, frank responses to the pictures. Viewing pictures in print materials is often a solitary activity, as is reading. I wanted to know what each person saw and what they thought the pictures meant, without mediation, discussion and the negotiation of ideas between participants. In short, an examination of group dynamics (rather than an *awareness* of them) may have interfered with the data I hoped to collect for this study.

My research assistant, Ms Taadi Modipa, was also my colleague at Learn with Echo. I chose her because she had previous experience in data collection, was fluent in both English and Zulu, and she had training and experience in community development work among the ‘target group’ of this research. I knew she had a good understanding of the technical requirements of these interviews, and that on a personal level she would be able to show respect to the participants and put them at their ease. This proved to be correct. Modipa’s role was pivotal, and I as the researcher was completely reliant on her for the interviews to take place successfully.

Although I was officially ‘in charge’, during the interviews I found myself taking on a tentative, observer’s role, while occasionally asking a question or suggesting a prompt. As Bruski (2011: 57) experienced, there is value in having a companion researcher actively participating in the interviews. Although we did not formally decide to be co-raters, we did discuss participants’ responses in the gap between interviews and after each session was over. Bruski observes that a “single rater is capable of overlooking something or making mistakes, but that capability is reduced when another rater views and rates the data independently.” This can improve the validity of the findings. Some issues to do with translation did emerge when I considered the interview transcripts later, which I will discuss further on in this chapter.

I was also extremely grateful to each participant for being willing to give up their class time and contribute their responses towards something that offered them little tangible benefit. Although I did not openly labour my sense of indebtedness, I think it contributed to a relaxed and friendly atmosphere during the interviews, as much as was possible within the ‘structure’ of urban, employed, educated researchers interviewing unemployed, educationally disadvantaged people many of whom lived in a deep rural area.

Altogether twenty-three individual interviews were conducted, twelve in rural areas and eleven in urban centres.

#### ***4.4 Research sites and participants***

##### **Sampling**

The study concerns Zulu speaking adults with low levels of literacy and investigates how they interpret illustrations. I chose participants according to principles of purposeful (also called ‘purposive’), criterion sampling as described by Patton’s Typology of Randomized and Purposive Sampling (Wengraf, 2001: 102). This can be described as selecting participants according to criteria relevant to my research questions, my theoretical position and the literature

reviewed (du Plooy, 2009: 123; Silverman, 2000: 105). Green and Thorogood (2004: 102) describe it as “explicitly selecting interviewees who it is intended will generate appropriate data”, and they also quote Patton (1990) who suggests that the overall aim of purposive sampling is “to include ‘information-rich cases for in-depth study’ (Patton 1990: 182)”.

The research participants were Zulu-speaking adults enrolled in ABET Level 1 Zulu classes at adult literacy centres divided into two categories, urban and rural. I selected the participants from ABET Level 1 classes for several reasons. Low-literate adults with very little formal education are the intended primary audience of the illustrations, and their attendance of ABET classes gave me some idea of the participants’ levels of literacy. They were conveniently already grouped together and meeting regularly, which made it easy for me to arrange the interviews. I chose Level 1 because I thought that learners who had progressed further up the rungs of the system were more likely to have had more schooling in particular ways of consciously analysing graphics in print materials, and I wished to avoid this if possible.

Interviews were conducted at sites run by four different organisations, which allowed access to their classes. Two centres were run by non-governmental organisations (NGOs), and two were state-run Public Adult Learning Centres (PALCs). The rural centres included the Family Literacy Project, an NGO operating at Ndodeni and Mpumlwane, near Creighton, and the Richmond Public Adult Learning Centre (a PALC). Within the city of Pietermaritzburg, participants were found at the NGO Tembaletu<sup>2</sup> Community Education Centre and at Manaye Adult Centre (a PALC).

These particular groups were selected because I had already had occasional contact with the organisations under which they operated through other work in the past. I knew the literacy groups were functioning and would be reliable, and my access was possibly made easier because those in charge knew of me. I had not met any of the literacy groups’ facilitators or any of the participants before the interviews, though, so I do not believe my prior working relationships with the organisations had any negative or contaminating influences on the data I collected.

The choice of two different types of organisations (NGO and government) in both categories (urban and rural) was to avoid undue influences of any particular organisation’s approach on the

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<sup>2</sup> The correct Zulu spelling of this word is thembalethu, which translates as “our hope”. I use this ‘English’ version of the word because the organisation officially does so. The origin of this incorrect spelling may have been ignorance on the part of the English-speaking white founders of Tembaletu, many years ago, or a desire to make pronunciation easier for foreign donors!

results, for certain approaches to ‘picture codes’ are explicitly taught in some literacy programmes.

The individual participants who participated in interviews can be considered a volunteer sample, because after having arrived at the purposively selected sites, and having been introduced as researchers to the group, we did not interview everybody but asked for volunteers. Although this has drawbacks, such as possibly increasing sampling bias (du Plooy, 2009: 124), in terms of social power relations in the interview setting, discussed previously, it seemed more respectful to allow individuals to actively choose to be involved or not. I did not wish to have to coerce anybody, which would have been counter-productive and of course ethically dubious.

### Participants’ details

The participants’ details are included in the table below. I recorded the following information about each participant: which site they were interviewed at (rural or urban); age; gender; levels of formal schooling, if any; length of time in the literacy class; and whether or not they had employment. The names used in this report are not their real names.

Participants’ details (*Not their real names)							
No.	Name*	Site	Age	Gender	School	Time in ABET class	Work
Participants interviewed in rural areas							
1	Thabile	Ndodeni	70	Female	None	Four years, interrupted	No
2	Thembani	Ndodeni	44	Female	None	One year	No
3	Hannah	Ndodeni	70	Female	Grade 5	Unsure – since 1990s	No
4	Elizabeth	Ndodeni	61	Female	None	Two years	No
5	Bongiwe	Mpumlwane	51	Female	Grade 9	Five years	No
6	Lindiwe	Mpumlwane	23	Female	Grade 9	Three years, interrupted	No
7	Zandile	Mpumlwane	42	Female	Grade 7	Eight years (Level 3 English)	No
8	Sibongile	Mpumlwane	19	Female	Grade 7	One year	No
9	Sifiso	Richmond	49	Male	None	Two years	Yes
10	Thokozani	Richmond	20	Male	None	Four years, interrupted	No

11	Nondomiso	Richmond	39	Female	None	One year	No
12	Silindile	Richmond	40	Female	None	One year	No
Participants interviewed in the urban area							
13	Busisiwe	Tembaletu	20	Female	Grade 8	Three months	No
14	Didizana	Tembaletu	44	Female	None	Three months	Yes
15	Mandla	Tembaletu	32	Male	None	Three months	No
16	Thandeka	Tembaletu	35	Female	None	Three months	Yes
17	Muzi	Tembaletu	19	Male	Grade 4	One day	No
18	Dumisani	Tembaletu	40	Male	None	Three months	No
19	Sipho	Tembaletu	21	Male	Grade 1	One year	No
20	Jonas	Manaye	76	Male	None	One year	No
21	Mary	Manaye	30	Female	Grade 3	Five months	Yes
22	Philisiwe	Manaye	38	Female	None	Four months	No
23	Nosipho	Manaye	43	Female	Grade 1	Four months	No

### **Rural/Urban**

12 participants were interviewed at literacy groups in rural areas, and the other 11 participants were interviewed at literacy groups in an urban area, central Pietermaritzburg. Each participant is thus classified as either ‘urban’ or ‘rural’. I did not wish to stereotype individuals according to these categories, but it is a useful divide in terms of considering likely different levels of environmental exposure to varieties of media, and access to educational resources/opportunities, which were relevant to my research questions. This distinction pervades some of the other sections below on other details about the participants. For example, participants’ gender at different sites varies according to the rural/urban distinction.

### **Age**

The participants’ ages ranged from nineteen years to seventy-six years, the majority (43%) evenly spread between twenty to forty years of age. Six (26%) were aged between forty and sixty years. Only four out of the twenty-three (17%) were over the pensionable age of sixty. The average age across all the age groups was forty years.

## **Gender**

Sixteen of the participants (70%) were female, and seven (30%) were male. This gender imbalance reflects the tendency for more women than men to attend adult literacy classes, particularly in rural areas where traditional gender stereotypes remain and roles are more firmly entrenched. My own past experience has been that it is quite unusual to find men in rural literacy groups, and I did not find any men in the classes in Ndodeni and Mpumlwane. It must be noted that the Family Literacy Project also has a bias towards female participation; being particularly concerned with enabling caregivers of pre-school children to promote literacy at home. Two men and two women were interviewed at Richmond PALC, the other rural site.

Of the seven interviewed at Tembaletu Community Education Centre, four were men. At Manaye, only one of the four interviewed was male. Thus of the rural participants, only 17% were male, and at the urban sites this figure rose significantly to 45%. It is worth noting that the illiteracy rate among women in South Africa is thought to have increased over the past decade, and that more women were found to have had no schooling in 2001 than in 1996, which links to the next sub-section on formal schooling (Rule, 2006: 117).

## **Formal schooling**

Fourteen of the participants (61%) reported no formal schooling at all before joining their respective adult literacy classes, and, surprisingly, half of these were among the urban group, with the youngest being twenty years old. Since the end of apartheid in 1994, a basic education has become, in principle, more accessible, and one does not expect to encounter young adults with no schooling at all. It would have been interesting to probe the reasons why some of the younger participants had not attended school at all. However, I did not want to get distracted by additional information before the actual interview even began. I also did not want to risk making the participants uncomfortable at the outset by delving into what could be painful personal history. It seemed more important to remain focussed on the research at hand (the illustrations) and build a rapport around that process.

One urban participant, Busisiwe, stood out from all the rest at her literacy class at Tembaletu. She was the first one to step forward to be interviewed when the others in the group were very reticent, demonstrating why volunteer sampling should be treated with caution, “because volunteers often share characteristics related to approval-seeking needs, intelligence and education levels that are not to found among non-volunteers ... increasing the sampling bias and unrepresentativeness of target population parameters” (du Plooy, 2009: 124). She reported that

her highest level of formal schooling before the ABET class at Tembaletu was Grade Eight (Standard Six, the first year of high school), her spoken English was fluent, and she chose to answer the questions in English.

Aged twenty, Busisiwe explained that she was attending the mother tongue Zulu ABET Level 1 class in order to improve her literacy skills in her mother tongue. It is likely that she previously attended an English medium school. I found her presence in a Zulu ABET Level 1 class both surprising and fascinating. I wondered if this was part of a trend, of young Zulu-speakers educated in English wishing to experience their mother tongue as a written language of learning. If this is so, it seems worthy of further investigation through a different research project. For the purposes of my research, I infer that Busisiwe was not in the same category of 'low-literate' as the other participants, although I am unable to comment on her actual English literacy levels. Her presence seemed fortuitous, because I was able to observe whether her responses to the pictures differed from other participants. This is discussed further in the chapters that follow.

### **Length of time in class**

The length of time the different participants had spent in class varied considerably, and a number of factors contributed to this.

At Ndodeni, it varied from one year (Thembani), to Hannah, who was unsure of exactly when she had started attending but said it was sometime in the 1990s! Another, Thabile, said she had started four years previously but her attendance had been interrupted at times by family responsibilities. The other participant from Ndodeni, Elizabeth, said she had been attending class for about two years. This suggests that at this very rural centre Level 1 is not run as a clear cut course with a start and an end, and a progression on to the next level within a year or so. I got the impression that this group is as much a social or community group fulfilling many roles as well as promoting literacy amongst its members.

The fact that some of the participants had been attending literacy classes for several years caused me to reflect on whether they fulfilled the sample selection criteria for the study. However, the completion of the declaration of the informed consent agreement revealed something of the participants' literacy skills, with almost all the participants taking quite some time to carefully write their names, the date and a signature, even those who claimed to have been in an ABE class for years. It was humbling and sometimes quite painful to observe the effort that went into what is a quick and simple task for most literate adults, but it also allayed my fears that the

participants who had spent longer in class might not be suitably 'low-literate' for inclusion in the study.

## **Employment**

Only four (17%) of the participants reported that they had regular employment. Only one of these was from the rural group, Thokozani from Richmond. The other three were urban. Two of these were domestic workers and one was a cleaner at a police station. One of the respondents who had no job said he did "tog" labour, meaning occasional 'piece' work.

It is worth noting that in rural areas, some of the participants may be called to work on farms at certain times of the year, during planting or harvesting seasons, and this contributes to seasonal lower attendance rates of literacy classes in rural areas. This would also affect those participants who grow their own food in rural areas, who may have to work in their own fields and not attend class at times. Many would probably not report this as "employment" because it does not lead to much income, if any.

The question of whether the participants had employment or not is interesting, because it is often assumed that levels of literacy and education influence a person's chances of getting a job (Kiggundu & Castle, 2006; Openjuru, 2004; Pretorius, 2004). This relates back to the conundrum of whether people are illiterate because they are poor (implying unemployment), or poor and unemployed because they are illiterate? Geographical location is also likely to play a role. While three urban participants considered themselves to be employed, the one rural participant who claimed to have regular paid work was interviewed in Richmond, a more developed small town than Ndodeni and Mpumlwane. Interestingly, only one of these four participants reported any formal schooling, and that was an urban participant who had Grade 3. Perhaps for employment purposes, an adult who as a child attained no more than Grade 3 might as well have had no schooling, especially if that Foundation Phase schooling was at a historically under-resourced township or rural school.

## **4.5 Ethical considerations**

Ethical acceptability is an issue to be considered at every stage of research design, from the choice of topic and the purpose of the research, to the selection and treatment of participants, and the handling of the data collected (du Plooy, 2009: 97; Kimmel, 1988: 15; Lindlof, 1995: 99; Wengraf, 2001: 185). This concerns both the integrity of the research methods used, in order to preserve "the ideals of objective truth and knowledge", and the protection of human research

“subjects” (du Plooy, 2009: 97). While the maxim ‘Do no harm’ should always apply, there are sometimes complexities to social science research, such as those “resulting from conflicting sets of values concerning the goals, processes or outcomes of investigations” (Kimmel, 1988: 28). The rules which determine whether or not research is ethical are not set in stone, and it is possible for researchers simply to pay lip service to such issues (du Plooy, 2009: 53; Kimmel, 1988: 26). In addition, sensitivity to ethical issues does not automatically guarantee that such problems will be avoided, and ethical dilemmas do arise.

It was necessary to obtain ethical clearance from the university prior to embarking on the study, to ensure that all procedures conformed to accepted research practices and the institution’s own Code of Conduct for Research. This entailed completing a detailed ethical clearance application form for the School of Education’s Research Office (under the College of Humanities, UKZN). A section of the application form dealt with the following ethical issues:

- the nature of the participants, in terms of age and possible vulnerability to exploitation or trauma
- the activities participants would be required to perform, and whether these might cause stress, humiliation, be unpleasant, or involve deception
- the form of any research instruments to be used, such as an interview schedule
- what measures would be taken to protect the autonomy of participants, namely, informed consent
- what steps would be taken to obtain informed permission from authorities, “gatekeepers” or caregivers/guardians, in the case of minor children
- how the data collected would be treated, stored, and/or disposed of
- how the participants’ identities would be protected in the subsequent dissemination of the research findings
- whether the project had received any funding that might impact on the design, outcome or dissemination of the research

I had obtained written permission from the organisations where interviews were conducted, granting me access to their classes and had developed the informed consent document which all participants had to sign before being interviewed (Appendix 4). A voluntary informed consent agreement formalises the relationship between the researcher and the ‘researched’ participants, so that a legal framework exists to prevent problems, and address any that do arise (Booth et al.,

2008: 83; Kimmel, 1988: 67). This process not only informs the research subjects of the content and purpose of the study and of any possible consequences or risks of participation, but is also designed for the legal protection of the researcher and their institution. It should also guarantee that a study is conducted responsibly (Lindlof, 1995: 98).

The informed consent ‘form’ consisted of an explanation of the nature and purpose of the research, the process to be followed, and that participation was voluntary and that participants were free to withdraw at any time during the interview. It was translated into Zulu, and both the English and the Zulu versions were printed together, back to back, on A4 sheets of paper.

I recognised the irony of expecting people with low levels of literacy to read, understand and sign such a document. Before the interview, the interpreter discussed the informed consent form in detail with each participant, to make sure that he or she understood fully. Participants were given a copy of the letter/form to keep so that they had a record of what they had agreed to, and could contact me if any problems arose.

Two participants actually stood up to go after they had listened to the explanation, agreed to participate, and completed and signed the form, believing their role was fulfilled. They were both happy to stay and be interviewed once we explained that the main interview had not started yet. This highlighted for me the truth of Kimmel’s comments about informed consent and social research, that although voluntary informed consent is widely recognised “as the central norm governing the relationship between the investigator and the research participant”, it is also “in many cases, much too easy a hurdle for the investigator to clear” (1988: 67). Researchers in ‘underdeveloped’ social contexts have increased responsibilities to behave with integrity and to pay more than lip service to issues of informed consent. Banks (2001: 131) suggests that ‘permission’ should be understood in “socially or culturally appropriate” ways according to context:

Among groups who have little familiarity with either literacy or mechanical image technologies it may not be appropriate; for others who may have good reason for being suspicious of legalistic processes, the use of such forms may itself create unwarranted suspicion. People ... caught up in bureaucratic webs of words, forms, checkboxes and the like, may happily give verbal assent on camera ... as a result of trust previously established, but refuse to put their names on documents they do not fully comprehend.

Although the above quote refers mainly to research involving the filming or photographing of participants, it articulates the unease I experienced, i.e. that completing the ethical requirements of informed consent presented its own dilemmas and did not necessarily mean that the

participants really understood what they were taking part in, or felt they had any real power to refuse or withdraw.

The degree of risk to participants involved in my research was extremely low, for nobody was asked to reveal any sensitive personal information during the interviews. I entered this process conscious of the fact that the participants I interviewed were educationally and economically disadvantaged and that as an educated researcher I would find myself in a situation embodying unequal power relationships. I had a responsibility not to exploit participants, to acknowledge the validity of their life experiences, and to deal respectfully with their responses to my questions or interview tasks. According to Wengraf, the minimum ethical requirements of a research interview are that the interviewee should not be changed for the worse, and that such interviews are not “designed to ‘help’, ‘empower’ or ‘change’ the informant at all” (2001: 4). Du Plooy (2009: 198) suggests that “Understanding another person’s meaning construction is an extremely delicate process that requires the interviewer to be very sensitive to respondents’ verbal and nonverbal responses.” I tried to be sensitive to each participant’s mood as they responded to the different pictures depicting illness, to notice if anybody seemed distressed by having to talk about such things, or to see if anybody looked as though they wanted to stop. I was grateful that nobody seemed to experience this.

I do not reveal any of the names of the participants who were interviewed for this study. I do not believe the findings are damaging to any individuals or to the literacy centres mentioned, and there should be no negative consequences if the findings are published.

#### ***4.6 The research instruments***

The process of developing the research instruments ended up being a much larger part of the research than expected. This applies especially to the selection of the illustrations themselves. The origins of each illustration are listed in a table at the beginning of Chapter 5, followed by narrative descriptions of the sources and my reasons for choosing particular illustrations over others. In addition, the illustrations themselves later became subjects of semiotic analysis.

My research instruments consisted of several closely linked elements.

## **Interview schedule**

### **Response sheet and illustrations**

I developed what I termed a response sheet (Appendix 2), essentially a form in the format of an empty table. I used a separate one of these forms for each interview, to structure and standardise my handwritten notes of each participant's responses. Above the blank table, there is a space to write a number assigned to the participant, and a row of the table is allocated to each illustration. Each illustration's row is identified by a number in the far left column of the table, ordered in the same sequence in which the participants viewed and interpreted the illustrations.

The illustrations and the response sheet were interdependent and together made up the interview schedule, the different elements of which are discussed in more depth further on.

27 illustrations were selected from health education materials aimed at adults, most of them produced by me over several years of illustrating literacy materials. Very limited questions were decided upon, simply to invite participants to tell us what they thought the pictures meant. The process of selecting and organising (and in some cases adapting) the pictures is outlined below, together with the questions that were asked about them.

### ***4.7 The illustrations***

The illustrations are reproduced in Chapter 5, with information on their original sources/contexts, and are repeated for purposes of clarity and convenience in the two chapters which analyse the illustrations themselves and the participants' interpretations respectively.

### **The process of selecting illustrations**

The criteria for selecting the illustrations were based on my research questions, to investigate the extent to which the target audience of the educational materials I illustrate understood the intended meanings of the illustrations. I chose existing illustrations, and adapted or re-developed some for the purposes of exploring the relevance of the 'traditional' guidelines for illustrations aimed at low-literate audiences (as discussed in chapter 3).

### **Isolating the illustrations**

Illustrations from existing health education materials were separated from their accompanying text. This was done to explore how visuals alone were understood. Although this could be criticised as creating an inauthentic context for viewing and interpreting illustrations, and as such

could be seen as a limitation of this study, my decision is validated by recommendations for pre-testing illustrations, which state, “The text and picture for each message should be treated separately in order to obtain specific pretesting results for each.” (PATH/FHI, 2002: 80). This is particularly relevant because this study seeks to evaluate the extent to which illustrations can be used to convey information to audiences who *cannot* read the accompanying text. In theoretical terms this relates to anchorage, the function assigned to “linguistic” messages like captions, which help to fix how an image may be interpreted (Barthes, 1977: 38-39). Anchorage is discussed in more detail in the theory chapter. For illiterate or low-literate audiences, the text is unlikely to fulfil its anchoring role, and therefore the intended meaning of illustrations in this educational context hardly changes with the removal of the original verbal text.

### **Grouping the illustrations**

The illustrations were grouped for two different purposes: one group of illustrations was chosen in order to assess illustration styles and techniques of depiction. The other group of illustrations was chosen to assess different ways of portraying content, for example, more ‘literal’ or ‘realistic’ pictures compared with others using more conceptual approaches such as symbols or indices. In each group there were several sets of illustrations, each set offering alternative ways or styles of depicting the same or similar subject matter and message.

All of the illustrations can be seen in Appendix 1, where they appear exactly as they were shown to the participants during the interviews, that is, one illustration per A4 size page.

Each set of illustrations is reproduced together in Chapter 5, with explanations of where the illustrations were originally used, or in some cases why they were adapted and/or developed for this study. An uneven amount of detail may be included for some of these, but it is simply the case that some of the illustrations have a more interesting background, or more issues to consider, than others.

The illustrations are numbered in sets according to a system working across the categories of ‘Style’ and ‘Content’, from Set 1 to Set 9. The different versions in each set are identified by A, B, or C, and D (where applicable).

### **Illustrations to assess different approaches to content**

The group of illustrations chosen to assess ways of communicating content consisted of five sets of illustrations depicting the following:

- Set 1: Stages of HIV (three versions, 1A, 1B, and 1C)
- Set 2: The HIV virus (three versions, 2A, 2B, and 2C )
- Set 3: Safety for caregivers (four versions, 3A, 3B, 3C, and 3D)
- Set 4: Internal organs – the digestive system (three versions, 4A, 4B, and 4C)
- Set 5: TB symptoms (three versions, 5A, 5B, and 5C)

Altogether there are sixteen illustrations in the content category. However, several of the illustrations consist of more than one picture, namely Illustrations 1A, 1B, 3A, 3B, and particularly 5A and 5C. In other words, *an* illustration sometimes consists of six pictures placed together in the effort to portray one message or theme, for example, the different symptoms of TB (illustrations 5A and 5C). Thus, overall, there are thirty-four pictures in the content category. Some of these pictures are part of one illustration, in other words, they are placed on the same page and meant to be viewed and interpreted together, or in relation to each other. I discuss the conventions of multiple picture ‘frames’ in relation to both theory and practice (in terms of interpretation difficulties) in Chapter 2. The inclusion of illustrations which consist of several pictures had major implications for the data analysis, which are discussed later in this chapter.

For the content group, it was decided that all the illustrations should be in the same style, to minimise the impact that different illustrating styles would have on participants’ interpretations. Because many of the illustrations were done by me, in my style, it was fairly easy to recreate the few which were done by other artists in the same style to match the others. Each case of this is discussed in detail in Chapter 5.

The illustrations in this ‘content’ category are the ones I have selected for in-depth semiotic analysis, because the rationale behind this group of illustrations most lends itself to the type of semiotic analysis proposed. The analysis of the illustrations from the ‘illustrating styles’ category (below) is less about sign types in relation to content. In addition, analysing every illustration in great depth would be extremely lengthy and unlikely to yield greatly different findings to the analysis of the already fair number of ‘content’ illustrations analysed.

### **Illustrations to assess different illustrating styles**

The illustrations chosen to assess different illustrating styles and conventions consisted of four sets of illustrations (Sets 6 – 9) which included comparisons of:

- Set 6: Different techniques of creating tone (four versions of the same composition, 6A, 6B, 6C and 6D)

- Set 7: Different levels of stylization/abstraction (three versions, 7A, 7B and 7C )
- Set 8: Techniques of creating pictorial depth (two versions of the same scene, 8A and 8B)
- Set 9: Background detail versus no background detail (two versions, 9A and 9B)

### **A note about numbering**

The way the illustrations are numbered in the thesis is slightly different to the way they were numbered in the research instruments during the interviews. Initially I had worked out a numbering system for each illustration, divided according to the two groups of ‘Content’ and ‘Style’. For the ‘different approaches to content’ group, I numbered the sets from one to five, and assigned a letter of the alphabet to each illustration, which gave me, for example, *Content Set 1 illustrations A, B and C*; *Content Set 2 illustrations A, B, and C*, and so it continued. I followed the same system for numbering the illustrations to test different illustrating styles, for example, there was *Style Set 1: illustrations A, B, C and D*, and so forth. This is how the forms and the illustrations used on the individual sheets for the interviews were labelled and recorded. At the time it seemed ‘scientific’ to have a slightly complicated coding system of numbers and letters, rather than simply names. I followed this system during the data analysis, but it was at the stage of writing it up all together that the numbering system became very confusing. Thus for the sake of clarity, the sets of illustrations are now numbered across the categories of ‘Style’ and ‘Content’, from Set 1 to Set 9, and I refer to the illustrations as 1A, 1B and 1C, for example.

### **4.8 Construction of the interview schedule**

I was concerned that if participants saw the pictures from the same set of illustrations one after the other, the content would have a cumulative effect on their comprehension, in other words what they saw in the first picture might illuminate the intended meaning of the subsequent ones in the set. Thus, the different sets of pictures were mixed up and interspersed with others, in an attempt to lessen the effects of consecutively viewing several pictures depicting the same subject in different ways. This meant that in each interview individual illustrations were shown out of their sets, in this more random order of content:

- TB symptoms;
- stages of HIV;
- the HIV virus;
- internal organs – the digestive system;
- safety for caregivers;
- TB symptoms... repeated in this sequence.

## Questions asked

For all the illustrations except one set, the participant was asked “What do you see in this picture?” A follow up question, depending on the initial response, was “What does it mean?” or “What is it trying to show?” This follows the advice of Penn (2000: 243), mentioned earlier, that it is best to ask general questions that do not lead the participant’s responses.

The exception was with the illustrations in Set 6 (Figure 34), the same illustration done four times using different artistic techniques. These illustrations were shown together to each participant, on separate sheets of paper laid side by side in a row. The sheets of paper were labelled individually, A, B, C, and D. The participant was told that all were pictures of the same thing, and asked, “What do these pictures show?” This question was followed by asking “Which of the pictures do you like the best?” and then, “Why did you choose that one?” The reason for showing the participants the four versions together was that they needed to directly compare the different stylistic techniques, and this seemed the most effective way to enable this. Although comparisons are involved with the other illustrations used in this study, this set of one composition executed in four styles was unique, and the other comparisons were done by me as the researcher, when I compared the participants’ interpretations of different approaches to content, for example.

The section of the response sheet that dealt with Set 6 (known as ‘Style Set 1’ during the data collection phase) reflects this different handling, breaking from the more tabular format and rather listing the questions asked of the participants with space below each for notes. The question “Which of the pictures do you like the best?” had the letters “A B C D” afterwards, which was used to indicate each participant’s choice by circling the relevant letter. An example of this section of one of the completed response sheets is below, in Figure 23.

**Style Set 1**

These pictures are all of the same thing. What do these pictures show? D C B A.

Different drawings people the same.

Dr. checking child's chest, mother brought child to Dr.

Which of the pictures do you like the best? A B C (D) D

Why did you choose that one?

Colours are "bright", can see them clearly.

**Figure 23. A response sheet for Style Set 1 (now Set 6)**

The interviews were recorded in non-numerical form using a digital audio recorder and handwritten notes on a specially developed response sheet (Appendix 2). To recap, this sheet consisted of a list of the pictures in a table format with empty cells under ‘yes’ and ‘no’ columns, for noting down whether the participant had correctly identified the intended content of the picture, and a larger cell for recording the notable details of each interpretation. The table rows were numbered to correspond with the number assigned to each illustration, and these rows followed the order in which the illustrations had been purposefully organised for the interviews. I developed the column categories of the response sheet intuitively, according to the sort of information I expected to be important to record in the interviews. In more practical terms, because the rows corresponded to the order in which the pictures were to be viewed by participants, the response sheet table ensured that the individual illustrations on the separate sheets of paper were kept in exactly the same order for every interview.

Having the response sheet to structure my handwritten notes was invaluable. It helped me to focus my attention throughout, and enabled me to keep my note-taking readable, organised and contained. If I had simply been taking notes on a plain note pad, there is a strong likelihood that the level of detail and modes of expression might have been rather uneven across interviews. I did not confine my notes to the structure of the table format, for example often an interpretation fell between the ‘yes’ and ‘no’ columns, in other words it was partially a ‘correct’ interpretation according to the intended meaning of the illustration, and I noted this across the cell borders. Thus the response sheet became a flexible recording tool as the situation demanded.

These notes were not intended to be word-for-word records, but to supplement and enhance the transcriptions and translations of the digital audio recordings. This strategy was successful. I was able to use the completed response sheet notes to check up on details in the transcriptions. They helped to jog my memory of the interview situations, and their handwritten quality retained an immediacy of expression that felt closer to the interviews than the typed out and translated transcriptions. Perhaps this sense is purely personal, because it is my own handwriting. More importantly, often details were noted on the response sheets that could not appear in the audio recordings, for example, when participants did not follow the traditional left-to-right, top-to-bottom order of ‘reading’ when viewing a group of pictures making up one illustration on one sheet of paper. In short, the handwritten notes on the response sheets were valuable on several different levels.

## **4.9 The interviews**

Throughout each interview, the interpreter translated each answer into English as it was given, and explained any further comments made by participants. I found that I was able to understand first hand much of what was discussed in Zulu, even though I am not a fluent speaker of the language. I believe this enhanced the English notes that I took on each response that was verbally relayed to me by the interpreter, and this allowed me to feel quite confident in the written notes I took. As mentioned, a digital voice recorder was used to record every interview.

The interviews lasted approximately thirty minutes on average, during which time the participant was shown twenty-seven illustrations on which he or she offered comment and interpretation.

### **Pilot interviews**

Three pilot interviews were conducted, with a small convenience sample comprised of people with less than complete primary schooling and low literacy skills, to detect any shortcomings with the planned technique. I was particularly interested in the length of time that each interview would take, and the number of illustrations that could be used in the schedule. I wanted to avoid showing too many pictures to the participants and making them tired of looking and responding. I was also keen to see the extent to which the sequence in which the pictures were viewed might affect interpretation by the participants.

The pilot interviews went fairly well, and alerted me to some difficulties with some of the illustrations I planned to test. The main case involved three of the initial four illustrations which were intending to depict HIV (the virus), and two of these were very similar and equally incomprehensible to the three participants. I decided to develop these further so that the three different final drawings used a wider range of visual and conceptual approaches to the problem of depicting an unseen thing, for it seemed like a waste to go into the actual interviews knowing that there was a strong likelihood that those particular drawings would be totally incomprehensible. They did not seem to contain enough information, or visual cues, to guide viewers towards any kind of useful interpretation, incorrect or otherwise. Thus I explored other ways of depicting HIV and selected a wider range of depictions.

Conducting the pilot interviews helped me to feel prepared for the 'real' interviews, with some idea of the kinds of responses to expect, and how it would be possible for me to record the responses in several ways. I was able to make the decision about the order in which to show the illustrations with more confidence. I did feel the interviews were quite long for the participants,

but I was keen to maximise the number of pictures I could get responses to from each interview, and so I decided not to change very much. This was another decision with “longer-term analytic consequences” (Lee & Fielding, 2004: 535). In retrospect I could have paid more attention to this issue, for there would have been value in getting the participants to discuss fewer pictures in much more depth. The implications of this became clear at a later stage when analysing the data, which suggests there is scope for further enquiry with a more refined technique. This initial ‘wider’ interview process was a necessary stage in the process of learning about effective ways to research pictures and audiences. The interviews as they happened were not unsuccessful, and it is natural that later one gains insights on ways to refine the methods and design of further enquiry.

### **Reflection on the interviews**

At the beginning, the participants were a little mystified at what it was all about, and there was the ethical clearance form to explain and get signed first, and then the collection of biographical information, however brief. This part usually took longer than expected. As mentioned before, a few participants thought they had finished before the actual interview had started!

In the very first interview, the participant seemed to be following a set technique of describing pictures that I gathered must have been taught in class, describing the first picture (Illustration 9A, see Figure 40) by saying “I see a woman wearing a skirt with different colours and a striped shirt. She has hair braided and fastened above her head.” In other words she did not venture beyond a very surface description of the things she saw in the picture, taking note of decorative elements more than the content of what might be happening in the scene, such as what ‘story’ the picture might communicate.

Initially I was wary of prompting participants to say more, for fear of giving too much direction and evoking artificial responses. I was also wary of the effects of giving some participants far more prompting than others. As the interview progressed we as interviewers became more comfortable to offer limited verbal prompts, and this seemed to help the participants respond more naturally. We managed to relax into the interaction and by the end it felt like a natural and comfortable situation.

My knowledge of Zulu was good enough to be able to follow much of what the participants had to say, and I checked for clarity with the interpreter when I was not sure if I had understood correctly. In this way I added a few new Zulu words to my vocabulary, as a few words I had never heard before cropped up repeatedly, such as *isilisa*, which means ‘man’. Note taking

helped me to stay focussed throughout the interview, because working with an interpreter makes it easy for one to slip into a less active role in the situation, and during a long interview one's mind might easily wander.

The interviews were enjoyable in most cases. We continued to prompt participants occasionally, in an open-ended, non-directive manner. For example, as each participant was shown an illustration, they would be asked, "What do you see in this picture?" If the response was extremely limited and seemed to ignore major parts of an illustration, the interpreter would say "Anything else?" Having given the participant the opportunity to add to their response, if an important aspect of an illustration was consistently ignored sometimes he or she would be asked directly "What do you think this is?", or less directly, "Anything else about the rest of the picture?" Quite often this would be met with an "I don't know". When a participant's explanation was not easy to understand, a prompt was sometimes adapted from their response, as in this example, which refers to Illustration 2C (see Figure 38):

*Interviewer:* What do you see in this picture?

*Participant:* This is a hand. A round thing with decorations.

*Interviewer:* What do you think the hand is doing?

*Participant:* The hand is decorating the round thing.

These prompts were given intuitively on a case-by-case basis, and some participants were prompted a little more than others. However, when they were used, the prompts were limited to one or two per illustration, three at the most. We did not go on prompting until we had squeezed a detailed explanation for every aspect of every illustration from every participant. This did not seem feasible in the time we had available, and the number of illustrations to which the individuals had to respond. As it was, the participants seemed to find the intense concentration needed during the interviews quite tiring. As I reflect elsewhere, this is one of the effects of including so many illustrations in the interview schedule.

The prompts we did use referred only to content information the participants first mentioned themselves, in order to avoid 'planting' ideas. A limited amount of uneven prompting of different participants is acceptable and accounted for in the interpretivist paradigm within which this qualitative study sits, because in this context research interviews are understood as social encounters, which vary naturally according to the different individuals involved. In interviews similar to the ones I conducted, appropriate limited prompting is used to enable participants to

show how much they do notice/understand in pictures which is often not initially verbalised (Hoogwegt et al., 2010: 184; Lewis, 2004: 209).

The use of prompts added tremendous value to the study, for some vital insights might otherwise have slipped by unnoticed. For example, also with reference to Figure 38, the following exchange reveals that although one part of an illustration was correctly interpreted, another aspect was incomprehensible:

*Participant:* The hand, I think the hand is bleeding.

*Interviewer:* Anything else about the rest of the picture?

*Participant:* I don't understand it.

Responses like this example led me to consider how combining different conceptual elements in one illustration seemed to have a negative impact on participants' interpretations. They seemed less confident to express their interpretations, and reluctant to guess what the illustration meant. Key findings like this are fully discussed in the following chapters.

#### **4.10 My position as researcher**

As a researcher I was gaining something extremely valuable from the process, access to the 'real world' content on which my study depended. I had to grapple with my own comfort levels regarding what the interviews required of the participants, and how little they would gain directly, if anything, from their involvement.

I recognise that the interpersonal dynamics between the three people involved in each interview – me, the interpreter and the interviewee – influenced what was possible in the research process. For example, where the power lay between the three of us, and how differently each of us might have experienced the interview and the interpersonal dynamics. Understanding the interview as a social encounter means recognising that cultural and social difference between researchers and the 'researched' has an influence on the data collected, and it is necessary to acknowledge this (Green & Thorogood, 2004: 92 - 93). Similar issues are dealt with under ethical considerations.

I was conscious of how much the participants might relate what they saw in the pictures to their own life experiences of illness and perhaps even to the death of loved ones, or their own health status. I also considered the length of the interview and number of pictures in the instrument, and that some pictures might seem very similar to the viewers. I felt almost apologetic about taking their time, and making them look at such pictures, and grateful for their willingness to

participate. My concerns were mitigated by the fact that many of the participants clearly enjoyed the interviews, as something different and entertaining, and liked being called upon to give their opinions.

During the course of the interviews I was continually reminded that I occupied an extremely privileged position in that I was not only the researcher but also the producer of most of the pictures being scrutinised in the process. The risk of researcher bias is covered below, in the section on the limitations of this study.

As discussed in Chapter 2, producers and viewers of mass media texts rarely meet. I had created the pictures for use in materials with a specific audience of “implied readers” (Iser, 1974: 34) in mind, and this often happened unconsciously. This study partially aimed to explore the “disjunction between the context of production and the context of reception” (Kress & van Leeuwen, 2006: 115) in order to better understand what takes place in the gap between the creation of illustrations and the intended viewers’ interpretations. Being face to face with real members of my envisioned target audience, and being able to observe their reactions to my work first hand felt extremely exciting, and my appreciation of this opportunity grew during the data collection process. It really did feel as though I had managed to insert myself into the gap between production and reception, as though a temporary space had opened up which I could occupy and learn from. Of course the interview space was contrived, casting an abnormal amount of attention onto the illustrations to elicit responses/interpretations of which the participants might not normally have been conscious or sought to verbalise. The research situation could not replicate the more ‘natural’, possibly solitary and silent viewing/reading situation. However, despite these limitations, the interviews provided a collection of illuminating and inspiring experiences for me in my different roles.

#### **4.11 Data sources**

There were two primary sources of data, the interviews, and the illustrations themselves.

The illustrations, which I initially categorised as research instruments, took on a dual role as data sources in the research, as it became clear that the analysis of the participants’ interpretations needed to be understood in relation to the sign systems of the illustrations’ intended messages. Thus, the illustrations were the subjects of semiotic analysis, which left me with narrative accounts of the sign-message relationships as I interpreted them.

The interviews left me with data in the following formats:

### **Audio recordings**

As already mentioned, the interviews were recorded using a digital voice recorder. All except two of these recordings were in Zulu. One of the interviews at Tembalethu Community Education Centre was conducted mainly in English, because the participant Busisiwe, mentioned above, chose to speak that language. In the other non-Zulu interview, participant number 20 spoke in Sotho, his mother tongue, because the interpreter also has Sotho as her first language.

### **Handwritten response sheet notes**

As discussed above, notes were taken during each interview to supplement the audio recordings.

### **Transcriptions in Zulu**

The digital audio files were transferred to computer, and the interpreter transcribed these into MS Word documents, in Zulu.

### **Translations of the transcriptions in English**

The interpreter translated the Zulu transcriptions into English. It was good that the transcriptions and translations could be done by the person who was actively involved in conducting the interviews, because she had personal experience of the context, the individuals and what was said. This allowed me to feel confident in the reliability of the transcribed and translated versions on which I would base my analysis. This is validated by Green and Thorogood, who mention that for a translation to be reliable, the interpreter “should ideally be fully involved in the study rather than just hired for each interview.” They assert that translation is actually a significant part of the analysis of data, and my experience supports this view (2004: 85).

Having the interview data recorded in these different formats was extremely useful, for on several occasions it was necessary to refer between them, to double check exactly what participants had said. This kind of crosschecking worked rather like a kind of triangulation, and highlighted how critical the issue of translation is, and that the potential for unnoticed errors is likely to increase if a researcher relies completely on an unexamined translation for their data. Although I was confident that the translation arrangements were sufficient and reliable in order to ensure that valid information would emerge for the analysis, detection of a mistake served as a good reminder of how individual interpretation can change the meaning assigned to a word.

A participant responded to Figure 38, the picture of a cut finger with a blood drop and an enlarged view of blood cells, by saying, “*Isandla. Angazi yini lokhu ngathi yinyosi noma yikhekhe.*” This was translated as “A hand. I don’t know what this is; it is either a bee or a cake.” I was delighted by the idiosyncratic, almost picturesque reference to a bee and a cake, but puzzled because while I could see the “cake”, I really could not see the bee for myself. I wondered, was the “bee” *on* the “cake”? Having been prepared from the start to receive unexpected interpretations of the pictures during the interviews, I would have left the matter at that.

Some weeks later I was expressing my puzzlement over this interpretation informally to someone unconnected with the study, who told me that the word ‘*inyosi*’ is used for both bee and honeycomb in Zulu, and suddenly the description of the picture as “a honeycomb or a cake” made much more sense. The translator had not made a mistake as such, but her interpretation seemed to have changed the meaning of the participant’s response. In this instance, failing to discover this might not have made much difference to the research findings, for both the bee and the cake interpretations were unintended meanings, but it demonstrates the potential for data (and consequent findings) to be significantly altered by undetected translation anomalies. I believe this is a concern in all situations requiring translations, and does not reflect badly on the translations or translator in this study. This particular example has enhanced my work by alerting me to the importance of looking more closely at responses that I could not understand.

#### **4.12 Data analysis**

This complex nature of qualitative research methods is described as “messy, ambiguous, time-consuming, creative, and fascinating” (Marshall & Rossman, 1989: 112). The process is said to be “continuous”, “cyclical”, and flexible (Lindlof, 1995: 215). It can be an art, drawing on the powers of the imagination and “intuitive skill” (Green & Thorogood, 2004: 174). Such fluidity allows the researcher to adapt his or her analytical process depending on what the data reveals, hence the art of balancing between what exists in the data and what the researcher ultimately wants to argue (Hardy & Bryman, 2004: 11; Marshall & Rossman, 1989: 113). I did indeed find it necessary to adapt and develop my data analysis as the interview data revealed that more systematic and deeper analysis of the illustrations would enrich the findings.

Different categories of analytical tools are used to address the demands of qualitative analysis; for example, Holmes (1992) identifies conceptual tools, operative tools and literal tools. Conceptual tools relate to theoretical and methodological approaches. Operative tools are the

different procedures followed during the analytic process, such as coding. Literal tools are the physical things one uses, such as a computer, coloured pens, copies of transcriptions, for example. (1992, in Lee & Fielding, 2004: 529-530).

However, according to Green and Thorogood, the task of analysing qualitative data cannot be reduced to a set of tools for use in a “mechanistic” manner (2004: 174). Context and theory must to be integrated in a way that contributes to the analysis of data, hence the concept of ‘theoretical sensitivity’, described as “having insight, the ability to give meaning to data, the capacity of understanding, and capability to separate the pertinent from that which isn’t” (Lindlof, 1995: 95-96). Thus imagination and subject knowledge must together make links between the researcher’s interpretations and the empirical data, an approach demanding both rigour and intuition (Green & Thorogood, 2004: 174).

With the above in mind, I related my approach to data analysis to the aims of the study, to gain a better understanding of factors influencing pictorial interpretation by a specific target audience. I did this by exploring how participants drawn from that audience interpreted the illustrations, in relation to my interpretive meaning construction as a message producer. This was done with the hope of being able to use the results to improve my own practice as an illustrator and materials developer, as well as to contribute to theories of pictorial interpretation among low literate adults. This required a fine-grained discussion, supported by simple numerical comparisons. This methodology provides an example which others may find useful when deciding how to go about effectively illustrating health education materials, or when evaluating existing illustrated materials.

## **Analytical tools**

### **Organising the interview data**

The first step was to find a way of organising the translated transcriptions. I started by taking the responses to each illustration and collating them in one MS Word document per illustration. Considering the responses together allowed me to make comparisons between responses, by doing what Mouton calls “breaking up” the data, resulting in “manageable themes, patterns, trends and relationships” (2001: 108).

I decided not to use NVivo or other data analysis software because learning how to use it effectively might have been more time consuming than it was worth, as Green and Thorogood

warn (2004: 190-191). The responses for each illustration were all relatively short, with no long paragraphs, and thus they seemed simple enough to manage without using a special programme.

I experimented with ways of coding the data using coloured hi-lighter pens (a literal tool), with which the text was manually marked. First I looked for the following categories of responses:

- Intended interpretations of the illustration's meaning ('right' answers)
- Unintended interpretations of the illustration (misinterpretations, or 'wrong' answers)
- Non-interpretation (such as, "I don't know what it is.")

Part of this colour-coding involved noting informally the frequency with which similar misinterpretations occurred, which to my mind rendered an alternative interpretation more understandable, if it was shared independently by several participants.

At this initial stage I was very tentative, because choosing what to categorise and how seemed to be an extremely subjective activity. However, the activity was useful in that it helped me to familiarise myself with the range of information at hand.

The most valuable thing to emerge at this stage, across the interviews, was the way in which participants' responses revealed different levels of interpretation of the illustrations, from surface descriptions (like the one quoted earlier in this chapter) to inferred meanings, and short narrative-like descriptions. At this stage, I termed these levels "levels of engagement", and the following example demonstrates how these work:

The first level of engagement with an illustration was a surface description of the image, the objects or shapes the viewer could identify. As an example, see Figure 44, (from illustration 5C, Figure 31): "This is a picture of a man with his hand on his mouth, and his other hand is on his chest."



**Figure 24. Man coughing, with chest pain**

The next level was an initial interpretation of the surface description, based on the viewer's knowledge and experience. To continue with the above example, "He is coughing, it looks like his chest is sore." or, an alternative interpretation mentioned was "He is singing or praying."

This could be followed by further levels of interpretation and inference, to create a narrative and/or conceptual understanding from the initial descriptions and interpretation. For example, "This man is sick with 'flu or TB."

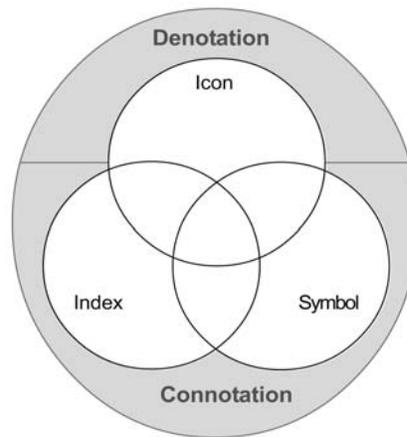
This discovery suggested a definite pattern around which I could structure a more detailed and meaningful analysis of the data. This enabled me to return to the literature with new purpose, and I understood the relevance of particular theoretical concepts for my work. Thus, I arrived at the theories that became my conceptual tools of analysis.

### **Theoretical tools**

Semiotic concepts are useful tools in the analysis of any kind of sign system, including verbal language and visuals of different types, amongst many others. According to Manning, there are various ways to do semiotic analysis, which usually starts with "a description, some points about which to muse, and then proceeds to identify units and their relationships" (2004: 582). This is a process of deconstruction, likened to that of peeling off the layers of an onion, to understand the "essence" of the sign units within their sign systems or codes. The systems or codes themselves may be different, and there may be "interplay" between them, which also needs interpretation (Moriarty, 2005: 238). According to Penn (2000: 227),

Semiology provides the analyst with a conceptual toolkit for approaching signs systematically to discover how they produce meaning. Much of its precision derives from a series of theoretical distinctions, which are captured in a distinctive vocabulary.

For my purposes these include Peirce's sign types, and Barthes' (1977) layering of first and second order meanings in both the participants' responses and the illustrations, known as denotation (what or who is depicted, or an image's literal meanings) and connotation (the ideas and values expressed through an image, in other words, the associated meanings) (Fiske, 1990: 46-48; van Leeuwen, 2001: 94). In Chapter 2, I explained how I combine the sign types with denotation and connotation, as depicted in the following diagram:



**Figure 25. Peirce's tripartite sign types and Barthes' denotation and connotation**

I describe my use of these concepts in Chapters 5 and 6.

### **Operational tools for analysing the interviews**

The next step was to find a way to reduce the data and display the information for each picture in a way that made the patterns easier to see. I developed tables that contained the participants' biographical details and their respective interpretations for each illustration on one page, of which Figure 26 is an example.

In these tables, participants 1 to 12 are the rural participants, and from 13 to 23 are the urban participants. These tables do not show the pseudonyms that I gave to the participants, as I decided to refer to participants using names after I had made the tables.

PICTURE: Content 2 C (HIV – Hand, cut finger, blood drop, circle with arrow to blood to show blood cells and virus magnified)											
Participant details				Denotation		Connotation		Further inferences			Comment
Age	U/R	Sex	Ed	Int	Alt	Int	Alt	Int	Alt	HIV link	
1	70	RF	-	X			X		X		Hand decorating round thing
2	44	RF	-		X						Road sign, hat - don't know
3	70	RF	5	X	X						Hand, flowers, road sign
4	61	RF	-	X							Hand, shapes
5	51	RF	9	X	X						A rock
6	23	RF	9	X	X						Hand, flower-like drawing
7	42	RF	7	X							A sign pointing
8	19	RF	7	X	X						Hand, the sun, eggs, arrow
9	49	RM	-	X	X						Spear points at dish, round things
10	20	RM	-	X	X						Hand, honeycomb or cake
11	39	RF	-	X							Hand, ?
12		RF	-	X							Hand, ?
13	20	UF	8	X		X					Hand bleeding
14	44	UF	-	X		X		X			Cells depleting, blood dirty
15	32	UM	-	X	X						Hand, arm. Stones, trees.
16	35	UF	-			X				(X)	Cut bleeds, not touch blood
17	19	UM	4	X	X		X				Hand, sun, clouds, heart, star Arrow down tissue inside
18	40	UM	-	X	X						Hand, circle flower decorations, arrow point down
19	21	UM	-	X							Hand, ?
20	76	UM	-	X	X						13 people in shape, 2 wombs
21	30	UF	3			X		X		(X)	Infection through cuts
22	38	UF	-		X						Finger points thing from river
23	43	UF	1	X	X						Round thing looks like worms
				19	13	4	2	2	1	(2)	
%				83	57	17	9	9	4	(9)	

**Figure 26. Table used to amalgamate data for illustrations**

The data was arranged on all the tables in the following way. The first four columns, grouped under “Participant details”, show:

- the number assigned to each participant and their responses (from one to 23)
- the age of each participant
- his or her location (“R” for rural and “U” for urban) and gender (“F” for female and “M” for male), for example “RF” stands for “rural female”
- the participant’s self-reported level of formal education at any stage before enrolling in an adult literacy class, with “-” signalling no formal schooling reported

The other columns are grouped under the headings “Denotation”, “Connotation”, “Further inferences”, and “Comment”. These and the abbreviated sub headings of the other columns of the table are further explained below:

Denotation	superficial description
Int	Intended, referring to denotation, connotation and inferences
Alt	Alternative, referring to denotation, connotation and inferences
Connotation	explanation/interpretation of what the denotation/content means

Further inferences	makes deeper connection to, or fuller explanation of, an underlying purpose or meaning of illustration
Comment	reminder of specific comments made, and why some of the responses were categorized in certain ways

Some of the tables differ very slightly from others when it comes to the “Further inferences” and its sub-columns, for example, where I have specified whether a participant’s response linked different pictures that make up one illustration, or mentioned HIV/AIDS by name, where it was relevant.

Similarly, for many of the illustrations composed of several different pictures placed together, it was necessary to have a separate table for each picture in the illustration, thus for illustrations 1B there are two tables, and illustrations 5A and 5C each have six tables. This was an unforeseen complication, because it only became clear later that it was not possible to display the information for illustrations consisting of multiple pictures in this format. Therefore, each individual picture had its own table, even those that were part of one illustration. I accommodated this in the data analysis by making a “link” column in each of these tables, to note whether the participant had linked the different pictures together in some way, as together making up a message about one thing. For example, in the table below, in the column titled “link” the X’s refer to instances where participants said it was the same person in all six of the pictures, or made a link that all the pictures showed different symptoms of the same disease, TB. Below, I reflect more on the consequences of having so many illustrations consisting of multiple pictures.

PICTURE: Content 5 C (Symptoms of TB 6 Frames same man) Mid right: Weight loss											
Participant details			Denotation		Connotation		Further inferences			Comment	
Age	U/R	Sex	Ed	Int	Alt	Int	Alt	Int	Alt	link	
1	70	RF	-	X							Man in shorts and is on the scale. (Different people)
2	44	RF	-	X			X				He looks like he is <b>visiting the doctor</b> and is on a scale.
3	70	RF	5	X							This one is on a scale
4	61	RF	-	X		X					This one is standing on a scale weighing himself.
5	51	RF	9	X				X		X	Weighing himself on a scale as he is not well. Person with TB
6	23	RF	9	X						X	I see a boy standing on a scale weighing himself. Same person
7	42	RF	7	X							Here I see this boy standing on a scale. Not same, not same size
8	19	RF	7		X		X	X			The other is standing, looks sick
9	49	RM	-		X						The other one is standing quietly. Its different people.
10	20	RM	-	X							This one is weighing himself. Same, no different, different size
11	39	RF	-	X						X	This one is on a scale. Same person but keeps losing weight.
12		RF	-	X							Standing on a scale. Different people.
13	20	UF	8	X							He’s weighing himself.
14	44	UF	-	X		X		X		X	Losing weight. Same person. Means he’s sick.
15	32	UM	-	X				X			A boy on a scale weighing himself. Different people. Not ok.
16	35	UF	-	X				X		X	On the scale to weigh himself. Same person, sick, gets worse.
17	19	UM	4	X		X					Was big but lost weight, check weight on scale. Different ones.
18	40	UM	-	X							On the scale, weighing himself.
19	21	UM	-	X							This is a scale. Different people.
20	76	UM	-	X						X	Standing on a scale. Same person.
21	30	UF	3	X		X		X		X	Weighing himself, looks like he has lost weight. Same, sick.
22	38	UF	-	X						X	A man weighing himself. Same person with changes.
23	43	UF	1	X						X	Weighing himself.
				21	2	4	2	6		9	
%				91	9	17	9	26		39	

Figure 27. Table showing data for an illustration with many pictures

These tables represented a starting point for interpreting the data, and were not the ‘be-all-and-end-all’ of the analytical choices I eventually made. Although choosing where to place the Xs was not always a clear-cut decision, the framework made sense to me and it was possible to see participants’ interpretation tendencies displayed visually, by where the Xs are clustered. This tool enabled me to detect any patterns (rather than themes) for comparison between cases; and to summarise data in order to “see across cases” (Green & Thorogood, 2004: 184).

When writing up each section on the individual illustrations, I found myself constantly moving between the tables and the transcriptions, to check the details of what I had previously recorded and categorized on the tables. Sometimes I changed the tables slightly, when I found that I no longer agreed with my initial classification of a response. This demonstrated the interpretive, qualitative nature of this activity, to which I could return later with a changed perception based on reading or additional bits of analysis I had in the meantime completed.

I discovered that layers of meaning could be complex and subtle, especially when considering what connotations a participant seems to draw from the depiction of a subject in an illustration. There seemed to be many layers of possible connotations, which I accounted for in considering further inferences, and these are reflected on the table for each illustration. Sometimes the different columns did not seem adequate, hence the need to consult the transcripts again regularly.

It was at this stage that theory and methodology truly began to meet, for the patterns or themes I noticed emerging from the data directed me to engage with theoretical concepts from semiotics with greater purpose and understanding. Getting to practical grips with the theory began to clarify the tools and methods that could be used to make comprehensive interpretations of the data.

Thus while I located the illustrations in a semiotic frame, I initially did not conduct a full semiotic analysis of the illustrations themselves, because my units of analysis at this early stage were the responses of the interview participants.

In these discussions, I used inductive reasoning, moving from the specifics of what I found in the data to the patterns of interpretation I noticed occurring across the different illustrations to formulate the findings. This is expressed in narrative descriptions, which attempt to account for the conceptual processes of meaning making revealed by the participants’ interpretations.

## **Operational tools for analysing the intended meanings of the illustrations**

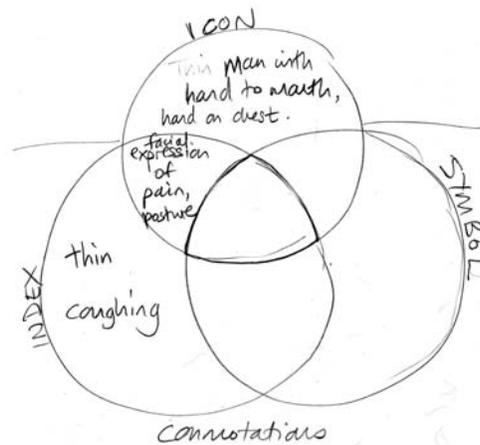
As I became aware of the different levels of interpretation, and linked these to the semiotic concepts of denotative and connotative meanings, I realised the importance of understanding the intended meanings of the illustrations on the same terms that I was using to analyse the participants' interpretations.

Penn (2000) offers steps to follow when conducting semiotic analyses of images, which I have summarised below:

1. Choose the images to be analysed, using criteria appropriate to the research questions.
2. Create an inventory of the denoted, first order contents of the images. (Here I include the icon as a sign type.)
3. Examine how the above elements contribute to the connoted, second order signification, considering various relationships within and beyond the sign system – one example would be context. (Here Peirce's indexes and symbol sign types are included in my analysis.)
4. Decide when to stop – this is usually when the research questions have been addressed.
5. Report the findings in the most appropriate format, which might include tables, narrative descriptions, mind maps, and/or copies or tracings of the images with annotations added.

It is important to note that, "Theoretically, the process of analysis is never exhaustive and thus never complete ... it is always possible to find a new way of reading an image", and the researcher should stick to those aspects which are most relevant to the aims of their particular project (Penn, 2000: 237).

Aspects of the theoretical tools, described in the diagram above, can be used as a structure to categorise the sign types making up an illustration by physically placing them on the diagram (in writing). I attempted this and found it has the potential to provide a useful starting point for more detailed, in-depth analysis in narrative form.



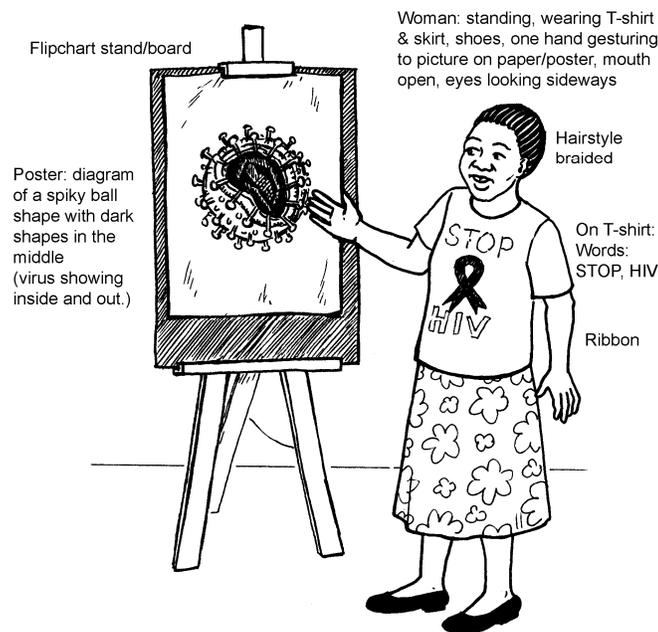
**Figure 28. Rough sketch of sign types in Illustration 5B**



**Figure 29. Illustration 5B: Symptoms of TB**

The rough sketches like Figure 28 are useful tools for thinking, because such an exercise forces one to concretely place elements of the illustration into categories. It allows for the fact that these elements very often do not fit neatly into one category or the other. This reinforces the idea that semiotic analysis is dynamic in nature, and it can be difficult to pin down an analysis to distinct categories. I found in some of the examples that I frequently wrote an object/pictorial element down in one circle or in a section between two of the circles, then thought some more, rubbed it out and rewrote it placing it more in one or the other section. This process helps to reveal some of the assumptions implicit in what were unconscious choices of sign-object relationships.

I also experimented with adding annotations to illustrations (below), mentioned in point five of the steps in semiotic analysis of images listed above, following the example given by Penn (2000: 234).



**Figure 30. Illustration with annotations added**

In principle, I liked the combination of verbal description with the illustration, a very clear and accessible way of presenting a breakdown of the pictorial elements. But I did not pursue this, however, as it seemed to me to be more of an inventory of iconic elements than a comprehensive analysis of relations within and between signs.

Thus, I present my analysis of the illustrations in two ways. I developed a table for each illustration on which I could present the intended denotation and connotations of the elements of each illustration. Thereafter follows a narrative description that explores the sign types in each illustration in more detail.

The tables of denotation and connotation make explicit and record the intended meaning of each illustration in these terms. Like the sketched activity above, these reveal the assumptions and conceptual links that were assumed to be made by the producer of the image, and of course reflect the researcher's interpretation. In this study, these are the same, as I occupy both roles, but of course this is not the case if one is analysing images produced by someone else.

Note that the semiotic analysis of the illustrations in Chapter 5 excludes the illustrations in the 'Style' category. I did not analyse the illustrations in Sets 6 to 9 in this manner because it did not seem as though these would add much more to the in-depth analysis of the 'content' group (Sets 1 to 5) which consists of 17 illustrations (some with multiple pictures). I explain this decision further at the beginning of Chapter 5.

I did, however, develop tables of interpretation for the illustrations to test different styles, because during the analysis of the interviews it became obvious that it is practically impossible to discuss the styles of illustrations without including content interpretations. Style and content are intertwined and the one influences participants' interpretations of the other. It was useful to have the tables for the purposes of comparison and for my own interest when analysing the interviews. The concepts of denotation and connotation remain of relevance to the style category, and references to these occur in the analysis of the interviews in Chapter 6.

### **The impact of illustrations consisting of multiple pictures on the data analysis**

I had included several illustrations consisting of multiple pictures because I wanted to see what participants made of them. I was interested in whether they knew that the different pictures were meant to relate to each other to build a message, or if the pictures would be interpreted separately. Using several different pictures to illustrate the various aspects of an illness is a strategy I have used often in my work, and so my curiosity about this was quite practically oriented and not based on a whim. I was also interested in the order in which the participants' would look at the individual pictures making up the illustration, and whether or not the traditional left-to-right, and top-to-bottom reading pattern would be followed with groups of pictures on one page. An example of one of these is Illustration 1A (see Figure 31).

Having illustrations that consisted of more than one picture had implications for the data analysis, which I did not really think through carefully in advance. The participants' responses to each picture had to be considered individually as well as in relation to the other pictures which together attempted to illustrate a concept or to communicate certain information. This made the data analysis a much bigger job than expected, by having many more pictures to consider than the number of illustrations listed above. In retrospect, I should have realised this during the pre-testing interview phase, but the realisation only really sank in later, after the real interviews. In other words, I subconsciously allowed myself to bite off more than I was expecting to chew, because I did not really want to deal with changing the research instrument significantly. At the time, I thought the more data I had to work with, the better, but later on the added amount felt disempowering and complicated at times. Lee and Fielding (2004: 535) observe that the inter-relatedness of the collection and analysis of qualitative data means that "early decisions or non-decisions about how to handle data can have longer term analytic consequences", and I had to learn this from experience.

### **4.13 Limitations**

The greatest limitation to this study was also one of its strengths, that I was both the producer of the illustrations as well as the researcher. This position gave me some benefits of insight but also meant I was at risk of extreme subjectivity, or researcher bias.

In addition, most of the pictures are executed in my artistic style, and even where different styles of depiction were tested, many of the illustrations are not as different from each other as they might have been, had I used works in their original form from sources such as pamphlets instead. I have explained the reasons why I did not do this (in section 3.7 above) and I believe the decision is justified, but I acknowledge it as a potential limitation nevertheless. Similarly, the fact that I developed a few of the illustrations particularly for use in the study could also be seen a limitation. (The details of these illustrations are in Chapter 5.)

I believe the number and variety of illustrations included for discussion in each interview may also be seen as a limitation, because had there been fewer illustrations it may have been possible to elicit more in-depth discussion and learn more about the participants' interpretation strategies. As it is, my findings are based on what the participants were able to *say*, which is not necessarily the same as what they actually thought, and/or understood, about the illustrations. The interview situation is an artificial one, and the interview schedule itself is an artificial construction of illustrations removed from their typical, authentic contexts.

Along those lines, the participants themselves represent a possible limitation, for as already explained, they were all enrolled at adult literacy classes. This helped me to purposively select participants for characteristics relevant to the aims of my research, such as their low-literacy levels, and ease of access for interviews. However, these participants may also have had more exposure to illustrated educational materials in class than the average person with low-literacy skills who does not attend a literacy class. One could also speculate on the characteristics of people who take the initiative and make considerable efforts to attend adult literacy classes, and how these might set them apart from others.

Rose makes important points about work on audiencing: studies of audiences usually neglect the site of the image itself, and given that the researcher is also an audience (and in my case also the illustrator/message producer), such work often lacks "reflexivity" (Rose, 2001: 203). Such concerns have been addressed firstly, by giving the illustrations used due prominence and analytical attention, alongside the interview data.

Secondly my awareness of the potential implications of my different roles has increased my sense of reflexivity. Reflexivity is an acknowledgement of the researcher's subjectivity and role in producing the data and their meanings, and involves conscious reflection and continual monitoring of the process. This is described as a technique to limit errors that may result from the researcher's reactions, and accounts for the impact of his or her presence on what is observed and recorded (du Plooy, 2009: 212; Green & Thorogood, 2004: 194; Lindlof, 1995: 19). Seale (1999) notes that reflexivity has limits because self-awareness is itself limited to the conscious mind, and there is much that happens subconsciously (Green & Thorogood, 2004: 195). The concept is perhaps most useful when understood as part of the researcher's perspective, "a practical way to interpret events" and "a reflexive sense-making device" which takes a certain view but openly acknowledges other views and experiences (Lindlof, 1995: 112).

#### **4.14 Evaluation of interpretations**

We know that, to the extent that such judgements are possible, research is accepted as 'good' or 'valid' through the operation of the core conventions of the research community: publication and grant refereeing, debate in the literature and at conferences, citation by others, and, most importantly, an understanding (implicitly modest) of what qualitative research can rightly claim (Lee & Fielding, 2004: 543).

The concept of reliability is more appropriate for experimental research, such as quantitative studies, which should be able to be replicated in similar situations. This type of reliability is usually difficult to ensure in qualitative research, which tends to focus on understanding particular contexts (Bertram, 2004: 71-72). Thus validity has remained a central issue for qualitative research (Lindlof, 1995: 216). According to Lee and Fielding (2004: 542), "Criteria for judging the validity of conclusions arising from qualitative analysis have always been contested. ... Perhaps the price of the approach's flexibility is lack of agreement over how such analyses should be validated." Marshall and Rossman (1989: 144-145) refer to "Criteria of soundness", drawing on the highly influential work of Guba and Lincoln (1985) who proposed alternatives to positivist constructs of internal- and external validity, reliability and objectivity. The alternatives for qualitative research are notions of credibility, transferability, dependability and confirmability.

In a discussion on how to present evidence in a convincing manner, Booth, Colomb et al. refer to a "chain of credibility", the last link of which is formed by the researcher engaged in the act of reporting. Readers of research "want to know they can trust the complete chain of reports between what's 'out there' and what they are reading." (2008: 135) The researcher can strengthen the credibility of the evidence he or she presents by recording and explaining exactly

how the data were collected, using primary sources, and providing accurate, complete citations and bibliographic details so that readers may consult those sources themselves. These standardised methods and procedures of collecting and reporting evidence exist to ensure that research is reliable, although the requirements differ across areas of study and between qualitative and quantitative (or interpretivist and positivist) approaches. Most crucial is the nature of the evidence that supports an argument or findings, and how it is presented. Evidence must be “accurate, precise, sufficient, representative and authoritative” and relevant (Booth et al., 2008: 136-138).

In order to maximise the credibility of my interpretation of the interview data, I applied several principles that are typical features of rigorous analysis (Green & Thorogood, 2004: 191-199; Lindlof, 1995: 237-242; Marshall & Rossman, 1989: 144-149). These included:

- giving a transparent account of the steps followed in the handling and analysis of the data
- having the original raw data intact, recorded and available in a number of forms
- analysing and reporting on the whole dataset
- describing relevant background detail, in order to give readers enough context to judge the credibility of my analysis and findings
- dealing openly with any “deviant” cases, “negative instances” or “disconfirming” data, which I saw as enriching the study rather than threatening my findings
- the use of “simple counts” and percentages to show how typical certain types of interpretations are
- making comparisons between cases, and with findings from other research, and
- working with reflexivity, as previously mentioned.

Semiotic methods of data analysis are vulnerable to criticism, for example, that taking such an approach can result in overly theoretical, speculative, subjective (even idiosyncratic) interpretations of material which is sometimes carefully selected to fit the theory (Fiske, 2011; Penn, 2000). “The lack of an empirically validated base of evidence upon which to rest its theory” is the basis of such arguments (Fiske, 2011: 128). Some visual semiotic analyses privilege the interpretive content (such as connotation) over surface details, and may become overly abstract resulting in an academic exercise that bears little relation to likely ‘real’ interpretations. There needs to be a balance between exploring the surface meaning and the underlying message, to avoid merely stating the obvious or conversely indulging in overly-complex, pretentious ‘readings’ (Penn, 2000).

These issues can be addressed through “hybrid semiotic analysis”, essentially a “two-step” (or more) approach which mixes methods (Flannery Quinn, 2009: 143). Van Leeuwen and Jewitt (2001) provide a useful summary of the approaches to visual analysis, of which the most relevant to this study concerns ways of including the producers and viewers of images. They acknowledge the limitations of analysing visual ‘texts’ in ways which cannot access real viewers’ interpretations or the real intentions of producers, and state that “The degree to which producers and viewers of images should be included and how this is to be achieved again depends on the kinds of images analysed, and on the aims of the research” (2001: 7).

In my study I combine data sources, namely the illustrations and the participants’ interpretations gained through the interviews. As I mentioned in the theory chapter, I use an intended-perceived approach described by Moriarty and Sayre (2005), which reinstates the “lay reader” (Penn, 2000: 242). According to Moriarty and Sayre (2005: 245-246), conducting an “expert reading” (i.e. a semiotic analysis) to compare the intentions and interpretations of the producers with the interpretations of real viewers results in the ability to triangulate results. In my opinion, this increases the ecological credibility of semiotic analyses of visual and other ‘texts’, providing “a check on the sense-making process” (Moriarty & Sayre, 2005: 246).

Again, reflexivity has a role to play, for by recognising the criticisms of semiotic approaches and methods, acknowledging potential pitfalls openly, and examining my own assumptions at different stages of the process, these issues can be controlled as much as possible.

My research was a small-scale study, and as such, the findings are not transferable to other population groups or settings. As stated above, external validity, defined as the extent to which the findings could be generalised to the other contexts, is very often not appropriate to qualitative inquiry (Bertram, 2004: 70; Lindlof, 1995: 238; Marshall & Rossman, 1989: 146). I make no claims that my findings are replicable. The transferability constructs of Lincoln and Guba (1985) are interesting in this respect because they shift the responsibility of evaluating whether findings could be applied to other situations from the primary researcher to others interested in applying said findings (Marshall & Rossman, 1989: 145). Similarly, the burden of confirmability is placed on the data rather than on the researcher, allowing others to make their own interpretations and thus evaluate the original findings.

#### ***4.15 A developmental methodology***

...active researchers seldom march through the stages of design, data collection, and data analysis as if they were moving through security checkpoints that allowed mobility in only one direction. Instead, researchers typically move back and forth, as if from room to

room, taking what they learn in one room and revisiting what was decided in the previous room, keeping the doors open (Hardy & Bryman, 2004: 2).

The above-mentioned meeting of theory with what emerged from the data I had collected made me approach the literature on visual literacy and communication with a new sense of purpose. I had a strong sense of working in a spiral pattern, by rediscovering concepts I had passed over in my initial review because their importance to my study was not obvious early on. It was slightly frustrating, in that it would have been useful to know how I could make use of certain ideas at the beginning, and could have designed the research instruments more neatly around testing for certain things. However, this awareness had emerged from the data and directed me to find ways of making sense of what I had found. I could not know what I needed to read and adopt because I had to undergo the research experience (specifically, the interviews and subsequent analysis of that data) first to find out what I would need. The sense of circling back to theory and literature repeatedly became quite satisfying, in that with each return to the literature one gains a deeper understanding of what it means for one's own context. Making these links and discoveries along the way made it feel like a truly developmental process for me, as it became clear how theory and experience/practice really did mesh.

Wollcott's advice to start writing from the very beginning of a project rings true, for writing is in fact thinking, and he suggests that if one battles to write something coherently then it signals that one's understanding or thinking processes are not yet clear (Wollcott, 2009). Writing facilitates thinking, and this has been my experience. Booth et al (2008: 14) suggest how this works, by stating that "When you write for others, you disentangle your ideas from your memories and wishes, so that you – and others – can explore, expand, combine, and understand them more fully. Thinking for others is more careful, more sustained, more insightful—in short more thoughtful – than just about any other kind of thinking."

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This chapter explains the different aspects of the research methods I have used. While I have tried to present the process in the most logical order, the cyclical "back and forth" nature of the activity means that in practice some stages were not always clearly defined or chronological. Writing it up in this chapter has provided valuable reminders and insights into what I did and why I made certain choices. The following chapter explains and analyses all the illustrations, which further illuminates the methodology in this chapter by providing finer details that could not be included here.

## Chapter 5: The illustrations – origins and analysis

### 5.1 Introduction

This chapter consists of two sections. The first section describes where the illustrations used in this study came from, including the purposes for which they were originally developed, where they were published, and the rationale for those few illustrations that were developed especially for this research. A table summarises this information at the beginning, before a more detailed explanation of the sources. The second section consists of analyses of the illustrations using semiotic concepts described in Chapter 2, to address the third key research question of this study, which is, how the intended meanings of the illustrations are constructed in terms of sign types and layers of interpretation/meaning.

All of the illustrations can be seen in Appendix 1, reproduced as they appeared when they were shown to the participants during the interviews. Smaller versions of each one are included in both parts of this chapter, for ease of reference for the reader.

### 5.2 The origins of the illustrations

<b>Original sources/contexts of the illustrations</b>		
<b>Illustration</b>	<b>Source</b>	<b>Adaptations</b>
<b>Illustrations to test different approaches to content</b>		
1A Stages of HIV	Published in Learn with Echo (2003, 2005) series on the immune system	Frames changed slightly to fit page
1B Stages of HIV	New Readers Publishers book: <i>What if it's me? Help with AIDS</i> (Annecke & Madlala, 2006)	Redone in my style
1C Stages of HIV	Rough sketch used by doctor during ARV treatment training for patients	Newly done in my style for this research
2A HIV virus	New illustration for this research	None
2B HIV virus	Nepalese illustration, an example from PATH/FHI manual (2002)	Redone in my style, without Nepali dress
2C HIV virus	Published in Learn with Echo (2003, 2005) series on the immune system	Minor change in positioning/shape
3A Safety for caregivers	Published in Learn with Echo (2005) series on HIV/AIDS	Very little, illustrations un-shaded
3B Safety for caregivers	Published in Learn with Echo (2005) series on HIV/AIDS	Very little, illustrations un-shaded

3C Safety for caregivers	New illustration for this research	None
3D Safety for caregivers	New illustration for this research	None
4A Internal organs	Diabetes education pamphlet from clinic	Redone without tone
4B Internal organs	New illustration for this research	None
4C Internal organs	New illustration for this research	None
5A Symptoms of TB	Published in Learn with Echo (2006) article on TB	Placement changed slightly to fit page
5B Symptoms of TB	Photocopies from TB pamphlet in Zulu (source unknown)	Redone in my style, with slight changes
5C Symptoms of TB	New illustration for this research	None
<b>Illustrations to test different illustrating styles</b>		
6A Line drawing	New copy of scene in photograph	Line drawing
6B Ink wash tones	New copy of scene in photograph	Ink wash drawing
6C Cross-hatched lines	New copy of scene in photograph	Line drawing
6D Lines with flat tones	New copy of scene in photograph	Line drawing with fill
7A Cross section cough	TB booklet published by Soul City	Redone in greyscale
7B 'Realistic' cough	New illustration for this research	None
7C Abstract cough	TB pamphlet published by Sandoz	Redone in greyscale
8A Pictorial depth	New illustration for this research	None
8B Pictorial depth	New illustration for this research	None
9A Background	Published in Learn with Echo (2006) article on TB	None, but placed in frame
9B No background	Published in Learn with Echo (2006) article on TB	Placed in frame, background removed

## Set 1: Stages of HIV



Illustration 1A



Illustration 1B

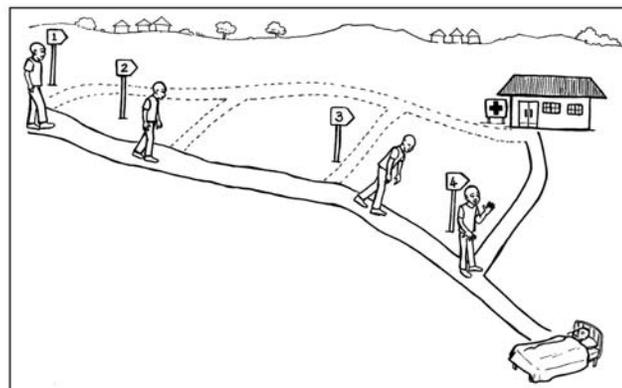


Illustration 1C

**Figure 31. Set 1: Stages of HIV**

### **The source of Illustration 1A: Stages of HIV**

This illustration (Figure 31, at the top) depicts two people, a man and woman, who both develop symptoms of illness in a series of four pictures. This was intended to suggest to a viewer that they were a couple and their health problems were due to a shared sexually transmitted disease like HIV. The other reason for depicting both a male and a female figure was to avoid showing one gender as being more likely to have HIV than the other. This concern was due to reports of

myths that circulate about HIV, such as the idea that women are more responsible for spreading HIV than men, which often leads to gender-based violence (UNICEF, 2009: [http://www.unicef.org/southafrica/hiv\\_aids\\_729.html](http://www.unicef.org/southafrica/hiv_aids_729.html)).

This illustration first came from a series of articles on the immune system, which was published in Zulu in the *Learn with Echo* newspaper supplement in September 2003 (September 11, 18, 25, October 2, and 9). Figure 32 below shows the illustrations in their original context, on the left, and as they were used in a different but similar article at a later stage, on the right:

**Ukuzivikela komzimba (The immune system)**

**Izigaba ezahlukene zengculaza**

Ngesonto eledlule ufunde ngokuthi igciwane le-HIV liwehliselwa kanjani amasosha emzimbeni ngendlela yokuqhuba umzimba ngabe usakwazi ukulwa nayo nokugula. Kuleli sonto ufundile ngizigaba ezahlukene zokuhlazisa kwegciwane le-HIV.

**1** **I-CD4 count iyindlela yokuqhuba ukuzivikela kama-CD4 cells akhona egazini umuntu. I-viral load iwukubalwa okuthi ngakumani igciwane le-HIV egazini lomuntu.**

**2** **Izigaba sokuqala: Impilo ekahe**  
Uma lisanda kumgenxa umuntu igciwane le-HIV, akukho zimpono ezibonakala ukugula. Uma umuntu oga kholola igazi, abelvi igciwane giye likhona. Lesi sikhathi sibizwa ngokuthi yi-window period. Ngalesi sikhathi umuntu uyaqala ophawwe yizinto ezifana nokhuhlane, obe nokukhatibala, ovuvukale izindlela namalunga obe bahlungu.

(Uma ubeka esithombeni usobona ukuthi ngalesi sikhathi amagciwane aganda abuye anciphe. Nama-cells e-CD4 ayancipha, kubuye kube ngcono.)

**3** **Izigaba sesibili: Impilo ayiseyinhlle kahle**  
Umuntu usobukeka ephila koda uyaqala anciphe. Kuleli sikhathi ugwagwele ukugula, amasosha ezibambeni nezindaba emlengeni. Umuntu uzizwa ekhatibele futhi oye ngokuya ephelileyo amandla.

**4** **Izigaba sesine: Ukugula kakhulu**  
Kuleli sigaba umuntu usacile kanti usephuthwa izifo ezinhlolobhobo. Umuntu usakwa izifo sobado nemkhuhlane. Eziningi izifo zizo ziyamphutha: i-TB, kungaba ngamaphaphu noma eyizinye izifo zomzimba; umphimbo nomamisa (pipe from the throat to the stomach) uba nezindaba; i-pneumonia ewulobho okhanyayo; izifo zezikhumba; kanye nezikhatho ezikhatho zemidlomo. Ngalesi sikhathi igciwane le-HIV landa ngokushesha egazini kanti ama-cells e-CD4 ancipha kakhulu. Uma umuntu ewekile sigaba usuke eme-AIDS.

**Ngemoto elizayo: Izifo eziningana umuntu omele-HIV ayizizi kahle izikhatho ezide.**

Learn with Echo 648 2 October 2003

**Amakhambi okulwa nengculaza Anti-retroviral treatment**

**Izigaba zokuhlazisa kwe-HIV**

**Odokotela bathi zine izigaba zokuhlazisa kwe-HIV.**

**1** **Isigaba 1**  
Kuncane noma akukho ukugula

**2** **Isigaba 2**  
Izinkingi zokhumba, umkhuhlane nokuzana

**3** **Isigaba 3**  
Ukuzana, ubuso, imfiva, ukugula, izifo zamaphaphu njenge-pneumonia ne-TB

**4** **Isigaba 4**  
Izifo zamaphaphu zigqibhela, izindaba emlengeni, izifo sobado namaphaphu kwimaphaphu (njengezindaba), ukusangana; ubuso elube; nomadivava. Zonke izifo zibizwa ngokuthi zizo ziyagula.

**Ukubala amasosha (CD4) nengciwane le-HIV egazini**

Odokotela bayaqhuba igazi ukuze bazi ukuthi umuntu ukuphi izigaba. Bayawukala amasosha (CD4) egazini. Loku kubalwa kuthiwa yi 'CD4 count'.

Bayabhalisa ubungakanani be-HIV egazini. Ubungakanani bawo buthiwa yi 'viral load'.

Umuntu onengciwane eliningi unamasosha (CD4) amabutha. Lokhu kuthi igciwane seligqina futhi nezibulala ngokushesha amasosha.

**Zine izigaba zokuhlazisa kwe-HIV eziphikelele ekubeni nengculaza:**

I-CD4 count iyindlela yokuqhuba ukuzivikela kama-CD4 cells akhona egazini lomuntu. I-viral load iwukubalwa okuthi ngakumani igciwane le-HIV egazini lomuntu.

**Ngemoto elizayo: Umthetho wamakhambi egazini naseamasosha**

Learn with Echo 729 30 June 2005

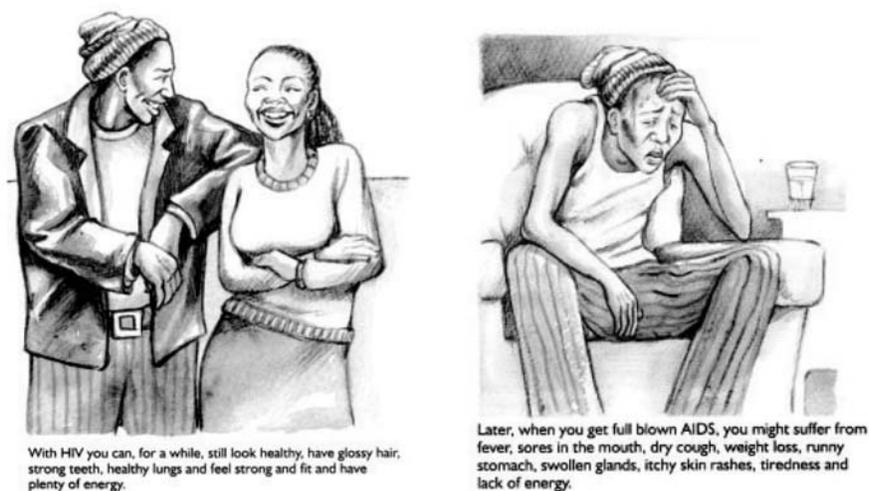
Figure 32. Illustration 1A: Stages of HIV in *Learn with Echo*

Most of the information for these series had come from a medical doctor working in the communicable diseases clinic at Edendale Hospital, Pietermaritzburg, who shared the information she needed to communicate to patients who tested positive for HIV and needed ‘treatment literacy’ training. The four pictures of the couple were used in part 4 of the first series, to depict the four stages of HIV infection, as opportunistic infections worsen and lead to AIDS in Stage Four. In these materials each picture had its own text explaining the common symptoms at each stage, from no symptoms in Stage One, to gradual weight loss and progressively more serious infections and health problems at Stages Two and Three, and then serious illness with many infections at Stage Four.

As previously explained, for the purposes of this study the illustrations were removed from their context of text and other diagrams in order to attempt an assessment of the pictorial mode of communication alone, without “anchorage” (Barthes, 1977: 39). In this instance, the four pictures of the couple were placed in frames and in a sequence that was intended to be ‘read’ from left to right across the page. This introduced the opportunity to use, or test the effects of, additional conventions from picture stories or comics, where the viewer needs to read a series of pictures in sequence to correctly follow a narrative and hopefully understand the intended meaning (McCloud, 1993: 70).

### **The source of Illustration 1B: Stages of HIV**

The two pictures in Illustration 1B are based on illustrations from a New Readers Publishers book on HIV/AIDS called *What if it's me? Help with AIDS* (Annecke & Madlala, 2006). The original illustrations can be seen in Figure 33 below, where in one picture a man is seen happy and healthy with a female companion, and in a second picture he is alone, looking unwell – tired, weak and thin. Like Illustration 1A discussed above, the intention here is to depict the progression from health to illness caused by HIV infection. The two pictures intend to show the effect the disease has on one's life, rather than depicting detailed symptoms of HIV/AIDS in a decontextualised manner, for in fact different people present with different ailments brought on by AIDS (Lyster, 1995).



**Figure 33. Illustrations from *What if it's me? Help with AIDS***

I adapted these illustrations to make the style the same as the other illustrations in Set One, that is, black and white line drawing. This was done to try and make sure the focus remained on the

different approaches to the same content, and to avoid participants' interpretations being based on different artistic styles. The original New Readers Publishers illustrations were done in greyscale tones, in what appears to be a combination of ink wash and pencil. My version was done in black ink pen, and I changed the composition so that no parts of the figures or objects were cropped by the picture frame. In redrawing the first picture, I decided to place the man's arm around the woman's shoulders, in an attempt to suggest an intimate relationship. For the second picture, I kept the figure in the same pose as the original second illustration, with the man's head resting on his hand, and elbow resting on knee, as though he is now too weak to hold himself up.

### The source of Illustration 1C: Stages of HIV

Illustration 1C was developed after consulting the same medical doctor with whom I had previously worked when developing the *Learn with Echo* series on the immune system mentioned above. She showed me ways that she used to explain the progression of HIV/AIDS infection to patients at the Edendale Hospital Communicable Diseases Clinic (CDC). For example, the diagram in Figure 34 below, (also seen in context in Figure 32), was described as a way of depicting how the viral load of HIV in the blood increases as the patient's CD4 count falls (a low CD4 count is one of the indicators of AIDS). The dotted lines indicate the different stages of HIV infection. I had decided not to use this diagram in my study, as I felt it was too complex and abstract, working almost as a graph with words.

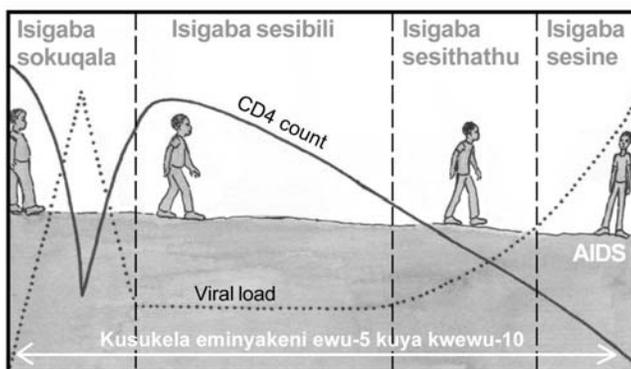


Figure 34. How HIV affects the immune system

In our discussion on ways to explain the stages of HIV infection, the doctor sketched a road which has paths leading off it at four stages, as it goes down from left to right. At the fourth stage the road forks, leading up to the clinic or further down to a sick bed (AIDS). A person

walks along the road and at each of the four paths he or she may go to the clinic for diagnosis and appropriate medical care. The critical part is stage four, where unless the road to the clinic (and antiretroviral treatment) is taken, the person will almost certainly succumb to opportunistic infections. Bearing in mind that this concept was taken from patient counselling situations, as a rough sketch drawn and used during discussions or training, it seemed interesting to test it in the context of this research because the road concept offered a metaphor to explain the stages of HIV.

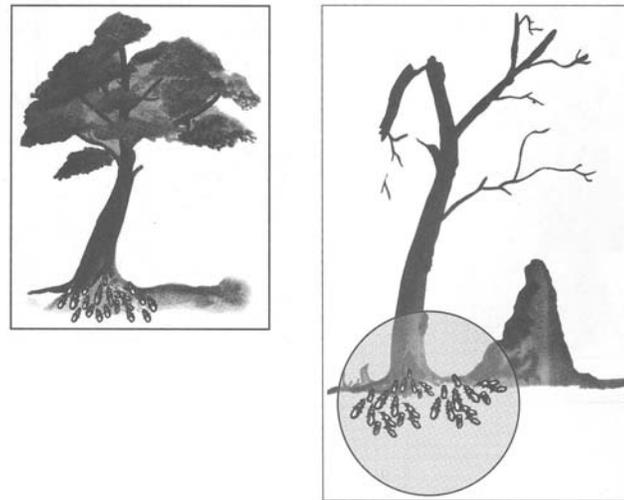
Before I spoke to the doctor about this, I had considered other options, of illustrations that tried to convey a similar message but in a more symbolic manner, using visual metaphors. The PATH/FHI manual, *Developing Materials for HIV/AIDS/STIs for Low-Literate Audiences* (2002: 48) shows two such examples, from India and Ethiopia. The illustration from India, Figure 35, shows several pictures of a man and a coconut palm tree. The different pictures intend to show that the man weakens and finally dies, as the tree matures:



**Figure 35. HIV-positive man with coconut palm (PATH/FHI 2002)**

The tree was used because audiences understood that an average coconut palm tree takes six years to grow to fruition. This matched the average time that it took in the region at that time for a healthy infected person to die from AIDS-related illnesses (PATH/FHI, 2002: 48).

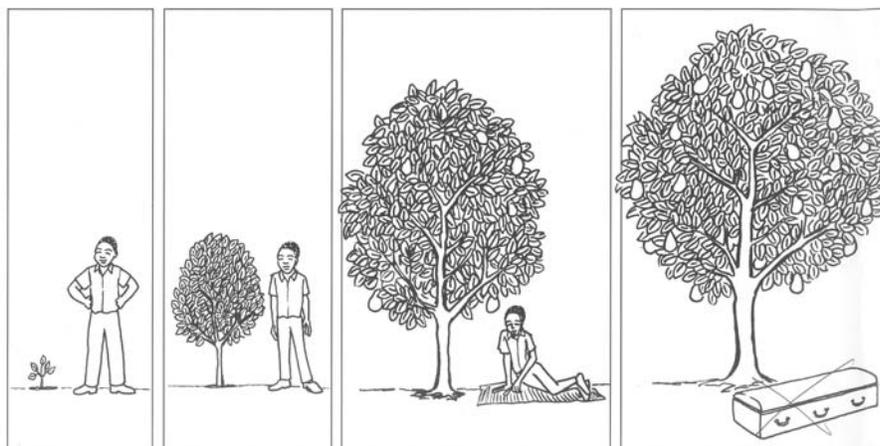
The other example of a metaphor, from Ethiopia, shows a tree being eaten by termites from the inside, so that the problem is not visible from the outside (Figure 36).



**Figure 36. The termites metaphor for HIV (PATH/FHI 2002)**

This type of tree is known for being very strong, growing slowly, and being capable of growing back very quickly if damaged or cut. Audiences ... could relate to the concept of this particular tree looking healthy even as it was being destroyed slowly by termites, just like a human carrier of HIV (PATH/FHI, 2002: 48).

I tried to replicate these illustrations, for the sake of this study only, by making several pictures of a person with a growing tree, and as the tree grew bigger I tried to show that the person became sicker, ending with a coffin under the tree instead of the person.

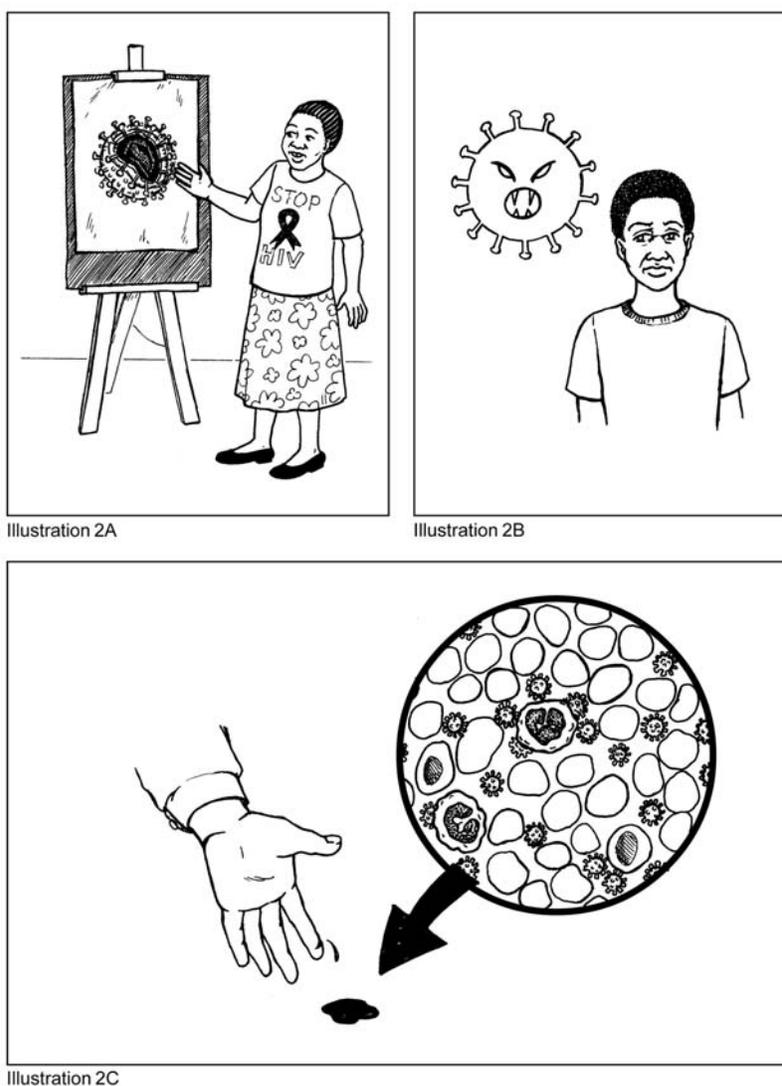


**Figure 37. Rejected illustration of the stages of HIV**

I showed all three of the above illustrations, my own (Figure 37) and those from PATH/FHI (Figures 35 and 36), to members of the Springs of Hope HIV support group, for their comments. My version was rejected outright, mainly due to the inclusion of the coffin to suggest death. This rejection should not have surprised me, as support group members are focused on living positively with the virus, and some in the group have been living with HIV for decades. Their focus was on life, not death, and I realised that perhaps scare tactics (such as pictures of coffins) belong to the crude prevention campaigns of the past. The support group members found it difficult to relate to the metaphor of the Indian ‘growing palm tree’ illustration, and while they marginally preferred the Ethiopian ‘healthy-looking tree infested with termites’, no clear positive reaction was shown. However, the support group members expressed enthusiasm when shown a version of the doctor’s ‘road to AIDS’ and I was thus encouraged to include it in the study.

In creating the final illustration, some details were added which I hoped would aid comprehension: the numbers 1, 2, 3 and 4 (referring to the Stages of HIV) at each path from the main road to the clinic were each depicted on a road sign. To reinforce the road concept, a horizon line was included with some simple background detail suggesting trees and houses, to create a landscape context for the road and clinic building. The building had a cross on a sign next to it, to signify a healthcare facility, and I was interested to see if this might signify a church to some participants. There is a figure at the different stages along the road, intended to be the same figure looking weaker at the later stages. He is in bed at the bottom, after Stage 4, to show how very ill he is, partly because of the support group’s rejection of the coffin or other images of death. Of course the man is not meant to be literally lying out of doors in a bed, no more than those infected with HIV are literally walking along a road with actual turnoffs at each stage. All these elements do make for a strange mix of concepts, iconic and symbolic depictions, and odd spatial proportions, making it the sort of illustration which has been described as the “complicated interplay of visual elements and conventions, ranging from highly analogous ... to highly abstract ... with different degrees of analogy and abstractness in between” (Carstens et al., 2006: 224).

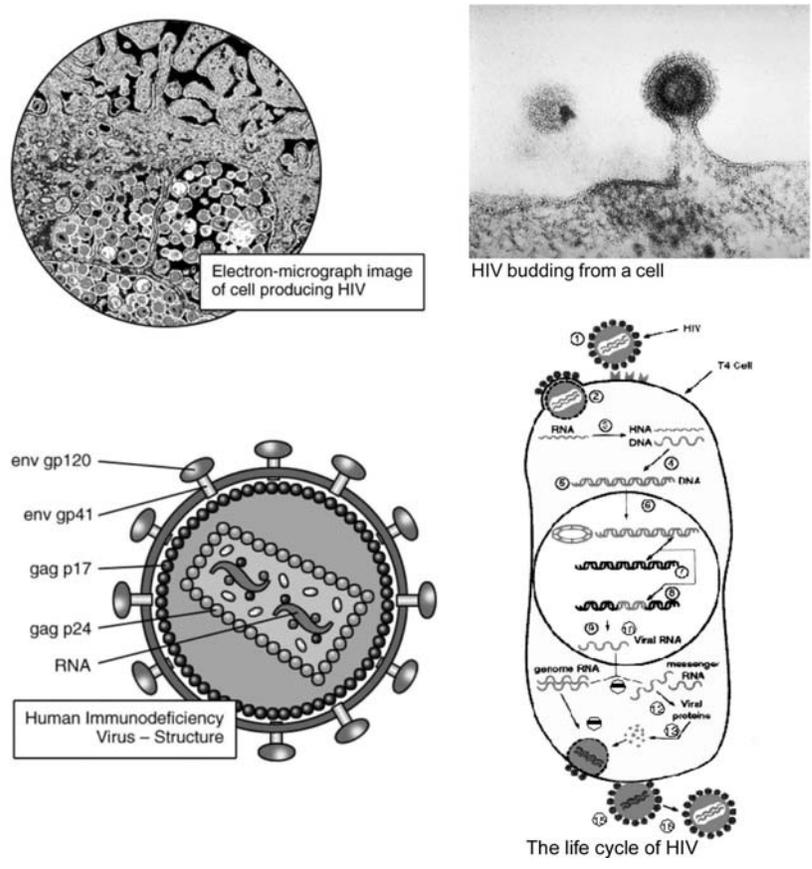
## Set 2: The HIV virus



**Figure 38. Set 2: The HIV virus**

In practical terms, the purpose of depicting the virus is not to create an accurate visual representation, as it is not critical for people to be able to identify by appearance something never ordinarily visible due to its microscopic size. However, a variety of depictions of the virus' structure and outward appearance are used in “treatment literacy” materials and training programmes, to aid conceptual understanding of the manner and speed with which HIV reproduces itself in the body and the implications this has for strict adherence to treatment (Treatment Action Campaign, 2007: 5, 9). The same doctor who provided information for the *Learn with Echo* articles and two of the illustrations in Set 1 (Figure 31, above) emphasized that every time a patient skips or delays one dose of their antiretroviral drugs (ARVs), the virus has

the opportunity to replicate itself at incredible speed, and is more likely to develop drug resistance. Patients who understand how HIV uses the body’s own cells to replicate are more likely to take their medicine correctly, and various depictions of the virus itself, and of cells, are helpful in explaining these things.



**Figure 39. Images and diagrams of HIV (AVERT, 2011; TheBody.com, 2011)**

In pre-testing, it was clear that out-of-context images of the virus, such as those in Figure 39, above, were extremely likely to be simply incomprehensible. Therefore, it seemed interesting for this research to use illustrations that tried to create some recognisable context or object to represent or evoke the virus HIV for the average viewer.

**Source of Illustration 2A: The HIV virus**

Illustration 2A was created specifically for this study. It shows a woman standing next to a board, gesturing to a paper with a typical drawing of the virus on it. As a visual cue, the woman wears a T-shirt with the slogan ‘Stop HIV’ and a ribbon that is supposed to suggest the red ‘AIDS ribbon’ symbol. The illustration shows a depiction of the virus by contextualising it in the familiar life situation of a workshop or training session where indeed such a depiction may be

used. This is line with Carstens' suggestion that "perhaps more cues should be included in education materials to keep the viewer focused on the main theme, for example, using an AIDS ribbon on the clothes of a person who looks healthy but should be interpreted as a person with HIV." (Carstens, 2004a: 21)

### **Source of Illustration 2B: The HIV virus**

Illustration 2B (see Figure 38, top right) is a depiction of a man worrying about HIV, which is symbolised by a scary monster (with a virus-like shape). This is a metaphor, personifying the virus as a monstrous presence, which weighs on one's mind.

This illustration is an adaptation of Figure 40, below, an illustration from Nepal which I found in a manual, *Developing Materials on HIV/AIDS/STIs for Low-Literate Audiences* (PATH/FHI, 2002: 51). The original illustration depicts a man, looking serious and thoughtful, with a large, detailed depiction of the virus hovering near his head, as he contemplates his HIV status. In other words, the virus is there to show what he is thinking about, almost like a thought balloon. Both the outside surface and the inside structure of the virus are depicted, in graphic style which seems both naturalistic yet also abstract/conceptual.



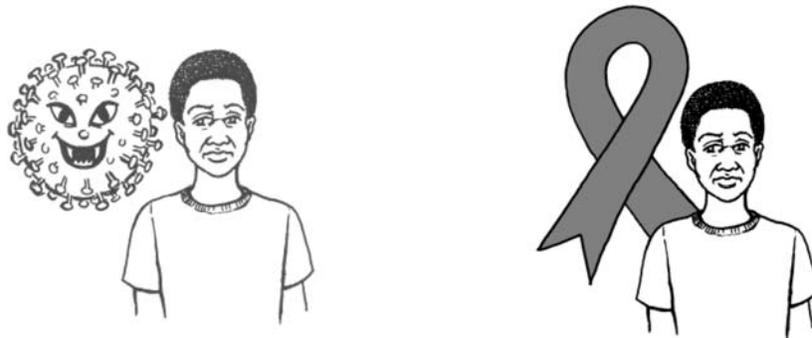
**Figure 40. A man contemplating his HIV status (in PATH/FHI, 2002)**

Illustration 2B was recreated for the purposes of this research so that the man would look more African and wear less culturally specific clothing. It was further adapted according to feedback from members of the Springs of Hope HIV support group who recommended that the virus should look like a "scary monster". The depiction of HIV through the metaphor of a monster is not unusual, for example, the illustration from a Department of Health pamphlet below (Figure 41), which has much in common with the Nepalese illustration in Figure 40:



**Figure 41. Couple worrying about HIV (in Carstens, 2004: 18)**

I showed the support group members several options that I was considering for my version, including those in the figure below. They suggested the monster needed to look “more scary, more ugly”.



**Figure 42. Early versions of Illustration 2B: The HIV virus**

### **Source of Illustration 2C: HIV**

Illustration 2C (Figure 38, bottom) shows a hand with a cut on the finger, bleeding, with a drop or patch of blood coming from the cut. An arrow points to a circular shape containing a simplified representation of an enlarged, microscope-type image of different types of blood cells and HIV virus shapes.

Illustration 2C appeared originally in the same educational material as illustration 1A, a series of articles on the immune system which was published in *Learn with Echo* (Issue no. 646, September 18, 2003). This illustration was accompanied by text in Zulu, the mother-tongue of the target audience. It is visually and conceptually demanding, attempting to show the reality of

something that cannot be seen with the naked eye. It conflates different types of representation to depict in simplified terms the literal context of where HIV is found, and attempts to show both what can be seen (blood) and what can be known but not seen (what blood is made of). At the outset, when creating the illustration for use in the *Learn with Echo* supplement, I suspected that it might be misinterpreted or ignored by many readers due its unfamiliar nature. I rationalised this by arguing that the only way to learn to interpret a wider range of pictorial conventions is to be exposed to them, and that a potentially problematic illustration was better than no illustration at all.

**Ukuzivikela komzimba (The immune system)**

**Indlela umzimba wakho olwa ngayo nezifo ngaphakathi**

**2**

**Ngesonto eledule sikwazise ngokuthi isikhumba, ikhala, amehlo nomlomo kukusiza kanjani ukuvimbela amagciwane ukuze angangeni ngaphakathi emzimbeni. Kodwa kuyenzeka amagciwane angene ngaphakathi emzimbeni. gilesi sikhathi-ke izivikeli-mzimba esingaziboni eziqala ngaso ukunqanda amagciwane ukuthi angenzi umzimba ugule.**

**Izivikelimzimba ezisegazini**  
 Igazi lakhiwe ngamanzi kanye nama-cells egazi. Igazi linombala obomvu ngoba ama-cells amaningi egazini abomvu. Ama-cells abomvu asiza kakhulu ekuthutheni umoya esiwuphefumulayo uye emzimbeni wonke. Amanye ama-cells asegazini siwabiza ngokuthi ama-white blood cells ngoba awabomvu kodwa asamanzi. Yiwo lama-cells amhlophe asebenza ukuvikela imizimba yethu. Siwabiza ngokuthi amasosha omzimba.

**Uma singabuka igazi eduzane singabona lokhu:**

**La masosha egazi amhlophe ayizinhlobo ezahlukene. Uma ehlasela amagciwane ahlasele ngezindlela ezingafani.**

Amanye ayawadla amagciwane.	Amanye adla udoti oqhamuka emagciwaneni.	Amanye abulala ama-cells asengenwe igciwane kanti amanye akhiqiza izivikela-mzimba.
-----------------------------	--	---

Uhlobo olubaluleke kakhulu lwamasosha egazi amhlophe lubizwa ngokuthi ama-CD4 cells. La ma-cells asiza amanye ukuthi asebenze kahle. Asiza ngokuthi atshele amanye ama-cells ukuthi enzeni ukuze kuliwe namagciwane. Singawafanisa nosigaxamabhande bempi esegazini yokulwa namagciwane. Uma engasebenzi kahle amaCD4, amanye ama-cells egazi ngeke akwazi ukulwa namagciwane ngendlela efanele.

**Ngesonto elizayo: Igciwane le-HIV liwahlasela kanjani amasosha omzimba**

**Figure 43. Learn with Echo article on the immune system**

### Set 3: Safety for caregivers



Figure 44. Set 3: Safety for caregivers

#### Source of Illustration 3A: Safety for caregivers

This illustration originally appeared in an article in the *Learn with Echo* newspaper supplement, about the precautions which caregivers should use if they are nursing a person who is sick with HIV/AIDS related illnesses. The article was about the importance of washing hands with soap and water (top picture), the need to wear gloves or plastic packets on the hands when washing people or laundry soiled with body fluids (middle picture), and about keeping cuts or sores

covered with plasters to prevent cross infection (bottom picture). I was interested in how the participants would interpret the cropped, disembodied hands and other objects.



Figure 45. *Learn with Echo* No. 724 May 19, 2005

### Source of Illustration 3B: Safety for caregivers

Illustration 3B was created as an alternative to Illustration 3A, showing objects on their own: a bar of soap, gloves, and a plaster. These objects also appeared originally in the *Learn with Echo* article seen in Figure 45, above.

I was interested in what the objects would mean to participants, and if they would be recognised at all. The word 'soap' introduced a verbal element to the top picture, partly as a form of anchorage, but also because different brands of soap do often have an imprinted word or logo. I was interested in whether this would be noticed or understood by the participants.

### Source of Illustration 3C: Safety for caregivers

Illustration 3C was created especially for this research, to provide a more embodied, natural depiction of a woman putting on gloves.

### Source of Illustration 3D: Safety for caregivers

Illustration 3D was, like Illustration 3C, created for this research. I used the same figure of a woman putting on gloves and placed her in a caregiving context with a patient and objects which I imagined participants might recognise as being related to the various tasks involved with caring for a sick person. I was interested in whether the added detail would attract attention away from the gloves or enhance participants' interpretations.

### Set 4: Internal organs – The digestive system

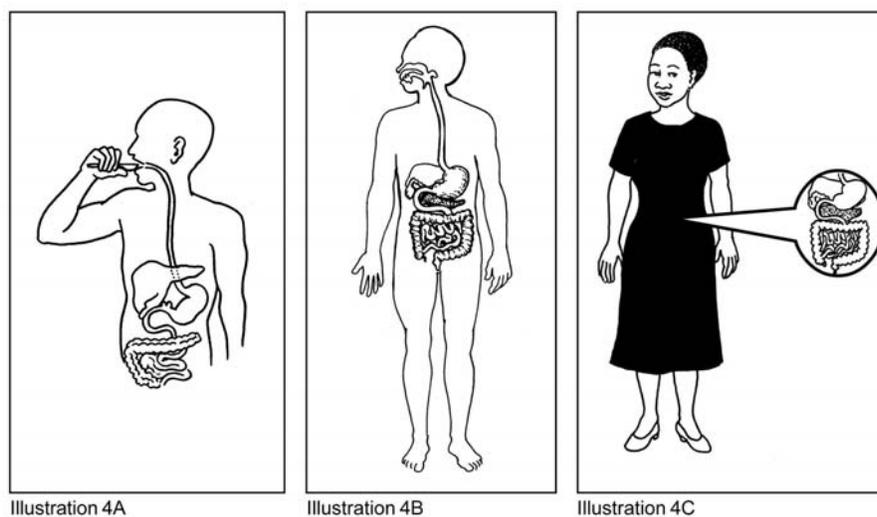
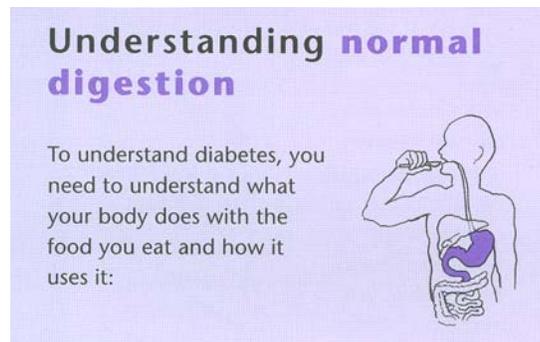


Figure 46. Set 4: Internal organs – The digestive system

### Source of Illustration 4A: Internal organs

Illustration 4A in this set was adapted from a diabetes education pamphlet, *News on Nutrition: Understanding Diabetes*, produced by the Nutrition Department of the South African Sugar Association. Below is the original illustration in context. It intends to show where food goes after it is put into a person's mouth. It is accompanied by text explaining how the body processes food. Thus the message of this particular illustration is not about diabetes, but is one part of a longer message about that disease.



**Figure 47. Illustration from pamphlet on diabetes**

I had wondered how low-literate audiences would interpret the cross-section depiction of the internal organs, and also whether the partial figure outline, with an incomplete arm and lower half might not pose difficulties.

#### **Source of Illustration 4B: Internal organs – The digestive system**

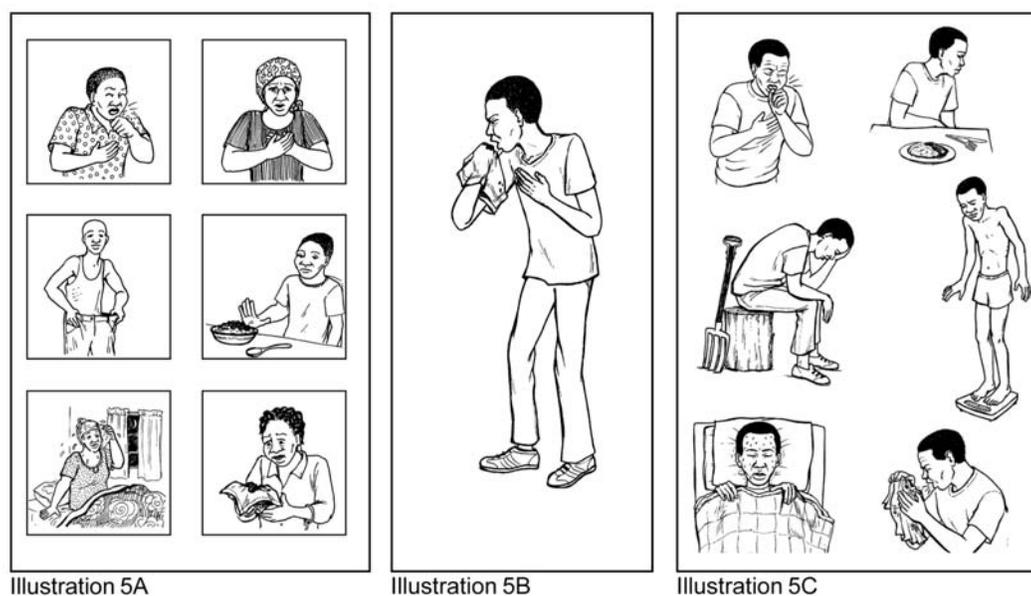
I developed Illustration 4B (Figure 46, middle) as a completed figure outline, as a contrast to the Illustration 4A. It also differs in that I did not think to make this figure also raising a spoon to its mouth, a limitation perhaps. I was interested in whether the full body outline might make the illustration any easier to interpret.

#### **Source of Illustration 4C: Internal organs – The digestive system**

Illustration 4C tries the approach of depicting a clothed, ‘closed’ person, but using a “graphical device” (Boling et al., 2004) similar to a speech balloon or thought bubble to include the internal organs separately but pointing to the stomach area of the woman to show that ‘this is what is inside’. Another limitation here may be that the other two outline figures (4A and 4B) are not gendered, but the shape in illustration 4B is quite masculine in build, with broader shoulders, for example. The possible effect of this is discussed with reference to the participants’ responses to illustration C in particular.

As explained, Illustration 4C is rather different from 4A and 4B in that it shows a clothed woman. In other words, the figure is more of a naturalistic icon than the other two more conceptual depictions, yet it retains a diagrammatic, abstract element with the insert of the ‘balloon’ containing the digestive system and pointing to her ‘tummy’.

## Set 5: TB symptoms



**Figure 48. Set 5: TB symptoms**

The three illustrations in this set are all ‘realistic’ depictions, in that they show things as we would see them, for example the people are shown from the outside and not in cross-section as the figures appear in illustrations 4A and 4B. The style is fairly simple but not abstract. The similar content of the three illustrations is approached differently in terms of how it is arranged or grouped.

It was particularly with this set of illustrations that I found I had more data to analyse than I planned, finding I would have to analyse the responses to each individual picture that made up illustrations A and C. In other words what I had thought of as three illustrations actually comprised 13 individual pictures which the participants responded to. Thus I made a table on which to condense the data for each individual picture in illustrations A and C.

### **Source of Illustration 5A: TB Symptoms**

Illustration 5A was an existing illustration I had created for an article on TB for the *Learn with Echo* newspaper supplement (15 June 2006 page 3 – see Figure 49 below).



Figure 49. Article on TB from *Learn with Echo* No. 775 June 15, 2006

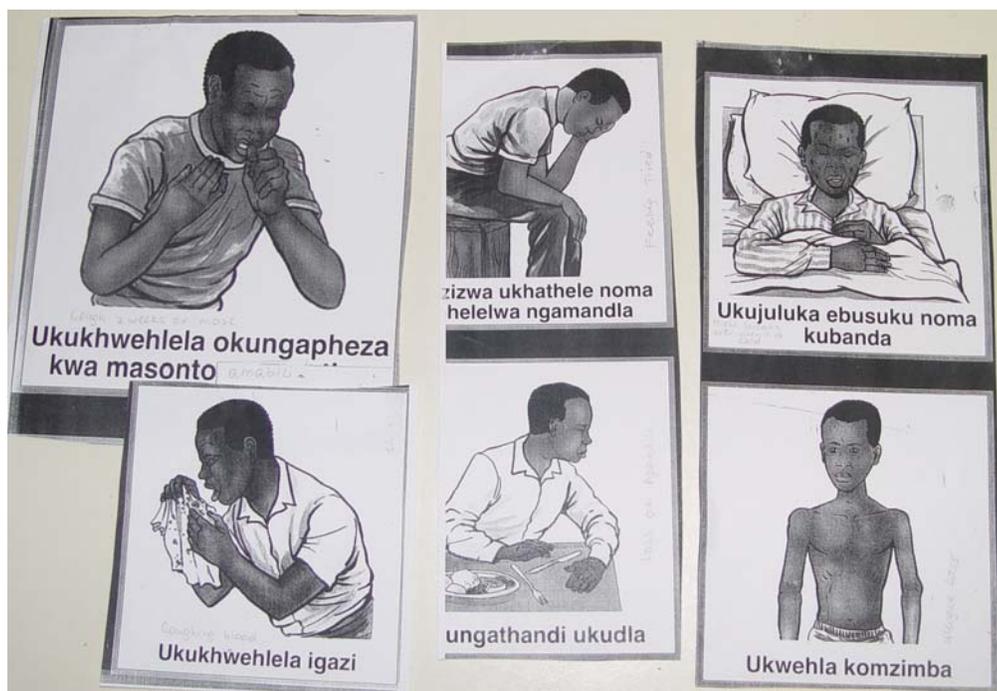
It consisted of six frames, each showing a different person with a TB symptom. My rationale for showing a different person in each frame had been to show that all people are all at risk of this illness, and also that one could have TB without showing all the symptoms at once. I was not sure if this was a successful illustration or not. I wondered whether the frames would be ‘read’ as relating to each other, or as being about the same thing, or one illness, and whether the use of different people would affect this.

### Source of Illustration 5C: TB symptoms

Here I discuss the source of illustration 5C before that of 5B, because 5B was developed after 5C, which I will explain below.

I had seen illustrations similar to 5A which used one person in all the pictures/frames, as seen in Figure 50 below. I made a new set of illustrations based on these, also showing a young man with TB symptoms. I copied the poses, thus reproducing the illustrations from elsewhere in a

similar style to my own set of illustrations. I made few changes, in that I introduced a scale to the picture which intended to show weight loss, and a garden fork to the picture which intended to show fatigue. Unfortunately the original illustrations were old photocopies which had been cut out, with no source information on them, so I am unable to acknowledge their exact source. They had Zulu text and appear to have been in colour from a TB education pamphlet or booklet.



**Figure 50. Photocopied illustrations for Set 5: TB symptoms (source unknown)**

My version of these illustrations became Illustration 5C. I further differentiated 5C from Illustration 5A by not using frames (‘box’ outlines) to separate the individual pictures of the young man, to see whether this would affect the participants’ interpretations at all. I wondered whether they would find it easier to link the six pictures as being part of one message, or think the man was six different figures in one landscape.

#### **Source of Illustration 5B: TB Symptoms**

Illustration 5B (Figure 48, middle) tries to amalgamate the symptoms of TB into one figure, which is supposed to look thin, tired and sick, coughing up blood and with a sore chest. I based this figure on the young man depicted in all the pictures in Illustration 5C.

## Set 6: Artistic techniques



Illustration 6A: Line drawing



Illustration 6B: Ink wash tones



Illustration 6C: Line drawing with cross-hatching shading/modelling



Illustration 6D: Line drawing with flat greyscale fill

**Figure 51. Set 6: Artistic techniques**

The four illustrations in this set (Figure 51) have the same content and composition, based on an old photograph of a doctor with a stethoscope attending to a child held by her mother/granny/caregiver (Figure 52). I found the photograph amongst the *Learn with Echo* photographs from the early days of the project before I worked there. I do not know if it was ever published or not.

The illustrating techniques used in my different versions can be described as follows:

- Illustration 6A: Line drawing
- Illustration 6B: Ink wash with greyscale tones
- Illustration 6C: Line drawing with cross-hatching shading/modelling
- Illustration 6D: Line drawing with flat greyscale fill added later in Photoshop



**Figure 52. Photograph of a doctor examining a child**

I produced the illustrations in different styles using the same composition as this photograph because it contained interesting compositional elements. Firstly, the three figures are only partially depicted due to being cropped, or ‘cut off’ by the rectangular picture format, and by occlusion, where the woman’s figure overlaps most of the child’s. The woman’s arm is foreshortened, which could be misinterpreted as a deformed limb. Her head, seen from the back, appears to be mostly hat, with only a little of her facial profile visible to the viewer. There is no background detail to detract from (or enhance?) the subject of the illustration. Although the man’s clothes and stethoscope seemed likely to identify him as a doctor, the white doctor’s ‘safari suit’ is very old fashioned (it being quite an old photograph) and the stethoscope is possibly not as clear in the illustrations as it is in the photograph. Thus I was interested in whether such details would be noticed, and how the participants might interpret other aspects, such as, what the adults were doing, and the child’s facial expression.

There was also the matter of skin tone and the several possible ways of suggesting this, depending on the style of rendering, from outline with no colours suggested at all (A), crosshatched lines (B), to graduated shading (C), and the flat greyscale-filled outlined version (D). One of the “don’ts” on what Sejake (1993: 3) calls the “infamous list” of conventional guidelines for “illustrating for an illiterate audience” is to limit tone on skins, which may be misinterpreted as a “physical disorder” or scars, in the case of crosshatched lines (MacDonald, 1991). To sum up, the composition and content of this photograph seemed to supply plenty of scope for testing compositional elements and stylistic techniques that had often been suggested to be more likely to pose interpretation problems for low-literate viewers.

At first I had thought I would include the source photograph in the set to be tested, however, the research is really about illustrations drawn by hand, and I decided not to introduce the very

different medium of photography to the mix. Photographs have been found to be popular and sometimes easier to interpret, especially if the background is removed or kept very simple (Fuglesang, 1973: 93; Sejake, 1993: 23). However, Barthes notes that the extreme similarity of photographs to the appearance of reality gives them “special status” (1977: 17) apart from other images, and that the photograph “by virtue of its absolutely analogical nature, seems to constitute a message without a code.” (1977: 17, 42-43) My study is mainly concerned with illustrations for situations when photographs are not feasible or are not capable of depicting the information that needs to be communicated, such as internal organs or particular physical processes and symptoms.

### Set 7: Levels of stylization

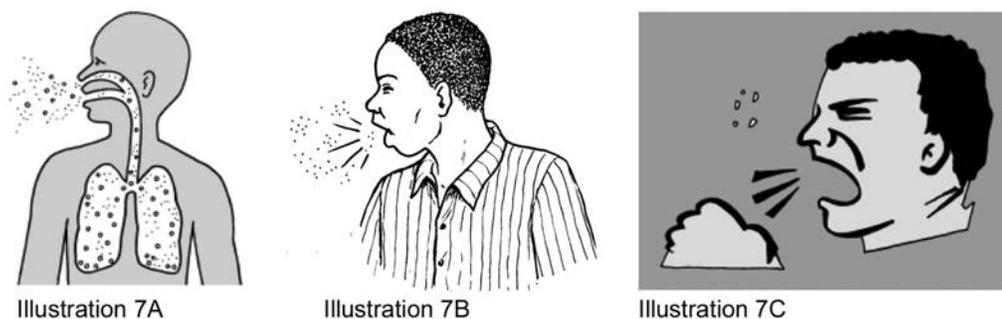
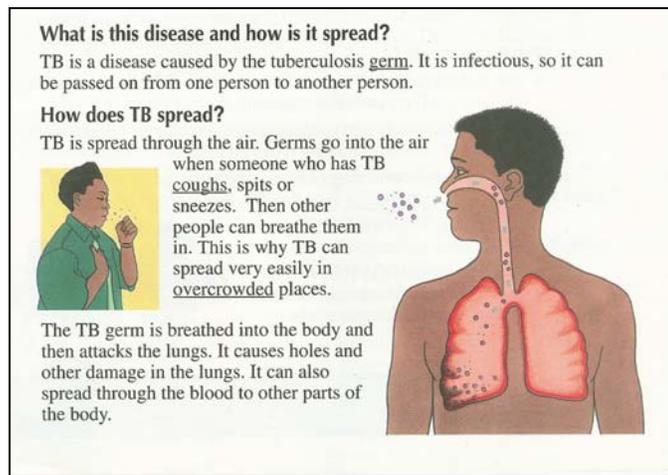


Figure 53. Set 7: Levels of stylization

Set 7 consisted of three illustrations, 7A, 7B, and 7C, seen above in Figure 53. Essentially, this set consists of: a diagrammatic, conceptual depiction of an open mouthed person showing an internal view of the lungs (7A), a more analogical depiction of someone coughing (7B), and a very stylized depiction of an external view of coughing (7C). All three illustrations have dots and/or small shapes which are meant to show germs or saliva particles which leave (or enter) the body through the mouth through coughing and sneezing. Illustration 7C has a ‘hand’ shape and sharp black ‘line’ shaped “graphical devices” to show the action of coughing (Boling et al., 2004).

### Source of Illustrations 7A

Illustration 7A was adapted from an illustration in a TB pamphlet. Unfortunately the exact source illustration is not available for inclusion; however, it was very similar to the illustration on the right in Figure 54, immediately below, which is from a Soul City booklet on TB, *Your health and TB* (Institute of Urban Primary Health Care/Jacana Education, undated).



**Figure 54. Illustrations from page 16 of the Soul City booklet *Your health and TB***

### **Source of Illustration 7B**

Illustration 7B (see Figure 53, middle) was developed by me specifically for this research as an alternative depiction to 7A and 7C. It was intended to be more realistic in style than the others.

### **Source of Illustration 7C**

Illustration 7C was adapted from a pamphlet on TB, called *TB – The basic facts for everyone*, produced by Sandoz. One side of the pamphlet is seen in Figure 55, below. I had particular concerns about the level of stylization of the coughing head depicted at point ‘4’ of the pamphlet, believing this style likely to be inappropriate for use in an educational pamphlet of this nature.

My adaptations of the illustrations were slightly different in that they used greyscale tones instead of a variety of flat colours. The same reasons which led me to exclude the photograph discussed above, applied here. I felt that introducing colour would be to include an additional potentially complicating element to this study, and this is something better explored with more focus on its own.

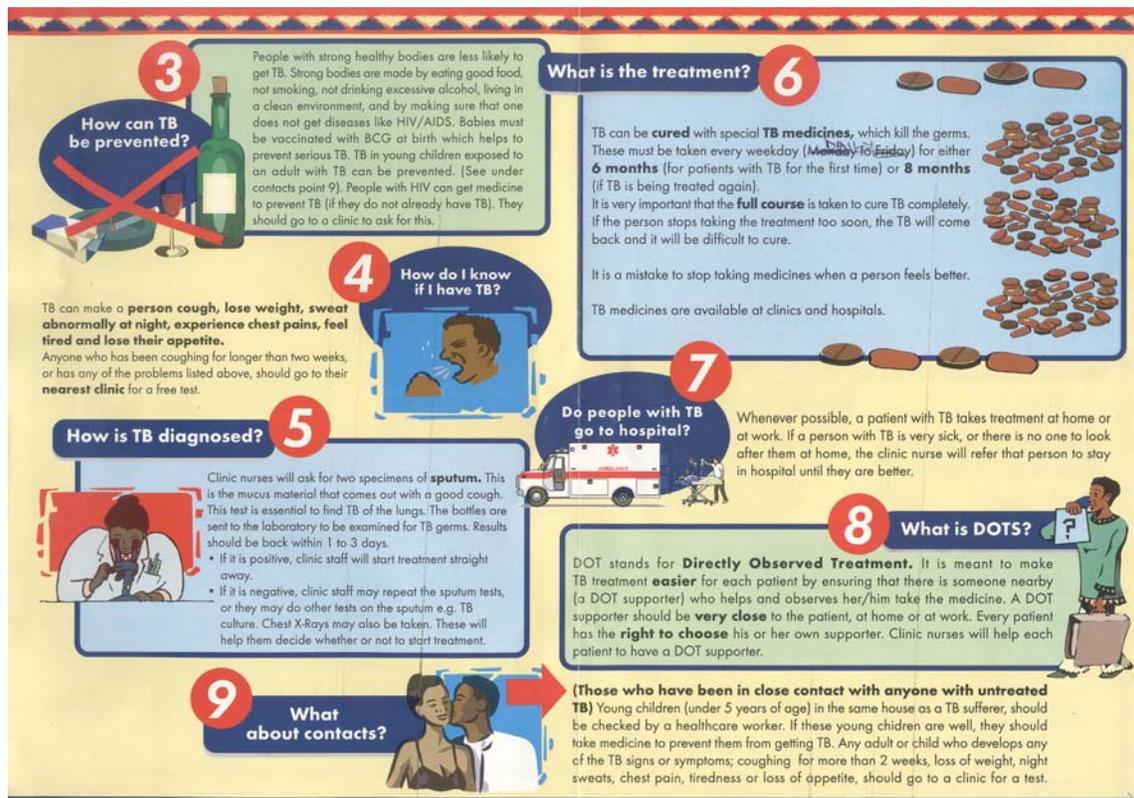


Figure 55. Pamphlet TB – The basic facts for everyone by Sandoz

I had several other concerns about the design of this pamphlet, and the way the design elements of colour, layout and graphic styles seemed more likely to confuse a less-than-skilled reader rather than help him or her to navigate the text and access the intended information. For example, the numbering of the different sections on the above page does not follow a consistent layout rationale across the two facing pages, and the questions do not always precede the answers in visual, layout terms. The verbal text also warrants examination; for example, one wonders what a low-literate second- or third language reader might interpret from the term “a good cough” (see point 5 of the pamphlet, above). The pamphlet in Figure 55 supports my view that educational materials on health are often developed by writers and design professionals who are not cognisant of the educational needs of their target audience. In cases like this, expensive production in full colour seems a waste of resources.

### Set 8: Pictorial depth

Both of the illustrations in Set 8 were created especially for this study. They are seen together below, in figure 56.



Illustration 8A



Illustration 8B

**Figure 56. Set 8: Pictorial depth**

These illustrations depict the same scene. They were included in the research in order to investigate audience interpretations of different ways of depicting distance and relative size between objects in a landscape. Illustration 8B used occlusion (overlapping edges of objects) and 8A did not, relying solely on proportional size differences between objects to suggest space or distance. For example, the man in the middle distance is the same height as the child in the foreground, and the cow in the background is the same size as the dog in the middle distance. This aspect of my research was inspired in part by previous studies which investigated ‘depth perception’ among viewers of different literacy levels and across cultural groups, such as the Hudson test discussed in the previous chapter (see also Fuglesang, 1973: 84; Hoffmann, 2000: 136; Linney, 1995: 24; Messaris, 1997: 64).

Both of these illustrations have the same objects, or denotation, which are intended to show – from foreground to background – a woman standing, holding a broom, a younger woman with a small child, talking to the first woman and indicating where they are going, which is to the clinic in the background. This is supported by the clinic card she holds in her hand. In the middle distance is a tree, and level with it are a man and a dog, walking towards the two women. Beyond the man and dog is a building, housing a clinic which is indicated by a medical ‘cross’ sign on the roof and by its double ‘institutional’ style doors. The building also has a water tank, a common sight at schools and clinic buildings in rural areas. A simple line at the top of the picture plane is meant to suggest the horizon, the furthest distance away.

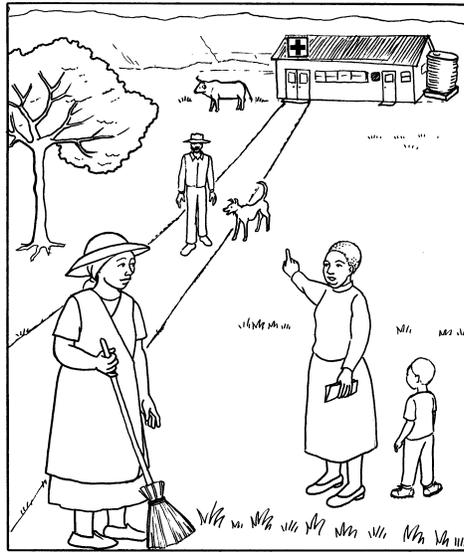
There are a few blades of grass indicated, mainly in the foreground and middle distance, so that the various figures are not completely floating in white space. I felt that more attention paid to surface texture, especially of the ground and vegetation, would help to create pictorial depth in different ways, and thus such detail was left out.

Illustration 8A suggests spatial depth in the two-dimensional pictorial space through proportional differences in the sizes of the different objects depicted. For example, the man in the middle distance is roughly the same height as the child in the foreground, and the cow in the background is about the same size as the dog in the middle distance, and the clinic is very small compared to the people in the foreground. The figures and objects each occupy their own space and their edges do not overlap.

Illustration 8B does the opposite. Exactly the same objects and figures are used, but at a larger size, and their edges do overlap. The result is several of the objects or figures being partially concealed from view. The man and the little boy each have an arm almost hidden out of sight behind the women. (Note that the boy's other arm is not really visible in either version, as he was deliberately drawn at a three-quarter angle view, thus his right arm is naturally away from the viewer and out of sight.) The dog's tail and most of the cow are no longer visible. The building and tree both touch some of the figures. Such occlusion of objects is a normal part of how and what we see naturally. However, in two dimensional representations of reality, such overlap sometimes takes on an unnatural appearance, creating an optical illusion that objects are actually close together or stuck to one another. (Photographers often take advantage of this for fun, for example, by setting up a photograph of a person in the foreground who looks like they are holding the faraway rising sun in their hands.) I was interested to know whether any participants would think the boy had lost an arm, or that the man and/or the young woman were carrying some large object (the building), or that the woman with the broom might be standing under the tree.

A weakness in illustration 8B is that it still has proportional differences between the different figures and objects, like illustration 8A. The main difference really is that objects are all much bigger and are more crowded together in illustration 8B, and so this overlap versus a more open, 'white space' approach is really what was being examined here.

Initially I considered an additional version of illustration 8A, Figure 57 below, which included a straight path to the clinic, an attempt to include the element of perspective.



**Figure 57. Illustration with path, omitted from Set 8**

However, this addition looked artificial and did not fit the rest of the drawing. It also remained very similar to illustration 8A without the path, and I decided to use the other two versions which were less similar to each other. In retrospect this may have been a mistake, although had perspective lines been included a more appropriate or convincing use of that device would have been needed.

**Set 9: Background detail**



Illustration 9A



Illustration 9B

**Figure 58. Set 9: Background detail**

The original version of this illustration was Illustration 9B, the one with the background detail. It was created to illustrate an article on tuberculosis (TB) for the *Learn with Echo* adult education newspaper supplement (June 8, 2006, page 3) – see Figure 59.

The gist of the article was that TB is spread in sputum and that family members of infected people are at risk and should be tested for the illness. My intention at the time was to show how germs can spread between people, such as family members, parents and children (figures in the foreground), when people cough, sneeze and are generally close together. It is meant to suggest a public space, on a street, where people pass each other and germs can also spread, and one of the men in the background is meant to look as though he is spitting on the pavement, as people do. The intended message is that these are some of the ways germs, such as the TB bacterium, can spread.

**IMPILO Singayinqoba i-TB! 1**

## Singena kanjani isifo sofuba?

**Isifo sofuba yisifo esithathelanayo esthwalwa yigciwane elibizwa ngokuthi yi 'bacilli'. Lesi sifo sihamba kalula ngomoya. Abantu asebegula bangakuthelela uma bekhwehlela, befela izikhwehlela, bethimula noma bekhuluma. Lezi zinto zenza igciwane lofuba libhehtheke kalula njengoba sibotekana ngomoya owodwa uma siphefumula.**

Uma umuntu esenalo leli gciwane angathelela abanye abantu abaphakathi kwabayishumi kuya kwabayishumi nanhlanu ngonyaka. Kepha asebenzenwe yigciwane akusho ukuthi sebezogula ngaleso sikhathi. Isivikeli magciwane enzimbini sigalibuzela igciwane leTB bese lihala iminyaka lingabonakali. Kodwa uma isivikeli magciwane sintekenteke kumuntu, makhulu amathuba okuguliswa yilesi sifo.

Cishe ezweni lonke njalo ngomzuzu kukhona ongenwa igciwane lofuba. Ngophezu kwalokho ingxenye enkulu yabantu emhlabeni inaleli gciwane leTB. Iningi labantu okukhulungwa ngabo abanalo igciwane lesandulela ngcalaza.

Isifo sofuba esinye sezifo ezikhathaza kakhulu emhlabeni wonke jikelele. Okuhle ukuthi iTB iyelapheka. Ikhambi lofuba latholakala eminyakeni engamashumi amahlanu adule. Inkinga enkulu eyokuthi abantu abayidli ngendlela efanele imishanguzo yokwelapha iTB.

Imishanguzo kumele idliwe zonke izinsuku kuze kuphele izinyanga eziyisithupha. Ucwangingo luveza ukuthi uma abantu bengayidli imithi ngendlela efanele, inkulu ingozi yokuthi lingalopheki igciwane lofuba.



**Umsebenzi**

**Khetha igama elifanele kubakaki bese ulikokelezela:**

1. Isifo sofuba singadlulela komunye umuntu (ngokukhala; ngokukhwehlela) kogulayo.
2. Uma unesivikeli magciwane esintekenteke (kulula; kunzima) ukuguliswa yisifo sofuba.
3. Isifo sofuba (sigalopheka; astlapheki).
4. Imishanguzo yeTB kumele idliwe izinyanga (eziyishumi; eziyisithupha).
5. Kulula ukulopha iTB uma ogulayo (ethembekile; engathembekile) ekudleni imishanguzo

Ngesonto elizayo: izimpawu zesifo sofuba

Figure 59. TB article from *Learn with Echo* No. 774, June 8, 2006

At the time of making the illustration, I had my doubts about its effectiveness. One of the things I wondered about was the background: Would people notice details like the man spitting? Was I over-exaggerating by including such crude detail? Did it give the impression of a crowded street or public place at all? My hope was that viewers would notice the child between the sick adults

(the three foreground figures) and think that he was at risk of infection, because he was close to them while they were coughing. Therefore I included two versions of the illustration in the study, one with the background detail removed. Although it is categorized as a set of illustrations testing styles of depiction, one of the ways of assessing the effect of removing the background is to examine the difference this made to how participants interpreted the content, if it made any difference at all.

### **5.3 Semiotic analysis of the illustrations**

The following analysis explores the illustrator's meaning-making processes (interpretations and assumptions, some of which happened at an unconscious level) and is similar to an "expert-reading" commonly used in traditional semiotic analysis which decodes images by exploring "intended, unintended, and even merely suggested meanings" (Moriarty & Sayre, 2005: 244-245).

By demonstrating a semiotic approach to analysing the way intended meanings are constructed in these illustrations, this chapter also partially addresses question five, because it is something illustrators could do to help themselves fully understand how much of their work is based on an interpretant that is idiosyncratic, and open to interpretation. If this is done before the field testing and/or production of illustrated materials it has the potential to improve how the illustrations are produced from an early stage.

As well as demonstrating how I have applied particular semiotic concepts, it enables comparisons between the intended meanings and the participants' interpretations which are explored in the following chapters.

I have chosen to restrict my analysis to the illustrations which explored different approaches to content. There are five sets of illustrations in this group, adding up to 16 individual illustrations altogether. The rationale behind the 'content' group of illustrations (Sets 1 – 5) most lends itself to the type of semiotic analysis proposed, because interpreting the message content is the focus, rather than graphic styles. There is enough variety among the 'content' illustrations to provide plenty of scope for comparisons.

As mentioned in the methodology chapter, there are several ways to approach semiotic analysis, but most often it involves a description of the material/text to be analysed, salient points to be considered, and the identification of components and how they relate to each other and the signified object (Manning, 2004).

In this chapter, the discussion of each illustration begins with a reproduction of the illustration, and a brief statement of the intended interpretation. The intended meaning is then produced in a table format in order to unpack the content of the illustration according to the first and second order meanings of denotation and connotation. A more detailed narrative exploration of Peirce’s sign types in each illustration, and how these create/relate to the intended denotation and connotation, completes the analysis. The concepts of motivation and constraint, and syntagm also come into play.

## Set 1: Stages of HIV

### Illustration 1A: Stages of HIV



Figure 60. Illustration 1A: Stages of HIV (Couple)

#### *Intended interpretation of Illustration 1A*

This is how HIV/AIDS infection progresses. This couple starts off healthy, but then over time they get sicker and sicker because they have HIV/AIDS, which they have given to each other.

Table 1

Illustration 1A: Stages of HIV (Couple)		
Denotation	Connotation	
A man and a woman.	A couple.	They are sexual partners.
Four frames/pictures close together on one page.	Each frame is part of the same message/story, read from left to right.	Time passes.
The people wear the same clothes in each picture.	The same man and woman in all four pictures.	The man and woman are slowly getting sick.
Larger bodies and ‘neutral’ stance in picture 1 (left)	They just ‘are’, no particular condition/problem visible.	They have HIV/AIDS. They got HIV from having

Slightly smaller bodies and 'neutral' stance, <u>subtle</u> change in facial expression in picture 2 (second from left).	They have lost a little weight since the first picture. May feel a bit different, but okay.	unprotected sex. They need treatment or they will not get better.
In picture 3 (second from right), bodies much narrower, changed posture, expressions and gestures – hand on stomach, hand to mouth, lines and dots in space near mouth.	The man and woman have both lost weight and are thinner, look worried and so this is not a positive change.	
Very narrow bodies in picture 4 (right), man with head/gaze lowered, woman holding chest.	The man and woman have lost more weight and are very thin, look worried and sick. The woman has a pain in her chest - a chest infection such as TB.	

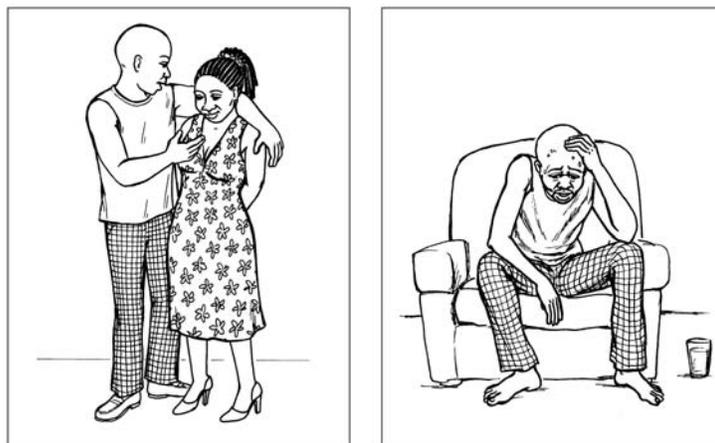
In Peirce's terms, the illustration overall – all four pictures – consists of the following categories of signification: Firstly, the man and woman are icons, realistic within the limits of the medium (black ink on white paper). In the absence of any other contextual detail, the placement of the man and the woman together in each frame is intended as an index of a relationship between the two, that they are a couple.

The use of separate frames to signify changes over time, or a narrative progression, is a convention which sets up syntagmatic relations between the frames (Legrady, 2000). The use of the same clothes throughout, to identify the figures in each frame as the same two individuals, is similar in that it is also a convention intended to create continuity between frames.

The changes in the couple's body sizes, from robust to skinny, are intended as a symptom (index) of ill health. Motivating this, in the third frame the man has one hand held to his stomach, as a sign of discomfort or pain, which is an index of illness. In the same picture, the woman holds up her fist in front of her open mouth, from which emanate lines. We do not see lines like that in reality, and thus this element is quite different from the woman's gesture/posture. The lines are a conventional graphical device to show motion in a still picture, in this case the action of coughing. The act of sneezing or coughing is in itself an index of illness. The figures' gestures, facial expressions and the postures, are indices of unhappiness (worry) and ill health, and should restrict the interpretive possibilities to suggest that the weight loss/smaller body size does not signify healthy weight loss but rather typical wasting from a disease such as HIV/AIDS. Thus, the appearance of the figures – or the denotation – shows symptoms of illness.

Together with the narrative conventions of time passing, shown by the sequence of frames and the physical changes in the characters, this suggests the connotation of HIV/AIDS infection progressing.

**Illustration 1B: Stages of HIV**



**Figure 61. Illustration 1B: Stages of HIV (Before and after)**

*Intended interpretation of Illustration 1B, Pictures 1 and 2*

This couple looks healthy, but later the man becomes sick with HIV/AIDS which he caught and/or passed on by having sex with the woman.

<b>Illustration 1B: Stages of HIV (Before and after)</b>			
<b>Denotation</b>		<b>Connotation</b>	
<i>Picture 1:</i>	A man and a woman.		
	They are hugging and smiling.	They are a couple/in love.	They have sex.
<i>Picture 2:</i>	The same man.		
	Sitting down, holding head in hands. Thinner. Sweating.	He is sick.	He has HIV/AIDS He got HIV from having unprotected sex.

The picture on the left is intended to be ‘read’ first, followed by the picture on the right. The man and the woman are depicted in an iconic way. Their pose (an embrace) and warm facial expressions are intended to index a couple in a sexual relationship.

In the second picture (right) a man is depicted sitting down. He is wearing the same clothes as the man in the first picture, a convention used to index that this is the same man in both pictures. This time the man bends over, supporting his head with his hand. This posture is an index of a bad situation, specifically that he is not feeling well, is weak, and is worried about the cause. Other details add to this. For example, his facial expression is an index of his state of mind and health, with beads of sweat on his head suggesting fever or worry (according to a 'comic' genre style of illustration). The glass on the floor is an icon, which could be irrelevant to the intended message of this illustration. This was included because it was in the original source illustration on which this illustration is modelled. I now think my unconscious interpretation of this was that a sick person may be dehydrated and would have a glass to drink from placed nearby, so they would not have to get up unnecessarily. Therefore, this element contributed to my "illness" interpretant.

The syntagmatic relation of the two pictures has the connotation that because the man's health has deteriorated, he has HIV/AIDS, which he got from having unprotected sex with the woman in Picture 1. The meaning of this illustration is heavily dependent on treating the two pictures as interrelated, and on knowledge of our context – that these are to do with health, HIV/AIDS is the greatest health problem affecting communities, and is a sexually transmitted disease. Without the paradigm of 'health' in our context, it is likely that the man in picture two is simply worrying about his relationship, perhaps the woman turned him down, or he has had a fight with her... the possible connotations of why a man would be hugging a woman and then be feeling terrible or worried are varied.

Although the two frames of the illustration represent a conventional way of showing different scenes in a narrative, or time passing, there is nothing in the illustration to suggest what length of time passes in the conceptual 'gap' between the two pictures – it could be a couple of hours, months or years. Weight loss is commonly known as one of the obvious symptoms of HIV/AIDS infection, which makes this an important element of the intended connotation of this drawing. The man is intended to look thinner in Picture 2, which would support that a long time may have passed, but this change is actually barely noticeable without it being pointed out by the illustrator, if at all. Not noticing this subtle change would have an impact on the possible meanings of the illustration.

## Illustration 1C: Stages of HIV

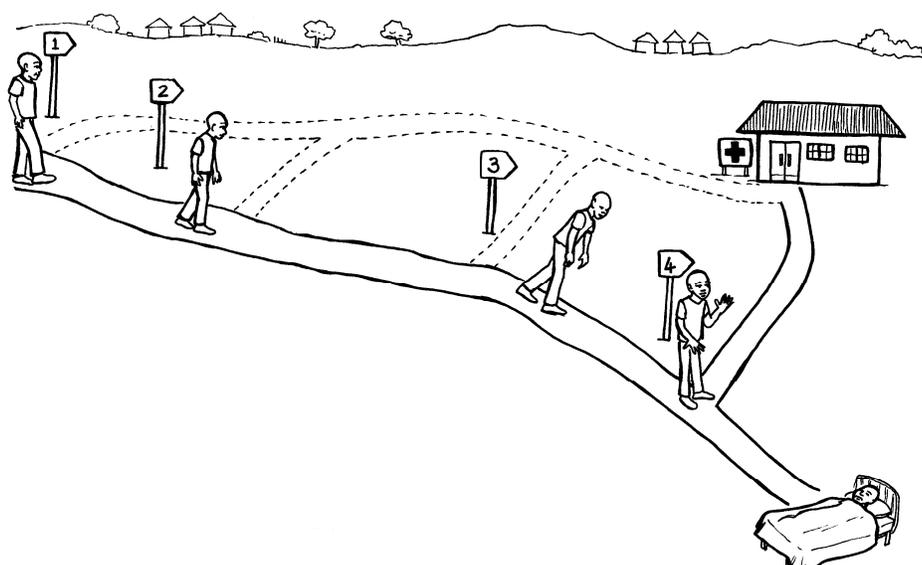


Figure 62. Illustration 1C: Stages of HIV (The road to AIDS)

### *Intended interpretation of Illustration 1C*

HIV is like a road with different paths you can take at different stages. A person with HIV must get treatment at the clinic at different stages or he will go down the road and get very sick with AIDS.

Illustration 1C: Stages of HIV (The road to AIDS)		
Denotation	Connotation	
There is the figure of a man walking on a road, in four places on the road.		
All four figures have the same clothes and facial features, and bald heads.	They look the same because it is the same man, at different places.	The man is shown at different times/stages of his (metaphorical) journey.
The road has signposts, 1, 2, and 3, next to paths leading off the road to a building with a cross on a sign.	The cross means the building is a clinic.	At each signpost the man could take the path to the clinic for treatment.
At signpost 4 the road forks. It goes up to the clinic or down to the man in bed.	If the man doesn't take the path to the clinic (for treatment) at sign 4, he will end up very sick in bed.	The man has HIV/AIDS Going to the clinic and getting treatment could prevent AIDS at stage 4.

The denotation of this illustration includes the four figures walking (suggested by their postures and the direction they face); the bed with a person lying in it; the road; dotted paths; road signs; a building with a square sign board beside it, and a horizon line with simple outlines of trees/bushes and houses.

These are icons, and are all quite simplified, but some are far more simplified than others. The people, the bed, road signs and the larger building are more detailed and more directly analogous depictions of objects as we see them than the road and dotted paths. These latter elements are more like lines on a street map, a genre of representation which employs different visual conventions from the iconic depictions of objects, but retains some iconic residue in that what is depicted denotes the structure of the road ‘on the ground’, in a symbolic way. In Hoffman’s terms they could be classified as symbolic-analogical (Hoffmann, 2000). Even the horizon line at the top of the picture is more iconic than the roads and paths, but is also conventional and abstracted from what we see in reality, and thus is a kind of symbol for landscape. Its placement suggests a different perspective on the scene, attempting to impose pictorial depth despite the flat almost map-like quality of some other elements, with different objects dotted around, out of proportion/not in scale with each other. The horizon line locates the other elements in a landscape with human habitation – perhaps a rural situation, which suggests the context and the assumed/intended audience.

Taking a different visual perspective, the depiction of the road could be likened not only to a map, but also to a line on a graph, showing deterioration. This might seem like a stretch, but the road literally slopes downwards from left to right in the picture plane, towards illness (man in bed), in contrast to the dotted paths which have a visually upward trend towards treatment and better health (at the clinic). Again, such meanings are dependent on the highly symbolic conventions of graphs, and the connotation that ‘up’ represents something good and ‘down’ suggests something bad.

The cross sign next to the building icon is a symbol which motivates that the building is a clinic – one of only two parts of the illustration that explicitly denotes a health/sickness paradigm, the other being the man in a bed, an index from which illness can be inferred. In terms of the ‘geography’ of the illustration, the bed is away from the clinic building and far from any house. This depicts an artificial situation – people do not usually lie in bed in the middle of nowhere! Thus, this element is not literal; like the road, it is part of the HIV/AIDS journey metaphor.

The road signs bear a basic iconic resemblance to real road signs, a stick with a flat shape attached. These shapes are arrow-shaped on one side, a symbol of direction that says, “Go this way.” The numbers are symbols, which show order, a progression or stages. It is not very clear to which parts of the illustration the road signs relate. They are intended to be associated with the man at the different stages of his HIV infection journey. This relationship should work through spatial proximity, i.e. that the signs are placed next to each figure of the man. Penn’s spatial syntagmatic relations refer (Penn, 2000). However, the dotted paths are also close to the signs, and figures 2 and 3 are further away from the road signs than the others are, so this relationship is not likely to be successfully communicated.

Thus, the illustration employs icons and indices, but ultimately it is primarily symbolic. The main concept is a metaphor of the road, or journey. Icons are combined with indices and symbols to create a syntagm with a health-to-sickness connotation. However, the intended message relies on a narrative with several parts, yet it is combined into one picture. Conceptual and spatial relations are combined as a multitude of elements of varying levels of abstraction, resulting in a heavy cognitive load for the viewer.

### **Comparison between the Illustrations 1A, 1B and 1C**

The semiotic analysis reveals that despite my intention to compare different ways of depicting the same message, the intended meanings of these three illustrations are not quite the same. 1A and 1B are rather similar, but 1C is more different from these than I realised when I created the illustrations. The key to this difference is in the stated intended meaning. The message of the first two illustrations is really that, ‘People may look healthy, but they can end up sick like this’, or an implied ‘If you do *this*, you will get *that*.’ However, 1C presents an either/or option, that ‘if you get sick you can go to the clinic and get better, *or* without treatment you stay on the downward road to AIDS, and succumb.’ The ‘and get better’ relies on the opposition with the very sick man in bed, but there is nothing concrete depicted to show that clinic visits will help. For this to work the clinic must be interpreted as an index of healthcare and healing. Therefore, illustration 1C is much more complex and quite different to the other two, placing a heavier cognitive load on the viewer.

Although the other two illustrations also rely on a subtext/implied information about contracting HIV and becoming sick (an interpretant created by the ‘objects’ in context), their meanings do relate more to the sign types within the depiction in a relatively more direct manner.

When comparing illustrations 1A and 1B, the four frames in the former relate more literally to the concept of four stages of HIV infection, and are more capable of showing a progression – if the viewer ‘reads’ the different frames from left to right as intended. There is a greater conceptual gap between the two frames of Illustration 1B, which needs to be filled with more information than the gaps between frames in Illustration 1A. However, there is information of a different sort in frame 1 of 2B, where the ‘love’ relationship is more clearly inferred by the couple’s embracing pose than the wooden, artificial side-by-side placement of a man and a woman (standing rather like the gender symbols placed on public toilet doors!) in illustration 1A.

To rank these illustrations from simplest to most complex in semiotic terms, they remain in their order of 1A, 1B and 1C, with a large gap between 1B and 1C.

## **Set 2: The HIV virus**

This set of illustrations explored different ways of depicting the Human Immuno Deficiency Virus (HIV).

### **Illustration 2A: The HIV virus**



**Figure 63. Illustration 2A: The HIV virus (Woman pointing)**

#### *Intended interpretation of Illustration 2A*

A woman is pointing to a picture of the virus, HIV.

<b>Illustration 2A: The HIV virus (Woman pointing)</b>		
<b>Denotation</b>	<b>Connotation</b>	
A woman standing at a board, hand indicates a picture on board.	She is teaching,	
Red ribbon on her shirt.	HIV/AIDS	The woman is a health educator or activist
Picture on the board.	This is what the HIV virus looks like.	She is teaching about HIV which is caused by this virus

The illustration as a whole depicts a real-life situation, with icons of a woman and a board with poster. The board, together with the woman’s hand gesture (pointing/showing) and open mouth (speaking – about that which she is pointing to and looking towards), means they work as indices of an educational presentation/workshop. The woman’s gaze and hand direct the viewer towards the key element of the illustration – the virus depiction on the flipchart.

The symbol on her shirt is also an index, in that it suggests what the woman is speaking about – the symbol is the shape of a ribbon typical of the widely used red AIDS ribbon symbol. The written text STOP and HIV would also be classified as symbols because words are arbitrary and conventional in relation to their meanings. This text provides anchorage, and situates the scene within an HIV/AIDS paradigm. Together, the visual symbol of the AIDS ribbon and the verbal symbols STOP HIV, motivate the interpretation of other elements of the illustration. Thus if the viewer can read the words, and/or recognises the AIDS ribbon, then he or she may infer that the woman’s activity involves HIV/AIDS, with the connotation that what she is looking and pointing at represents HIV itself.

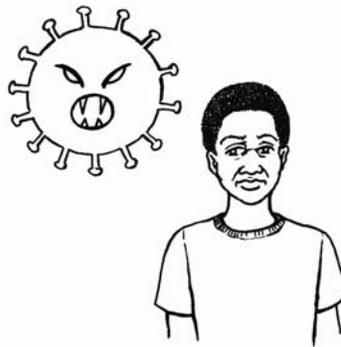
The virus sign on the flipchart poster is difficult to categorise. It can hardly be called an icon, although its appearance is loosely based on what powerful microscopes reveal HIV to look like – spherical shapes covered on the surface with ‘bumps’ on ‘stalks’. Therefore, there is an attempt at iconic residue, despite the simplification and abstraction of the graphic style. This way of depicting HIV has become a convention through use. For examples, see figures 39 and 40. Therefore, conceptually it functions as a symbol, although this feels like an uneasy classification.

The dark shapes on the virus show the inside of the virus, as a diagrammatic ‘slice’ in cross-section, removed from the sphere. This suggests that the inside of the shape is of importance in this situation, and perhaps the virus structure is being explained. This explanation is often done as a way to help people understand how the virus reproduces itself, so people understand why

strict adherence to the treatment instructions is vital. However, this cross section concept is potentially difficult to understand, and this is not helped by the way it is drawn in this illustration which make the details of what is inside the virus indistinct, in comparison with the diagram of the structure of HIV in Figure 39. It must be noted that the stated intended meaning of the illustration does not actually require the viewer to see and understand the inner workings of the virus, but rather that HIV is caused by a virus.

Thus, symbols and indices are used to suggest a context of HIV/AIDS and education, although the stated key element is the virus depiction. The interpretation of the shape as a virus, and HIV in particular, relies heavily on conceptual syntagmatic relations between the other framing elements.

**Illustration 2B: The HIV virus**



**Figure 64. Illustration 2B: The HIV virus (Monster metaphor)**

*Intended interpretation of Illustration 2B*

This person looks worried, he is thinking about this scary HIV virus and wondering if he is infected, or, he knows he is infected.

<b>Illustration 2B: The HIV virus (Monster metaphor)</b>		
<b>Denotation</b>	<b>Connotation</b>	
A man with an unhappy expression.	The person is worried about something.	Thinking about this thing is making the man worried.
A bumpy-edged round shape. It is near the person's head.	The person is thinking about the round thing with bumpy edges.	
The round shape has slanted eyes, an open mouth with	This is a scary face, like a monster. It is in the shape of a	The person is worrying about HIV/AIDS. It is like a scary

sharp teeth.	virus.	creature waiting over his shoulder.
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There are two items in this illustration. At the upper left is a simplified cartoon-style creature intended to represent a virus, namely HIV. On the lower right is the upper part of a person, showing head and shoulders, with a worried expression on his face. The two elements are fairly close together, with the enlarged virus close to the person's head. The person's eyes look slightly towards the left, where the virus is, to suggest that the virus might be the cause of the person's concern.

The virus is not meant to be interpreted literally. However, the round shape with smaller shapes sticking out of it all around its edges deliberately, if very vaguely, resembles the shape and surface of conventional depictions of a virus (as discussed above). Of course an actual virus does not have a face with an expression of devilish intent either, and does not literally hover over one's shoulder waiting to pounce. Yet fear of HIV does hover metaphorically over many people's shoulders, and therefore the enlarged monster virus can be seen as a metaphor for the threat of HIV.

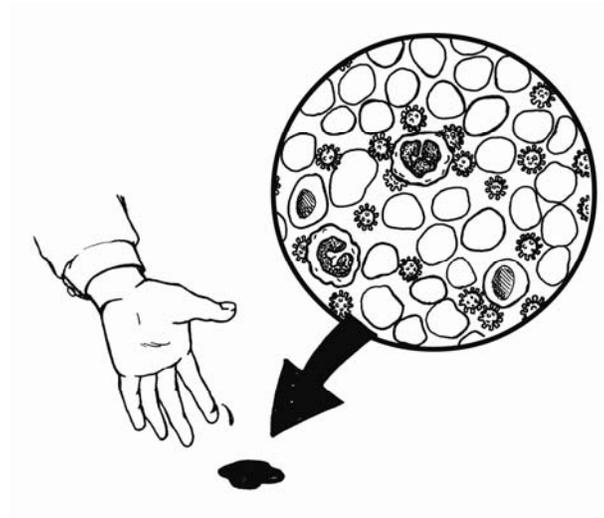
The figure of the person is an icon. His frowning facial expression is intended to be an index of worry or unhappiness. The direction of his gaze is towards the other pictorial element, the virus, suggesting that this is the cause of these emotions. Thus the expression and direction of the gaze must be noticed and connected to the scary virus, a monster metaphor for HIV.

Expressed differently, in terms of denotation and connotation (layers of meaning), the viewer has to understand that the floating shape denotes a virus, and similarly that the facial features of the person denote a worried expression. The connotation is that the person is worried about the virus. This must be HIV, because that is the most worrying virus in our context these days. This would be the interpretant coming into play. Having noticed the expression and correctly identified it, the third step is to link it to the scary virus, a monster metaphor which acts as a symbol of HIV.

What makes the hovering virus appear menacing? The stylised facial features and expression – slanting, angry eyes, and an open mouth revealing sharp teeth – connote danger, fear, something to beware of. The worried expression on the man's face should motivate this interpretation. As it is, the features on the 'scary' virus are abstracted, the mouth is more like an egg with patterns on it, and the eyes could be all manner of other things. This element of the illustrations becomes a symbol, not only of a face but of something to be feared. The syntagmatic relation between the man's expression (index) and the hovering virus (symbol) is both spatial and conceptual. The

syntagmatic relationship between two elements of the illustration thus creates the whole meaning of the illustration.

**Illustration 2C: The HIV virus**



**Figure 65. Illustration 2C: The HIV virus (Blood cells)**

*Intended interpretation of Illustration 2C*

The virus HIV is carried in blood cells.

<b>Illustration 2C: The HIV virus (Blood cells)</b>		
<b>Denotation</b>	<b>Connotation</b>	
A hand with a cut on the finger, and a blood drop.	The finger is bleeding.	The HIV virus is spread in blood.
An arrow linking the enlarged blood cells to the drop of blood.	The circular shape is showing us what is in the blood.	
A circle containing an enlarged view of blood cells and virus shapes (microscope).	There are cells and a virus in the blood.	

Working from left to right across this illustration, the hand is an icon, and a case of visual metonymy, representing a whole person. The cut on the finger is simply a slightly wedge-shaped line, an index to link the droplet shape next to the finger as blood coming from the wound. This in turn is related to the larger dark (black) shape, both by its identical tone, and by the

positioning of the droplet shape above the other shape, to again indicate that this is a puddle of blood from the person.

Identifying the blood droplet and puddle shapes depends entirely on contextualising factors, i.e. the other surrounding objects/parts of the illustration, and mainly on the hand with a cut rather than the round 'microscope' view of blood cells and virus shapes, i.e. that *this* comes from *that* cut in the finger. The arrow pointing down towards the blood puddle is a symbol, directing the viewer to make a connection between the large round shape to the right and the blood, i.e. *this* is what is in *here* (the blood).

The round shape itself and its contents seem difficult to categorise, because yet again blood cells are shown as people never see them, as highly simplified, stylised representations at best. It not an icon, although the circle could be an attempt to mimic the view through a microscope, representing the cells enlarged big enough to see. The closest description seems to be that of a scientific diagram, conventional, and rather like a map that is based on the real shapes of streets but abstracted for practical representation on paper, for a particular lay audience. Therefore, it can be said that the appearance of this element is not completely arbitrary, but is highly abstract and conventional. Thus, it is classified as mainly symbolic.

In a similar way to which the blood drop shape is an index which links to the cut finger (or vice versa), the large round shape relies on a relationship to the blood drop if it is to be interpreted as intended. This illustration relies of a complex and challenging combination of sign types which again leads to a heavy cognitive load.

### **Comparison between the Illustrations 2A, 2B and 2C**

Although these three illustrations were grouped together, as ways of depicting HIV, the virus, in the course of the semiotic analysis it became clear that their real content is in fact very different. While in each case the virus is there in one form or another – be it metaphor (2B) or simplified icon, or symbol – the other icons and symbols in the illustrations create very different contexts. Some of the icons become indices because of the way they infer relationships between different elements. The other components that create the virus message cannot be ignored, because they are integral to building the interpretation that those shapes represent the virus. The syntagm of each illustration is thus quite different in terms of the way the signs relate, what the icons denote, and thus the connotations that follow.

These illustrations can be ranked in order of semiotic complexity in their existing order. Illustration 2A is the most analogical to every day experience, even with the inclusion of symbols; 2B is more complex and metaphoric, while 2C combines analogical icons, and an index with a symbol and some difficult to define conceptual pictorial elements – icons so abstracted that they take on symbolic qualities. All of the illustrations are hampered by trying to depict an intended meaning in ways that do not evoke people’s everyday, concrete visible experience of HIV.

### **Set 3: Safety for caregivers**

#### **Illustration 3A: Safety for caregivers**



**Figure 66. Illustration 3A: Safety for caregivers (Three frames)**

#### *Intended interpretation of Illustration 3A*

When caring for a sick person, protect yourself from infection by washing hands, wearing gloves, and covering cuts with plasters.

<b>Illustration 3A: Safety for caregivers (Three frames)</b>		
<b>Denotation</b>	<b>Connotation</b>	
Top picture: Washing hands with soap and water.	Removes or kills germs.	Protects from getting or passing on HIV/AIDS.
Middle picture: Hands covered with plastic bags handling soiled bedclothes.	Plastic bags protect the hands from germs in body fluids.	Protects from getting or passing on HIV/AIDS.
Bottom picture: Hands with plasters.	The hands have cuts or wounds.	Covering wounds protects from getting or passing on HIV/AIDS.

This illustration has three different pictures that do not need to be viewed in any particular narrative order to make sense. Each one is an icon(s), denoting things we can see ordinarily in daily life.

The hands without the whole body represent a person, through metonymy. The lines around each picture frame the arms, so that the hands do not just float in space, disembodied. The implication is that the rest of the person is beyond the frame. This is a conventional pictorial device commonly found in cartoons/picture stories. The three frames relate to each other to create a spatial syntagm because they are close together in a line on the page. The first two pictures show hands in action, doing something, whereas the third (bottom) picture is more static. The similar content suggests a conceptual syntagm, i.e. that the meanings of the three are related. It is conceivable that some viewers would try to create a narrative syntagm based on knowledge of cartoon frame conventions where these are ‘read’ in order to tell a story, but this need not necessarily detract from the intended interpretation.

The icons in the top frame consist of hands, holding a bar of soap, with a basin of water in the background. On the soap and in the basin are stylized cloud shapes, intended to show soapy lather. On the soap is the partially obscured word, Lux, a well-known brand of soap. Verbal text is symbolic, and ordinarily serves to provide some anchorage to limit the possible interpretations of the shape as a bar of soap, if viewers are text-literate. In this case, however, the word ‘Lux’ is so obscured as to be insignificant. In the centre at the bottom of the frame, below the hands and soap is an irregular shape representing water dripped from the soapy hands. Together these are an index of hand washing. The intended connotation of hand washing is hygiene, to avoid the spread of germs that cause infectious illnesses.

However, the individual icons are each stylized and simplified depictions, and only partially seen, occluded by the other elements that overlap. For example, only four digits of the two hands are actually visible. The foam shape partially covers the soap (and the word 'Lux'). The body of the basin is partially obscured by the hands, consisting mainly of the ellipse at the top.

The picture in the middle is also iconic, but apart from the hands, the other components appear abstract if examined in isolation. For example, the dark shapes filled in with ink strokes in the bottom left corner of the frame are meant to be body fluids. The lines around the hands represent plastic bags, in an almost diagrammatic, conceptual manner, and there is little iconic resemblance to what plastic bags really look like. Together the dark shapes (body fluids) and the hands in plastic bags show that such soiled sheets should not be touched with bare hands. Thus plastic bags worn on hands are an index of a situation where someone would need to protect themselves against infection, such as when caring for a sick person with HIV. Plastic bags are used instead of gloves in communities where basic health resources are scarce, and thus the picture implies a rural audience that may not have access to things like surgical gloves. Plastic bags are used for many purposes, and cannot be described as an index or conventional symbol of protection from infection.

The bottom picture again shows the disembodied hands, with plasters. The hands are not intended to be doing anything but wearing the plasters. Their position within the frame could however, be seen as a gesture, an index, for example, of reaching out for or catching something? Plasters are an index of a cut or wound – the plasters could mean stopping bleeding and/or protecting a wound from infection. The message could end there. However, in the context of healthcare and HIV the object of this would be that HIV is spread in blood/body fluids, and wounds must be covered to protect others and oneself from HIV infection. A plaster can also be a symbol of protection or healing.

The three pictures in this illustration show three different messages, which relate as indices to the intended message – protection from infection. The connotation of HIV is deeply implicit and context dependant. Although they may be interpreted individually, the signs together have syntagmatic spatial and conceptual relations. However, there is no intended narrative sequence or causality between the three frames.

### Illustration 3B: Safety for caregivers



**Figure 67. Illustration 3B: Safety for caregivers (Three objects)**

#### *Intended interpretation for Illustration 3B*

Using soap, gloves and plasters when caring for a sick person can protect you from getting infected with HIV.

<b>Illustration 3B: Safety for caregivers (Three objects)</b>		
<b>Denotation</b>	<b>Connotation</b>	
Soap, with bubbles and water.	For washing hands, to remove or kill germs.	Protects from getting or passing on HIV/AIDS.
Surgical gloves.	Protect the hands from germs in body fluids.	Protects the wearer from HIV/AIDS.
Plaster.	To cover wounds or cuts so that germs don't get in.	Covering wounds protects from getting or passing on HIV/AIDS.

This illustration is similar to 3A in that it also has three separate pictures, although this time they are not clearly separated by frames but simply by white space surrounding each object. The other obvious difference is that these are objects out of context, without hands using or wearing each thing. All of these are static icons.

The first picture is of a bar of soap. Because it is such a simple shape and could be any oval shaped object, the word 'soap' has been added, as a form of anchorage. This label is not a completely artificial or non-iconic addition, because many brands of soap do imprint text, such as the name of the brand, onto the soap bar itself. As in the previous illustration, cloud shaped blobs and a line near/on the soap bar are intended to show soap suds and a pool of water, to motivate the identification of the soap by its bubbles and association with water. These elements are also iconic, although also very simple and stylised. A bar of soap with water and suds is an index of hand washing, and/or bathing, which in turn implies cleanliness and hygiene.

The second picture in this illustration is of a pair of 'empty' latex or rubber gloves. In our social context, latex gloves index infection control in a healthcare situation, specifically prevention of HIV transmission from exposure to infected blood. All first aid kits contain latex gloves, or should do. Health workers put on gloves to perform examinations and procedures. Children are taught never to touch the blood of other children who get hurt while playing, and caregiver education deals with the importance of using gloves or other protective measures such as plastic bags on the hands.

The third picture in the illustration represents a sticking plaster used to cover broken skin, such as small cuts. Like the others, this is a very simple line drawing, and apart from its spatial proximity to the other pictures in the illustration, it is seen out of everyday context and without a sense of scale. In fact it in terms of relative size it is much larger than it should be when compared with the gloves and the soap (although the soap is also too large when compared with the scale of the gloves.)

This illustration is so similar to the previous one that it may seem unnecessary to belabour the individual sign type analysis – the icons in the different pictures relate to each other and this relationship means they function as indices of hygiene and infection control, to connote the overall meaning. However, the three different pictures in this illustration remain icons in a pure sense, emphasized by their static nature and lack of depicted human action. Part of this could be the lack of frames dividing the three, a convention common to the comic genre that would imply a narrative.

### Illustration 3C: Safety for caregivers



Figure 68. Illustration 3C: Safety for caregivers (Women with gloves)

#### *Intended interpretation of Illustration 3C*

Wearing gloves protects this woman's hands from germs, while she cares for someone with an infectious disease like HIV/AIDS.

Illustration 3C: Safety for caregivers (Woman with gloves)		
Denotation	Connotation	
A woman, putting gloves on her hands.	Gloves protect the skin from germs, such as HIV/AIDS.	The woman is caring for someone who has HIV and is protecting herself and the patient from germs.

This illustration is an icon of a woman. Her skirt and faint suggestion of breasts (below her right shoulder) identify her as female, and her sturdy build and flat sensible shoes index that she is strong and practical, more likely working than if she were wearing heels. She is a woman because of the stereotype that women are more likely to take on the job of home-based care of the sick.

There is a pair of gloves on her hands, and the position of her hands and the downward gaze of her eyes direct attention to what she is doing – pulling on or removing the gloves. The gesture is intended to emphasize the gloves, by showing a wrinkled surface and lines that interrupt the length of her arms, i.e. that these are things she has put on and that they are not just her hands.

Therefore, the actual crease lines and depiction of her hand positions are indicators of where one should look. This is where the salient part of the illustration is, as it is the only thing the woman is ‘doing’ and therefore this is the key to the connotation. As previously stated, gloves signify protection of the hands, in an indexical relationship. The viewer’s particular social context and experience would influence what they expect the gloves to be protecting the hands from, which would constitute the interpretant. For example, gloves might protect hands against the cold, or against damage while gardening or handling poisons. In our context, it is reasonable to expect that people who know about the different ways of contracting HIV will associate gloves of this type with health care, as gloves are used to protect both caregivers and patients against infectious diseases spread through body fluids.

The causality (or cause and effect relationship of the index) lies in the connotations, of how HIV is spread and that it is prevalent enough that one should not risk treating others without protection. Therefore, gloves should be used in certain situations, but this information is not visibly depicted in the illustration. Without the factors of healthcare and HIV in our society, there is little to facilitate the intended interpretation, especially if the viewer fails to notice the gloves, and misinterprets the hand positions.

### **Illustration 3D: Safety for caregivers**



**Figure 69. Illustration 3D: Safety for caregivers (Woman with gloves in context)**

*Intended interpretation of Illustration 3D*

Wearing gloves protects her hands from germs, while she cares for someone with an infectious disease like HIV/AIDS.

<b>Illustration 3D: Safety for caregivers (Woman with gloves in context)</b>		
<b>Denotation</b>	<b>Connotation</b>	
A woman putting on gloves.	Gloves protect from germs.	A caregiver for a person with HIV/AIDS.
A basin full of soapy water and washing, and box of soap powder.	The caregiver is washing for the sick person.	
A person lying down in bed.	The person is sick.	The person has HIV/AIDS.
A bucket and cloth.	For the sick person to use, or for washing the sick person.	
A potty covered with paper.	For the sick person use.	The person in bed is too sick to get up or do things for herself such as toilet, washing.

This illustration shows exactly the same woman depicted in the previous illustration pulling on (or removing) gloves, in the same pose, but now placed in a context intended to be indoors at a home. There is a sick person lying in bed, a basin of washing, soap powder, a bucket and towels beside the bed, and a covered potty. These icons shown together become indices of home based care, because there is a patient (lying down in bed with the connotation that she is weak) and a caregiver (standing, looking physically strong and capable). Ideally, the positioning of the caregiver on the left, and in front of the most of the other objects, should encourage the viewer to look at her first – that is, if following the reading convention of left to right. Her hand positions and gaze draw the viewers’ eyes to the gloves, which were the intended focus of the message, safety for caregivers in the depicted situation.

Although the scene is set indoors, there is very little physical evidence to show the room or building. The only part of the actual structure depicted are three lines: one vertical to suggest walls meeting in a corner behind the bed, and two ‘horizontal’ (but visually angled to create perspective) to suggest the walls meeting the floor. The flat floor surface exists conceptually, almost entirely because of these lines at its edges, and the objects and woman, which stand on an invisible plane. The furniture and woman in bed motivate that the scene is inside a house,

because beds and their occupants generally belong inside. The scene is homely due to the nature of the icons in the illustration.

### **Comparison between the Illustrations 3A, 3B, 3C and 3D**

All of these illustrations are icons, with no symbols in the traditional sense. However, the objects in illustrations 3A and 3B become symbols of hygiene (soap), infection control (gloves) and plasters (healing/protection) through association and habit, in much the same way as condoms have come to be associated with safe sex.

3B has the simplest denotation – isolated objects, linked spatially to create a conceptual syntagm. 3A is a similar syntagm, but with framed edges, and more contextualising details and actions in the individual pictures. The actions show the intended message. The signs in 3A and 3B thus work in different ways, as discussed above.

3C and 3D are very obviously different to the others. 3C in particular only refers to gloves, which is only a third of the content of the first two illustrations, and lacks the motivation of the contextualising details in 3D. In 3D, these signs function together as indices of a caregiving scenario, but the illustration has less focus on the intended message of this set of illustrations.

In an ideal situation, it would make sense to use more than one illustration in a complementary manner. For example, 3B and 3D would work well together. 3D could suggest a context to direct the viewer on how to interpret 3B.

### **Set 4: Internal organs – The digestive system**

#### **Illustration 4A: Internal organs – The digestive system**



**Figure 70. Illustration 4A: Internal organs – The digestive system (Partial body outline)**

### *Intended interpretation for Illustration 4A*

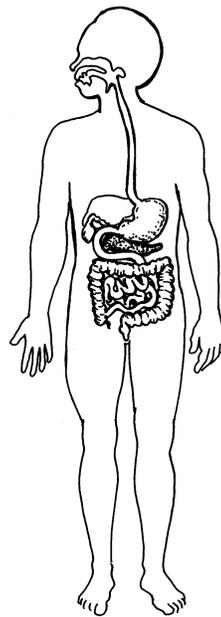
When you eat, the food goes from the mouth to different organs inside the body.

<b>Illustration 4A: Internal organs – The digestive system (Partial body outline)</b>		
<b>Denotation</b>	<b>Connotation</b>	
The outline of part a person, missing details such as eyes.	Diagram.	
Holding a spoon to the mouth.	Eating/swallowing something.	
Lines from the mouth go down to the shapes of organs in the stomach area.	The lines show body parts that are inside the person's body, which you can't see from the outside.	Food goes in the mouth, down the oesophagus (food pipe) into the stomach and intestines.

This illustration has a relatively simple intended message when compared with some of the previous illustrations, because there is not really an underlying persuasive purpose. It does not advocate certain behaviour, or warn against something happening because of danger posed by something else, as many of the other illustrations do – for example each of the illustrations in Set 1, and illustrations 3A and 3D.

The simple outline of part of a person's body, with essentials removed, is a diagram; a type of icon. The ear is an anomaly for a diagram, because it is a detail superfluous to the message. It is included to help show that this is a person's head. Similarly, there is a certain lack of consistency in the treatment of different parts of the person. Specifically, the view of the internal organs suggest the torso is conceptually 'sliced', in cross section to show the inside, but the arm and hand holding the spoon are not. Like the ear, the hand with finger details helps to define the shape as a person, but because it holds the spoon this could be accepted as an essential part of the diagram. The spoon placed close to the mouth is an index of eating, which suggests that the organ shapes are to do with eating/digestion, enhancing the connotation. There are no definite symbols in this illustration.

**Illustration 4B: Internal organs – The digestive system**



**Figure 71. Illustration 4B: Internal organs – The digestive system (Whole body)**

*Intended interpretation for Illustration 4B*

This is the digestive system inside a person.

<b>Illustration 4B: Internal organs – The digestive system (Whole body)</b>		
<b>Denotation</b>	<b>Connotation</b>	
The outline of a person.	Diagram.	
Lines from the mouth go down to the shapes of organs in the stomach area.	The lines show body parts that are inside the person’s body, which you can’t see from the outside.	Food goes in the mouth, down the oesophagus (food pipe) into the stomach and intestines.

Illustration 4B is almost the same as 4A in terms of its sign types: a diagram, but without the spoon index. The other difference is that there is no ear, and the body outline is whole. It could be argued that the latter makes the icon more analogical and marginally less diagrammatic than the previous illustration, but the difference is very small, if any. It remains a diagram, and the placement of the organ shapes on/inside the very basic body outline is an index that this shows something inside the body.

Without the spoon index, there is less information to motivate an interpretation that the organs depicted are the digestive system. This means that the sign object or message content is not exactly the same in Illustrations 4A and 4B, although the diagrammatic approach to the style of depiction is similar.

**Illustration 4C: Internal organs – The digestive system (Clothed woman)**



**Figure 72. Illustration 4A: Internal organs – The digestive system (Clothed woman)**

*Intended interpretation of Illustration 4C*

This picture shows what is inside the woman’s body (the stomach and intestines). This ‘arrow’ points to where these insides are.

<b>Illustration 4C: Internal organs – The digestive system (Clothed woman)</b>		
<b>Denotation</b>	<b>Connotation</b>	
A person wearing a dress.	The person is a woman.	
A round shape next to her contains a picture of a stomach and intestines, pointing to her body.	The ‘arrow’ shows where those organs are inside the woman’s body.	The picture is showing us what is on the inside of the woman’s body.

Yet again, the content of this illustration turns out to be slightly different from the others in its set. The oesophagus or ‘food pipe’ is not shown and there is no link with the mouth, and thus there is even less to show that the organs depicted are the digestive system specifically.

One aspect of this illustration is a far more naturalistic image icon than the other two diagrams in this set, as it is a more detailed depiction of a woman with facial features and clothes. This quality is, however, combined with an abstract graphical device, a round balloon shape containing the same diagram of insides as in the other two illustrations; although this time, they are partially seen without the oesophagus pipe. The balloon itself, with an arrow-like flash pointing towards the abdomen of the woman, is a conventional symbol, almost like a speech balloon in the comic genre. It is a symbol but its function is indexical to direct the eye and link the contents of the balloon to the woman’s abdomen. The syntagm relies both on conceptual and spatial relations between sign types.

### **Comparison between the Illustrations 4A, 4B and 4C**

All three of these illustrations have more or less similar and relatively simple intentions: to show the insides/digestive system for a particular purpose, such as providing background information to help explain diabetes. These illustrations are not showing an action as such (unless you count the spoon lifted to the mouth in 4A as an action), and they do not have a persuasive purpose, for example, “Do x to protect yourself from y...”

However, the depictions are more complex because what they attempt to show is something not ordinarily visible. For example, diagrams 4A and 4B appear simple yet are abstracted from reality and reduced to essentials. Illustration 4C is a more complex combination of sign types, even though the intended message remains simple, like the other two illustrations. All three require the viewer to make the conceptual leap that what is shown is on the inside of the body, according to conventional graphic devices.

### **Set 5: TB symptoms**

Two of the illustrations in this set comprise six pictures in each – that is, illustrations 5A and 5C. On careful examination, the sign types in many of the individual pictures are very similar. The syntagmatic relations intended between the different pictures in each illustration are of particular interest in both cases.

## Illustration 5A: TB symptoms



Figure 73. Illustration 5A: TB symptoms (Six different people)

### *Intended interpretation of Illustration 5A*

These symptoms together are signs of TB: coughing (top left), chest pain (top right), weight loss (middle left), no appetite (middle right), night sweats (bottom left), coughing blood (bottom right).

Illustration 5A: TB symptoms (Six different people)			
Denotation		Connotation	
Top left	A man holding his hand in front of his mouth. His other hand is on his chest. His mouth is open and his eyes are closed. There are lines coming from his mouth.	Coughing.	Signs of illness.  Together these things are the signs of TB.
Top Right	A woman with her hand on her chest. Her face is worried.	Chest pain.	
Mid left	A man is wearing trousers that are too big.	Weight loss.	
Mid	A man pushing a full plate of food away	No appetite.	

right	from him.		
Bottom left	A woman sitting up in bed at night, with wet drops on her face and body, wiping herself with a cloth.	Night sweats.	
Bottom right	A woman holding a handkerchief covered in dark fluid, staring at it.	Coughing blood.	

The six pictures in this illustration would be looked at left to right, starting at the top, if one followed a conventional, sequential reading order. However, the pictures in this illustration need not be read in this order, because the intended message is not in a narrative sequence, but rather a collection of the symptoms a TB sufferer may have. Perhaps the best known of those symptoms are persistent coughing and chest pain, and therefore the pictures of these are at the top, knowing that many viewers may well start automatically at the top left. However, that order of viewing is not assumed, because the syntagm is conceptual rather than narrative.

The top left picture is of a man whose physical gesture and facial expression, with eyes squeezed shut and open mouth, is an index of coughing. The graphical device of lines emanating from his mouth motivates this, by adding to the sense that air is being expelled by a cough. This is also an index, in that the expelled air is a result of and connected to the coughing action. It is tempting to classify these lines as symbols, because they are a convention, and could be seen to symbolise a movement or action.

The top right picture is similar, in that the facial expression and hand gesture are indices of pain, in the chest area where the woman holds her hands.

In the middle row on the left, the icon is a man holding onto his trousers which are too big. His raised eyebrows and resulting facial expression are indices of surprise, or mild curiosity over why the trousers do not fit properly anymore. The loose trousers are an index of weight loss. The facial expression and the large waistband being held to stay up connote this, rather than that the man is trying on new trousers that are too big. Weight loss is a symptom of illness, especially when conceptually linked with the meaning of the other pictures in the illustration.

To the right in the middle, the man's flat open hand facing away from him is an index that he is pushing the bowl away from him. Again, the expression on his face suggests that he is disinterested, with downcast eyes and unsmiling mouth, and he leans back a little in his chair. This physical attitude and the pushing away action combine to further index that he does not feel

like eating. There could be a causal relationship between this frame and the previous one, that weight loss could be a result of not eating.

The bottom left picture is perhaps the most interesting in this illustration. There is a window with curtains partially drawn, to show a dark sky and a moon outside, an index that it is night. The curtains appear to float on a wall implied only by a vertical line to the left and behind the woman. The woman is sitting up in bed, wearing a stocking/cap on her head (as many people do to protect their hairstyles). This is an index that she has gone to bed for the night. She holds her left hand up to the side of her face, holding a cloth to mop her face. These elements avoid obscuring the detail of her face. The detail is important because there is something on her face and similar droplet shapes around her. These are graphical devices literally flying off her in a comic style convention, which should emphasize this element of the illustration. The cloth held up to the face indexes that these things are beads of sweat that she is wiping off. Her expression shows that she is wide-awake and rather surprised or disturbed by what is happening – this is not a normal situation.

On the right (at the bottom) is an icon of a woman. Her wide open eyes, slightly crinkled eyebrows and open mouth suggest surprise or even horror. Her eyes look down, an index that the cause of her expression is what she holds in her hands. It is a cloth, with a dark shape on it, and the connotation of her expression is that this is not a good thing. This picture has little to motivate that the dark shape represents blood, or that it came from the woman's mouth. A recognition of the cloth as a handkerchief or tissue may help, for that would be an index that she had coughed or sneezed into the cloth.

These six pictures relate to each other visually, mainly because they are in similar frames in close spatial proximity on the same page. As a convention, frames placed together are 'read' as a narrative, or at least in logical relation to each other. There is no causal link between these different pictures – they relate in a conceptual syntagm, i.e. that these pictures each represent a symptom of the same disease. As symptoms are often seen as the same as indices, it makes sense that all of the individual pictures can be classified as icons and indexes.

**Illustration 5B: TB symptoms**



**Figure 74. Illustration 5B: TB symptoms (One person)**

*Intended interpretation of Illustration 5B*

These symptoms together are signs of TB: coughing, chest pain, weight loss, coughing blood.

<b>Illustration 5B: TB symptoms (One person)</b>		
<b>Denotation</b>	<b>Connotation</b>	
A man with eyes closed, mouth open, holding a cloth to his mouth, it has something dark on it.	This man has a bad cough. He is coughing up blood.	This man is sick. He has the signs of TB.
He is bent forward and holding his chest.	It is sore when he coughs.	
He is very thin.	He is unhealthy and weak.	

The picture is an icon of a man standing, with one hand holding a handkerchief with a dark mark on it up to his mouth, while the other hand is held to his chest. His eyes are tightly closed and his mouth open. The connotation of such a pose is that he is coughing. The different elements of the pose index that he is coughing something into the handkerchief, and that his chest is painful. The facial expression is also an index of what he is doing. He looks as though he is in pain and this

suggests that not all is well. In addition, he is rather thin, and all these things together are symptoms (indices) of illness. In our context TB is a prevalent disease with the common symptom of coughing, and coughing up blood.

**Illustration 5C: TB symptoms**



**Figure 75. Illustration 5C: TB symptoms (Six pictures of one person)**

*Intended interpretation of Illustration 5C*

These symptoms together are signs of TB: coughing with chest pain, no appetite, fatigue, weight loss, night sweats, coughing blood.

<b>Illustration 5C: TB symptoms (Six pictures of one person)</b>			
<b>Denotation</b>		<b>Connotation</b>	
Top left	A man holding his hand in front of his mouth. His other hand is on his chest. His mouth is open and his eyes are closed. There are lines coming from his mouth.	Coughing.	

Top Right	The same man with a full plate of food and a knife and fork. He is turning away.	No appetite.	Signs of illness.  Together these things are the signs of TB.
Mid left	The same man sitting down resting his head on his hand. A garden fork is next to him.	He is tired/weak.	
Mid right	The same man stands on a scale. He looks worried. He is thin.	Weight loss.	
Bottom left	The same man lying in bed asleep with wet drops on his face.	Night sweats.	
Bottom right	The same man is holding up a handkerchief covered in dark stuff, his eyes are closed and his mouth wide open, lines coming from his mouth.	Coughing blood.	

The most obvious difference between this illustration and Illustration 5A is the lack of frames around each figure/picture, and that the same person is depicted for each symptom – an ordinary man with few distinguishing details. As in Illustration 5A, all the facial expressions are intended to look unhappy or uncomfortable, and are thus indices of pain, illness or worry. This suggests a possibly serious situation. However, the content of some of the illustrations are different from those in 5A. Illustration 5C does not have one picture to show chest pain on its own, and instead has a picture to show weakness/fatigue.

Like the top left picture in 5A, the top left picture of 5C is an icon, a man whose physical gesture and facial expression – eyes squeezed shut and open mouth – index coughing with the graphical device of lines in the white space around his mouth supporting this. His right hand on his chest is an index that the action is painful.

The top right picture is a slightly different depiction of lack of appetite, the man turns away from the untouched bowl of food, his posture and glum expression indexing disinterest.

The middle picture (left) is an icon of the man sitting down on a log, against which is leaning a garden fork. His posture, bent over with head in hand, is an index of how he feels – he is tired and/or weak. Related to the fork, the connotation is that the man is too tired and/or weak to do physical work such as gardening.

To the right of this is the man standing on a scale, to show that he is being weighed. His gaze is downward, suggesting that what he sees on the scale is the cause of his unhappy expression (frowning). His body is thin, which, in syntagmatic relation to the other pictures of the symptoms

of illness, motivates that this is not a healthy bodyweight and thinness/weight loss is an index of illness.

The bottom left picture of night sweats shows a face, hands, pillow, blanket and bed, but seen from an unusual angle – directly above. This means the bed and pillow appear as rather abstract lines behind the disembodied face and hands. The droplet shapes on the face are beads of sweat. These are graphical devices similar to those in Illustration 5A, but rather than floating in the air, they are on the skin, evoking sweat in a slightly more analogical manner. However, this way of showing sweat is rather conventional, but is not symbolic.

The messages in all six pictures need to be related as a syntagm, to deliver the intended meaning, and the lack of frames and the use of one person in all the pictures were intended to facilitate this.

### **Comparison between the Illustrations 5A, 5B, and 5C**

Illustrations 5A and 5C are able to refer more directly to the individual symptoms of TB, because there are more pictures. In each picture, the signs relate more specifically to their particular object(s) – one of the symptoms of TB. In 5B the object (message) is amalgamated into one main icon, and the main index is the gesture and pose, and the dark mark on the cloth – thus some elements of the message are not clearly indexed but are ‘buried’, for example the weight loss, which has whole pictures of its own in 5A and 5C.

However, the illustrations with multiple pictures must be linked conceptually in order to fulfil the intended message, adding another layer of syntagmatic relations between and within pictures to be considered. While there is no intentional sequence, or narrative causality between all the illustrations, they must be viewed as part of a whole. However, in illustration 5A the pictures showing different people subvert the object, which is to represent one illness through a collection of different symptoms, even though in reality not all TB sufferers may have all the same symptoms at once. The depiction of different people risks disrupting the continuity and logical relations between the frames. In these terms, the pictures in 5C may be easier to link and understand, because the same character is in all the pictures. This creates a logical relationship between the signs, towards an overall meaning.

## Summary of semiotic analysis

It should go without saying that all of the illustrations in this research, as images, consist of icons, or at the most basic level are mainly iconic signs, because they resemble and denote actual things: people and objects. This rests on Peirce's classification of images in general as a class of icon, where these bear resemblance to, or share "a collection of properties" of, their object (Johansen & Larsen, 2002: 37).

The point was made in Chapter 2 that "the designations 'indexical', 'iconic' and 'symbolic' simply indicate the sign's dominant, but never sole, mechanism of the standing-for relation. ... In this way all three aspects of the semiotic process – indexical, iconic and symbolic – constantly support each other; and it is the interrelation between them that makes the production of meaning possible" (Johansen & Larsen, 2002: 51-52). In order to convey anything more than denotation, an icon must have some indexical or symbolic relationship to what it represents, or its intended meaning. In intentionally communicative visuals, the icon always represents more than itself – in these illustrations there is always an intended message or second order meaning beyond the denoted icon. Most often signs are classified as icons and indices, apart from the more obvious symbols such as arrows, or graphic conventions such as frames that usually suggest a narrative sequence, amongst others.

For the most part, different objects are combined in syntagmatic relations, or contextualised by other icons, so that they become or operate as indices of certain situations, or conditions. In this way, the icons denote the first order of an illustration's meaning, and the connoted, second order message is dependent on indexical and/or symbolic relationships. As we have seen, symbols have conventionally accepted meanings, which may differ across contexts, cultures and among different communities. While the agreed/intended meanings are maintained, their placement in an illustration made up of different sign types in some cases allows the symbols themselves to serve dual roles as indices, in an attempt to create the intended meaning/message content of the whole illustration.

In this type of analysis, there is a danger of perceiving the sign types as blended to such an extent that the analysis becomes mired in a situation where every element could be classified as everything. This should be controlled by contextualising the illustrations' purposes and conventions used, to guide how one decides where to 'draw the line' between sign types.

... the transition from iconic to symbolic signs is often quite fluid. Resemblance is partly based on immediate appearance, but often to a greater extent on representational convention. The more the observer's interpretive performance relies on convention, the more likely it is that we are

dealing with a symbolic sign. In this case, the relationship between the sign object follows traditional rules; it is learnt, agreed or accepted as a habitual association. Where originally it was physical contiguity, now this is purely artificial and fixed by common consent (Hoffmann, 2000: 62).

### **The most complex sign-object relationships**

The illustrations which stand out from the others, by containing more abstract representations and diverse sign types in complex combinations, are 1C (HIV stages as the 'road' to AIDS); and 2C (the cut finger, blood drops and enlarged HIV cells). Both have complex messages to convey: 1C must include a lot of information, in order to represent the stages of HIV, while 2C attempts to show what is ordinarily unseen. Thus, on analysis, the depictions can be described as quite idiosyncratic as the artist grapples with the demands of interpreting such information visually, resulting in the likelihood of placing an even heavier cognitive load onto the viewer.

Other illustrations with more obvious combinations of different sign types and conventional graphical elements than most include 4C (the clothed woman with internal organs shown in a separate shape), and 2B (the metaphorical monster HIV virus hovering over the man's shoulder and on his mind).

In all of the above-mentioned illustrations, at least some of the individual icons within all these illustrations should be recognisable objects to most viewers. However, particular background knowledge is required to link the different elements, and if one or two key objects are not familiar then this affects the interpretive possibilities – especially graphical devices such as symbols and other similar conventions (such as picture frames and 'bubbles' and arrows to indicate links).

Other ways of suggesting logical relations between objects are also deceptively conventional, for example placing them in close spatial proximity, or simply grouped together on one page. Visual spatial syntagms may seem to be more 'natural' and obvious than more conceptual links. However, the spatial and the conceptual aspects need to exist together in order to represent any message of complexity. These elements can exist within single-picture illustrations that include many icons, or in separate pictures that relate to each other to illustrate one major message. Thus syntagms at different levels of illustrations may co-exist, and contribute to the overall intended meaning. This concurs with Chandler's assertion that like sign types, the boundaries between different syntagmatic structures are often not clear-cut (Chandler, 1994).

## **Sign types in a cyclical process of interpretation**

These necessary relationships between pictorial elements and sign types can be added to (or combined with) the cycle of interpretation (Moriarty, 2005: 234) where the viewer identifies the denotation, moves to considering the connotative meaning of the identified objects, and then considers the denotation again for confirmation. The sign types could be seen to operate as micro elements of this larger cycle of interpretation, contributing to denotation and connotation at each stage.

Alternatively, denotation and connotation can be applied to each element of the illustration, while the cyclical relationship between denotation and connotation expresses the viewer's process/activity, as much as it also explains the first order and second order meanings of the sign types within the illustration. If denotation is to do with the sign types as icons, then how these are combined in turn influences the connotation. Thus, the sign types are an integral part of the interpretive cycle of denotation and connotation.

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This chapter has focused almost exclusively on the illustrations – how and why they were developed, where they were published, what information each was meant to communicate, and how that information was interpreted by the illustrator, revealed through visual semiotic analysis. The focus now shifts to the audience, as the next chapter reports on how the research participants interpreted the illustrations during the interviews.

## Chapter 6: Findings and analysis

The extent to which adults with limited literacy skills are able to interpret illustrations correctly was the burning issue that motivated this study, and although a more nuanced understanding of the factors involved has emerged, the contents of this chapter remain the defining piece in this puzzle. Theories remain just that until applied to real world situations, and the interviews and resulting data provided that opportunity. In addition, the interviews were social encounters, which enhanced the research experience and deepened my awareness of the human context of the investigation. Thus the findings reported in this chapter are meaningful on several different levels, not least because the interviews provided “communicative validation” to complement structuralist semiotic analysis (Penn, 2000: 242).

The participants’ responses to each illustration are reported and discussed, and related these to the semiotic analysis of the illustrations (and their intended meanings) in the previous chapter.

The responses to some of the illustrations have been analysed in slightly different ways from others, for the illustrations work in different ways and were being assessed for different reasons. Some of these differences only became clear to me during the interviews, and more of them became clearer during the data analysis, and further examination of theory and the literature. For example, the participants’ responses to certain of the illustrations were more detailed or more interesting than their responses to others. Therefore, there may appear to be unevenness in the attention paid to certain aspects of some of the illustrations. This is because choices had to be made about which aspect needed attention in the context of this study, based on, for example, my intentions and the reasons for including particular illustrations.

### ***6.1 Investigating different approaches to content***

#### **Set 1: Stages of HIV**

##### **Illustration 1A: Stages of HIV**



**Figure 76. Illustration 1A: Stages of HIV (Couple)**

All of the 23 participants identified the pictures in this illustration as denoting people. 16 said a woman and a man, and three referred to people or (more implicitly) by saying “they” or “this one”. Thus, all participants could identify the very basic subject matter, the iconic or first layer of meaning. Two described the figures as “a mom and a dad” (according to the translated transcription), suggesting that a man and woman pictured together may be an index of a couple. One referred to the figures as teachers, which connotation I will explore below.

Thabile, a rural female participant aged 70 years, described the pictures only in terms of what the man and woman were wearing, saying,

I see a woman wearing a skirt with different colours and a striped shirt. She has hair braided and fastened above her head.

She continued in this manner to describe the people and what they were wearing. She did not engage with the illustration in any other way and said the same thing for all four frames. This technique of engaging with the denotation of the visuals appeared mechanical and possibly revealed a learnt approach to interpreting illustrations, of noting details such as clothing and fabric patterns, a descriptive approach commonly used in adult literacy classes as a starting point for discussions.

Thabile followed a similar routine of describing decorative elements in other illustrations, as did some of the other participants in this research. While this could show an individual’s appreciation for the more aesthetic elements of an illustration, it could more importantly be a strategy used when the viewer can’t understand or see the purpose of an illustration, that is, to focus on the iconic details at the most basic level. It also shows how detail might be distracting and divert the viewer from grappling with meaning. In focussing on a floral skirt Thabile did not seem to notice (or did not think it worth mentioning) that some of the figures are thinner or look unwell. It should also be considered that some participants may prefer not to point out painful matters such as symptoms of illness.

Eight of the 23 respondents (35%) interpreted the four frames as showing different people in each frame. When asked for reasons, three of the seven answered that the body size changes (which were intended to show the same people losing weight) meant that they could not be the same people. In other words the four frames did not communicate the passing of time or a narrative syntagm/progression to these viewers.

Apart from Thabile’s description, the clothing details were not noticed as being significant, and thus did not fulfil the purpose of character conservation between different pictures as was

intended. Similarly, both people were given the same facial features and hairstyles in each picture as far as possible, but this was either unsuccessful or simply not noticed by these participants.

Some of the small physical details in different frames, such as marks to suggest a skin rash/sores, or changed posture in the thinner 'sick' figures, possibly contributed to Dumisani's comment that they were all different people because some were "old" and others were "young". Dumisani was a 40-year-old man at an urban centre.

The interpretations of 13 participants corresponded with the intended meaning – that the man and woman were the same people in all four frames, and were "not well" or "sick".

Seven participants made alternative interpretations. Mandla described the figures as teachers, based on their clothes, and said they were different people, some of them sick. Two described what they thought the people were doing, rather than stating that they saw a man and a woman: Muzi, a man aged 19, said,

I think they are waiting to go on a bus. (*Indicates third picture*) Maybe there was a quarrel because this one is looking sad. The man looks sick because he has his hand on his stomach. *Prompt: What makes you think they are waiting for a bus?* The way they are standing. This is a sick family. *Prompt: Are they the same or different people?* Same people.

Philisiwe, a 38 year old at an urban centre, said,

In the first one, a woman is scared. The man was shouting and the woman is upset. Second one, man and woman are happy. Third one, they look happy. In the fourth one they are neither happy nor sad they are just in between. *Prompt: Are these the same or different people?* Same people.

In addition to the above description telling a rather negative 'story', other participants said:

A man and a woman are walking. They look scared (*in the last 2 pictures*).

Maybe there was a quarrel because this one is looking sad.

I see ladies and men. They are different people. They look happy, but these ones look lost (*indicates last two frames*). Physically they look like people who are not comfortable in life.

The following response reveals a very different interpretation of the pictures. Hannah, a 70 year old woman at a rural centre, said:

A good thing is happening because the man and the woman are together in all the pictures. *Do you think it is the same or different people in the different pictures?* Different people.

Altogether eight participants (35%) referred to almost all aspects of the intended meaning, that the couple were the same people in all the pictures, and that they were getting sicker in the last two pictures. Thandeka said, “It looks like they have TB.” The ages of these eight were spread between 19 and 76. Only three of this group (that is, 13% of all participants) mentioned HIV or AIDS by name. The three who referred to HIV/AIDS and the one who referred to TB were all urban participants.

Bongiwe’s response does not mention a particular disease, but demonstrates the different levels of interpretation clearly:

I see pictures, a man and a woman. A man and a woman. A man and a woman. A man and a woman. *What do you think they are doing?* I think they are getting married. *Do you think it’s the same or different people?* It’s the same people, it seems as if it’s Mkhize of Learn with Echo and his wife. *Is there a difference you notice with the pictures?* Yes there is. In the first two pictures they are fat. In the next two pictures they begin to lose weight. They look as though something is wrong or they are sick.

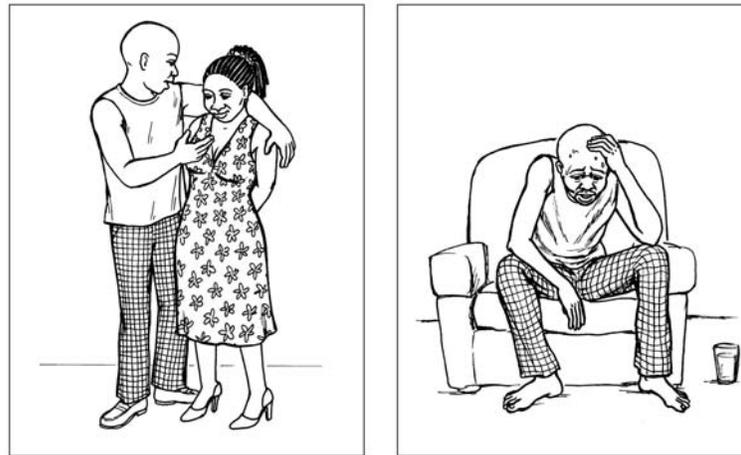
The “Mkhize” referred to is the main character in a popular weekly, serialised picture story published in the *Learn with Echo* newspaper supplement. Thus, Bongiwe showed that she recognised that the artistic style of Illustration 1A was like the illustrations in the *Learn with Echo*. In fact, the male character in Illustration 1A is different in appearance to Mkhize in several details, such as the shape of his face, his hairline and beard. However, the woman in Illustration 1A is rather similar in appearance to MaMsomi, the wife of the Mkhize character, especially in the first, ‘healthy’ picture. This comment is interesting because it tells us that Bongiwe had access to illustrated learning material (*Learn with Echo*) – although this should not be surprising because she was part of a literacy group at an established centre. The illustrating style seemed a powerful identifier of who was depicted in the illustration (for her), even though certain details of the individuals’ appearances were rather different in Illustration 1A.

#### *Summary of findings for Illustration 1A*

While the majority of the participants noticed significant details at the iconic level, such as size differences between the figures, gestures and posture, just over half were able to partially interpret these as intended, as indices of illness. The interpretations of only eight participants’ referred to most aspects of the intended connotation, and most of these were among the urban groups. Several participants constructed short, idiosyncratic narratives based on their own experience.

Neither age nor prior formal education level seemed to exert as much influence as the urban/rural divide. Urban participants seemed to be more able to mention the names of diseases directly. Is it possible their rural counterparts were constrained by culture from naming HIV/AIDS? Altogether only 13% of participants can be said to have correctly interpreted this illustration in line with its intentions.

### **Illustration 1B: Stages of HIV**



**Figure 77. Illustration 1B: Stages of HIV (Before and after)**

#### *Participants' responses to Illustration 1B Picture 1*

All of the participants could see that this picture denoted two people, and 12 named the figures specifically as a man and a woman. Thembani, said, “These two are just standing.”

Ten other responses referred directly to the connotations, as in this example, “This is a picture of love”. Ten noted that they were “hugging”. Eight participants stated that the couple were in a ‘love’ relationship, in other words a sexual relationship. For these participants, the posture and gestures indexed this connotation. Thokozani, a 20 year old man from a rural group, said that the people were talking and the man was begging the woman, the implication being that he was begging for sex. Two others also stated that the man was “begging the woman”, and one of these, Jonas, a 76 year old urban-based man, added that they were fighting – perhaps suggesting that the woman was not receptive enough to the man’s begging? In this interpretation does what others described as a ‘hug’ become physical intimidation/control?

### *Participants' responses to Illustration 1B Picture 2*

13 participants said that the man was the same person in both pictures, interpreting the syntagmatic relationship between frames as intended. However, many of these participants were prompted for clarity, by asking, "Do you think it's the same or different people?" Five others when prompted said the men in the two pictures were different people. Two of these five, Mandla and Thokozani, said this was because the man in picture two was older. The details of facial expression and posture thus functioned to index a different condition to the intended meaning. Silindile, who was not prompted, clearly thought it was two different men for the same reason:

*What do you see in these pictures? A lady and a boy. An old man. He is so ugly!*

Ten – almost half of the participants – said that he looked sick. Thabile went so far as to place the man in a hospital setting, misreading some of the icons:

*The man is sitting on a trolley bare footed and holding his head. I think he is sick. Why do you think he is sick? He is in a trolley and is drawn as if he has drips, and there is a potty next to him.*

In this version, the armchair became a trolley and the drinking glass, a potty. Alternatively, Lindiwe suggested:

*I think it's the same person but in the one picture he is well and in the other he is now mentally ill, because physically he looks the same.*

12 participants – just more than half – said that the man was thinking, wondering or worried. One said that he was stressed out by bad news.

Three mentioned that the man had a glass, and two suggested it contained water. These are plausible iconic interpretations of this picture. Three suggested he was drinking alcohol, and one, Dumisani, said he looked "drunk, surprised or wondering" – the syntagms within this frame, linking the possibly irrelevant glass (according to my analysis in the previous chapter) and the man's posture resulted in an unforeseen ambiguity, drunkenness, as opposed to distressing illness.

### *Summary of findings about Illustration 1B*

Apart from linking the two pictures by recognising that it was the same man in both pictures, only two participants, Nondomiso and Thandeka, constructed narratives that referred explicitly to the content of both pictures, with a causal link between the two. The first, below, is different to the intended interpretation of the illustration. Nondomiso, 39, from a rural group, said:

Boy and girl (*first picture*). The boy is thinking (*second picture*). ... He may have had a fight with his girlfriend, now he is feeling bad.

Thandeka, an urban woman aged 35, was close to the intended interpretation, stopping short of naming a particular illness, saying:

I think the two people were lovers, but the man didn't know that the woman is sick ... Then the man got the sickness and now he is also sick.

I think HIV infection is implicit in this interpretation, in our social context of HIV/AIDS as a sexually transmitted disease. Only Didizana, an urban-based woman aged 44, who reported no formal education at all, mentioned HIV, and was prompted:

They are in love, boyfriend and girlfriend. He is now sick. *Do you think it's the same person?* Yes. *What do you think makes him sick?* I think it's HIV.

This response is close to the intended interpretation for these pictures. However, it seems too optimistic to claim that the stated hoped-for message, the progression of HIV infection from apparent wellness to AIDS-related illnesses, has been communicated solely through the pictures in this illustration. Not all the information contained in that concept is conclusively present in these short responses.

As a researcher one brings one's own preconceptions of what one wishes or expects viewers to see and comment on, and thus should beware of unconsciously filling in the gaps between the few sentences of a participant's response by projecting one's own knowledge or interpretation. There is also the influence of all the other pictures to do with health (the paradigm) that surrounded this illustration in the interview, and the fact that this context may have directed many of the participants to look for and comment on health issues by default. Therefore, while the two responses quoted last, above, may seem to be close to the intended message, this is an optimistic conclusion.

Perhaps the most interesting thing to emerge from the testing of the two pictures in this illustration is that almost half of the participants did not automatically look for links between the two frames, or even seem to realise that there is any connection at all between the pictures. This means that, in the absence of text anchorage, the syntagm of the intended message is lost, that a sexual relationship can result in a disease that takes a person from a state of good health to debilitating illness.

### Illustration 1C: Stages of HIV

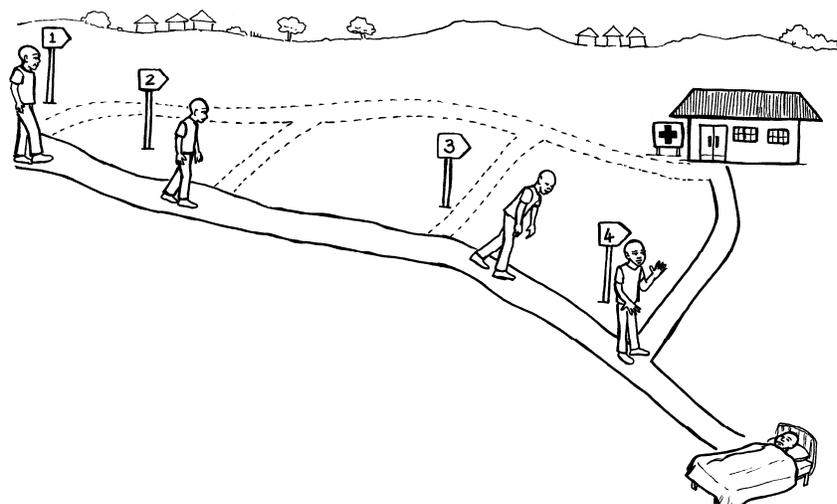


Figure 78. Illustration 1C: Stages of HIV (The road to AIDS)

All the participants were able to describe something of the denotation, and most mentioned the significant icons – a road, a clinic (sometimes described as a church, house or school), people. The barest description was incomplete, as follows, from Silindile:

It is a boy, boy, boy, boy. They are walking here and this one is standing.

The use of the word “they” suggests that she interpreted the figures as four different people.

Mandla gave a more complete description but without inferring much of a narrative:

Houses, sky, trees and grass. A board, a boy walking on the road. Here also a board, a boy walking on the road. And same here, a board, a boy walking on the road. This is a board and a boy standing. *Anything else?* Man lying on the bed. House with two doors and two windows.

From the above responses, and all of the others, it was clear that not one participant thought that the figures were all meant to index the same person at different times or at stages of a journey.

Thokozani named the bed, the clinic, mountain (background horizon line), tree, houses, road and four people walking on the road, but he said, “I really don’t know” when asked what story the illustration might be telling. Another short response, from Nondomiso, contains the kernel of the denotation with an inference of the figures purpose or direction of movement:

House, clinic, clinic’s bed, and people going to the clinic.

Altogether 14 participants identified the main building with the cross symbol as a clinic or hospital. Ten of these were from the urban group, and only four were rural. Amongst the other

responses from rural participants, Hannah said the building was a school, while four identified it as a church, and three as a house. The clinic/church interpretations is clearly a case of different understandings of what a cross symbol signifies, for it can mean both of these things, depending on the context, although the shape of the building could be either, especially in a rural context.

Thabile, a rural woman aged 70, identified the road as a train:

I see a house, a train, and people on the train, houses, and I don't know what is written here (referring to numbered sign).

Of the participants who identified the clinic/hospital, not one description was close to the intended interpretation of the road as a metaphor for the progression of an illness. Not one participant mentioned HIV/AIDS. Of the fifteen who made the clinic/hospital connection, four said the people were going to visit the sick person (lying down), while others simply said they were going to the clinic, possibly implying that this was for their own treatment. For example:

A hospital. People entering. I think they are visiting the one who is lying on the bed.

And:

I would say it's a hospital, but this one is laying on the road and not feeling well. *Anything else?* 1, 2, 3, 4 ... 1, 2, 3 are walking, 4 is going to greet the person in the bed. *Anything else?* This is a hospital and the sick person is supposed to be inside but he is lying on the road. The weather is changing and I see clouds and old rondavel houses. Also the trees. The moon (bush).

Bongiwe, aged 51 from a rural group, mentioned a church rather than a clinic, and commented:

People walking on the road to church. Sick person laying on the bed and the bed is on the road. I am confused though because if people see a sick person they should call an ambulance to take the person to the hospital.

### *Summary of findings for Illustration 1C*

In this example, urban participants were better able to interpret certain details, such as the clinic, according to the intended meaning, while rural participants' interpretations of this were more diverse. Although all the participants could identify most of the icons, this collection of objects did not relate to index the intended message about the progression of HIV towards AIDS in stages. Elements of the illustration were simply not mentioned as important, such as the dotted 'paths' to the clinic, and the signs with number symbols on were simply mystifying when they were noticed. This suggests these were the most difficult of the signs to interpret. The figures were interpreted to be five different people, and not the same person as was intended. In other

words, participants interpreted the illustration very literally, so the road metaphor did not serve as an index of another type of journey.

The reasons why this diagram can hardly communicate the intended meaning on its own are clear, when one considers the findings of the semiotic analysis of the previous chapter. This illustration has a complicated dual message (get treatment, or get sicker), and has a mixture of sign types and visual conventions in one picture, resulting in a high cognitive load. Making a sketch like this may be helpful in mediated settings, such as the way that the doctor I consulted used it for treatment literacy training, but it does not work at all on its own as an illustration.

### **Summary of analysis and findings for Set 1, Illustrations 1A, 1B and 1C: Stages of HIV**

None of the illustrations in Set 1 was particularly successful at communicating its intended meaning on its own, without any anchoring verbal text or oral discussion. This supports Barthes' and others' contentions that visuals are polysemous or ambiguous, and thus much more widely open to interpretation than written texts.

Of the three, Illustration 1A had the highest intended interpretation rate. Although 57% of participants recognised that the same two people appeared in all four frames, and that they looked healthy in the first picture but looked sicker in the others, only 13% of the participants named the illness as HIV/AIDS. The simplicity of the repeated icons, with depicted physical differences functioning as indices (or symptoms), led to a more direct object-sign relationship, although this was hampered by the reliance on the frame convention to create the syntagm. This finding is congruent with the result of the semiotic analysis conducted of these illustrations in the previous chapter, that this illustration was semiotically the least complex of the three.

Similarly, in illustration 1B, although 57% of participants could see it was the same man in both picture 1 and 2, and 43% said he looked sick in picture 2; only 9% linked these facts in an account explaining why he seemed fine in one picture and was not fine in the other. Illustration 1C was the most difficult for participants to interpret, and not one interpreted the metaphor as intended.

Of the three illustrations, 1A was the most analogical depiction of the stereotypical visible effects of an illness like HIV/AIDS – weight loss amongst other ailments. The few participants who correctly interpreted the intended connotation of 1A seemed to be aided by their prior knowledge and experience (interpretants). Illustration 1B was similar but relied more on creating different scenarios to suggest behaviour and long-term consequences, and perhaps demanded

more from the viewer than 1A in terms of linking the scenarios as a syntagm, and filling the gaps with their own interpretations of what happened between the frames (See "scene-to-scene closure" in McCloud, 1993: 70-73). As a metaphor, Illustration 1C was the most conceptually demanding of the three, especially as it combined visual elements – an almost map-like diagram with analogical elements such as a figure (repeated) in the landscape – resulting in a high “cognitive load” (Carstens et al., 2006: 228).

The most significant interpretive differences seemed to be between urban and rural participants, in that urban participants’ interpretations included both denotative descriptions and further layers of connotation, whereas a greater number of rural participants stopped at the denotation, or gave only partial connotative descriptions, and many of these were incorrect.

## **Set 2: The HIV Virus**

This set of illustrations explored different ways of depicting the Human Immuno Deficiency Virus (HIV).

### **Illustration 2A: The HIV virus**



**Figure 79. Illustration 2A: The HIV virus (Woman pointing)**

### *Participants' responses to Illustration 2A*

All of the participants recognised that a woman was denoted in the illustration, and all but six identified the board. Of these, Silindile said it was like a box, and Bongiwe suggested it was a table, while others said they did not know what it was.

Eighteen of the twenty-three participants inferred that the woman was teaching, based on the index of the woman's gesture combined with the board icon. Eleven mentioned HIV as the theme of the woman's activity, due to identifying the ribbon on her shirt as the sign for HIV/AIDS. Five mentioned that they had read the word 'stop' written on the shirt. Only one participant clearly identified the object pictured on the board as HIV – this was Busisiwe, the urban female participant with the highest level of formal schooling who said,

I think she is showing some kind of virus, maybe HIV because she is wearing a sign that says 'Stop HIV'.

Two participants seemed to refer to HIV without openly identifying the attempted representation of the virus within the "teaching" illustration, by saying, "destroying cells in the body" (Didizana) and "explaining about soldiers" (Nosipho). This term 'soldiers' most likely refers to a metaphor commonly used by healthcare professionals when explaining the cells of the immune system to HIV-positive patients. I would like to think that the rather symbolic virus shape was recognisable to these participants by conforming to conventional virus depictions as I argued in previous chapters, but I cannot be sure of this.

Some participants gave rather poetic interpretations of the virus shape. Hannah suggested, "a flower she has drawn", Siphosiso said, "a bird's nest, getting old, or a heart", while according to Philisiwe, it looked "like a tortoise".

Thus although almost half of the participants (48%) linked the illustration to HIV in some way, only one identified the virus in the illustration by name.

## Illustration 2B: The HIV virus

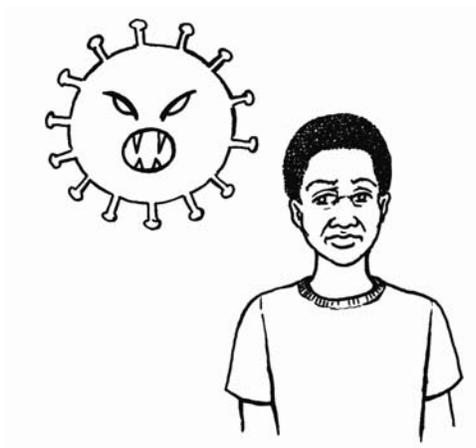


Figure 80. Illustration 2B: The HIV virus (Monster metaphor)

### *Participants' responses to Illustration 2B*

All of the participants recognised a person in this illustration. The gender of the person depicted was not important to the meaning of the illustration, although it was meant to be a young man. Nine said it was a man, while four participants said it was a woman, and the rest did not specify a gender. Nondomiso thought it was a child.

More interesting are the different interpretations of what is indexed by this person's facial expression. Of the 11 participants who commented on the person's state of mind or health, some thought he was happy or 'okay', some that he or she was sick, while others said he or she looked serious, worried, or angry. It might be expected that the facial expressions of figures in illustrations would be relatively easy to interpret (in comparison with unfamiliar objects or more abstract symbols) because people observe and interpret facial expressions in real life every day. Certainly in this case the only real index of the person's mood was the facial expression, and participants interpreted this in many different ways. Altogether only five participants (22%) made it clear that they could see the person was not happy.

Only Thabile remarked on the 'cropping' of the figure, although it is not certain whether she meant the *drawing* is not finished, or that it is a picture of a person who is missing some body parts:

I see a woman, she is wearing a dress with sleeves, and she does not have arms. Her body is incomplete. Then there is a round thing drawn next to her. *Prompt: What do you think it is?* Something that looks like a watch.

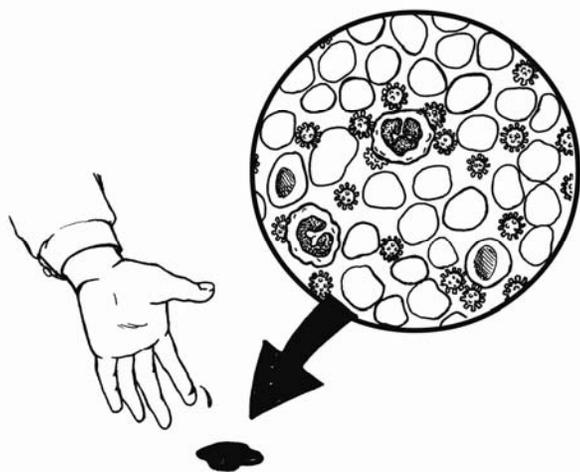
Altogether four participants identified the hovering HIV ‘monster’ virus as a watch, and all of these were rural women. Five other participants interpreted it as a sun – three rural and two urban. Dumisani said it was a pig or porcupine head. Four participants articulated that they saw eyes, mouth and/or teeth but did not identify what the owner of those features might be, while two said it was simply a head. Most participants expressed confusion about what this shape might be, and six simply said they did not know, or could not see what it was.

With this illustration unintended interpretations seemed to be the rule, however, one participant gave more than a literal description of the appearance of the ‘monster’ virus to suggest at a more conceptual interpretation:

I see a drawing. I think its blood cells. This man, I think he is now sick.

This response was from Didizana, the urban female aged 44, who had reported no prior formal schooling. She had also mentioned cells with reference to the virus on the board in Illustration 2A. It seems likely that personal experience combined with the likely increased exposure to visuals and health resources in an urban context equipped her to interpret the illustration in this way. ‘Blood cells’ (combined with the idea that the man is sick) is conceptually on the right ‘track’, in terms of scale and some association with a virus like HIV. However, this response does not explicitly contain the information that the illustration intended to convey. Therefore, no participants interpreted this illustration as intended.

### **Illustration 2C: The HIV virus**



**Figure 81. Illustration 2C: The HIV virus (Blood cells)**

### *Participants' responses to Illustration 2C*

The hand in the illustration 2C was named as such by everyone but Thembani, who noted only that the arrow symbol looked like a road sign, and said of the blood (from the finger), “This looks like a hat. I don’t know what it is.”

Eight participants openly stated that they did not know what the circle with shapes inside it was. Other participants, both rural and urban, showed confusion but attempted to interpret this shape, in the following ways:

... a circle with many things, they look like worms (Nosipho)

... a finger pointing to something from a river (Philisiwe)

... it is either a honeycomb or a cake (Thokozani)

... a spear pointing. Looks like its pointing at a dish (blood drops) (Sifiso)

... sun, clouds, a heart and a star (Sipho)

Busisiwe’s response below reveals that added detail intended to clarify and enhance understanding seemed to make the other parts of the illustration that the participant *did* understand more confusing to her:

The hand, I think the hand is bleeding. *Prompt: Anything else about the rest of the picture? I don’t understand it.*

The shapes inside the circle were explained as flowers, trees, stones and “decorations” several times. Thabile, the 70-year-old rural woman, offered a beautifully logical interpretation, possibly influenced by some experience of craft making:

This is a hand. A round thing with decorations. The hand is decorating the round thing.

Although not mentioned, it is possible that the blood drops represent paint in this interpretation.

Only four of the 23 participants (17%) said that the hand was cut or bleeding. All of these were participants from the urban centres. Mary interpreted the connotation of this as intended:

A cut, blood flowing, looks like they want to show that he is infected, the infection can be transmitted to the people through the cuts in the hand.

Although HIV is not mentioned by name, it is strongly inferred. The arrow and the circular ‘enlarged blood cells’ part of the illustration seemed to have little role in these intended connotations. It seems that some urban participants were more able to understand the parts of the

illustration where they could identify something familiar. Mary's response above suggests that she was able to integrate her prior knowledge to predict what a depiction of bleeding is likely to mean.

### **Summary of analysis and findings for Set 2, illustrations 2A, 2B and 2C**

Like Set 1, none of the illustrations in Set 2 were really successful at communicating their intended meaning. However, Illustration 2A was better understood than the 2B and 2C. No participants actually named HIV with reference to 2B, or 2C, and both these illustrations were poorly understood.

Like Illustration 1A, Illustration 2A was the most 'literal', analogical representation. It contextualised the depiction of HIV in a possible real-life scenario. The indexed training situation was understood by 78% of participants. The inclusion of the ribbon symbol helped 48% of participants to make an association with HIV, however, only one participant out of all 23 actually suggested that the picture on the board represented the virus HIV.

The vast majority of participants interpreted the scary creature in Illustration 2B very literally, whereas, as discussed in Chapter 5, the intended interpretation relied on the metaphor of HIV as a scary creature, figuratively hovering over a person as a "graphical device" similar to a thought bubble (Boling et al., 2004).

Illustration 2C was confusing to most participants, and again the majority attempted to interpret it very literally. Yet the illustration is very conceptually taxing, because it conflates sign types to depict in simplified terms the literal context of where HIV is found, and attempts to show both what can be seen (blood) and what can be known but not easily seen (the cells which make up blood). In the light of the semiotic analysis and most of the participants' interpretations, that one participant did manage an almost complete intended interpretation seems upon reflection incredibly surprising and strange!

Again, the urban-rural dichotomy seems to be the most significant factor influencing the extent to which participants describe different layers of meaning. Urban participants tended to describe more than just the denotation, and included the connotations of the icon combinations. The few intended connotations were from participants among the urban groups.

### Set 3: Safety for caregivers

#### Illustration 3A: Safety for caregivers



**Figure 82. Illustration 3A: Safety for caregivers (Three frames)**

#### *Participants' responses to Illustration 3A*

The first interesting thing to note about many of the responses is that 11 of the 23 participants 'read' the pictures from bottom to top, starting with the one at the bottom of the page, instead of following the top-to-bottom of the page convention. Seven of these 11 participants were rural.

Of the other 12 responses, eight went from top to bottom, and two were slightly unclear – by the recorded responses – about which of the pictures were being referred to (a lapse in the interview/recording methods), for example:

I see hands. A dish for washing, it has water in it. This one looks like, washing of hands. It's as if the person is holding here (the breast).

The above seems to refer only to the top picture, but one cannot be sure which picture the last line refers to. Similarly,

I see a woman and man. These two look like they are shaking hands like this (showing). This one has bandaged hands. This one is showing hands like this.

From the first two lines and the last one, it is difficult to say for sure which pictures are being referred to.

Busisiwe discussed the three images together, linking one, two and three in a narrative:

The first picture I see somebody is washing their hands. I think the third one maybe is drying them. Or maybe, maybe they are showing us maybe if you have some kind of sore or open wound you must first wash the wound, then clean it properly then put a bandage.

Although these pictures did not need to be looked at in a particular order, often framed pictures in groups *are* meant to be looked at in a certain sequence to get the intended message, according to the convention of reading from top to bottom, and from left to right (McCloud, 1993: 86). This instance and others in this research support literature which claims that this cannot be assumed (Hoffmann, 2000: 142; Linney, 1995: 23). Busisiwe's interpretation is that of causal relations between the frames – a logical progression of a given situation, rather than the intended 'parallel' suggestions of three different ways to protect against infection.

The middle frame was misinterpreted by Busisiwe, perhaps influenced by syntagmatic relations with the other pictures – hands in plastic bags with soiled sheets did not fit the logic of the hand washing (above) and plasters (below). The most recognisable icon in the middle picture is the hands, and thus the practical way to make sense between the other two frames is drying the hands so the plasters will stick – a wonderful example of inference in order to make sense of a semiotically obscure depiction and fill a conceptual gap.

Other responses to the three different pictures in this set are discussed separately, picture by picture.

*Illustration 3A, Picture 1 (top): Hands with basin of water and soap*

10 participants described the icons, or denotation, as intended, although not all mentioned every detail. All said hands; some said a washing basin and some named the soap. Of these 10, three summed up what they saw by saying “washing hands”.

Six participants' interpretations diverged further from the intended meaning, including “open hands”; “shaking hands, holding something”, “holding a pot, ball, or washing hands, I can't see clearly, I don't know”, and “hands holding a dish”.

Four participants said “washing hands”, without describing the icons of hands, the soap and the dish of water separately. Only one participant, Busisiwe, mentioned a reason for washing hands, and this was the response already quoted above that discusses the three pictures together and mentions “if you have some kind of sore or open wound you must first wash the wound, then clean it properly, then put a bandage.” It is possible that all or most of the participants know the reasons for washing hands, to kill or remove germs to avoid spreading disease, but this cannot be assumed.

In terms of the rural/urban divide, seven of the 10 correct interpretations of the denotation were from urban participants. Descriptions of the icons themselves (both intended and unintended meanings) were more evenly spread between rural and urban participants, although slightly more occurred in the rural group. Amongst this group, older participants (Thabile and Hannah both aged 70, Elizabeth 61, and Sifiso, 49, and Nondomiso, 39) were least able to understand what was depicted, and Hannah was not able to identify anything at all in the picture. This suggests an emerging pattern, that urban participants are slightly more likely to infer (or express?) indexical meaning from the icons they see.

*Illustration 3A, Picture 2 (middle): Hands in gloves/packets with dirty washing*

None of the responses to the middle picture of Illustration 3A were ‘correct’, except perhaps, “Preparing to wash clothes,” from Muzi. Although he seems to have recognised what was intended to be soiled linen or clothing, no mention was made of what this preparation to wash entails in terms of gloves or packets on hands, which was the most important part of the intended message. Muzi may have understood this, but that is not evident in the concise response. Thus technically, all of the participants’ comments for this picture are categorised as alternative, i.e. unintended, denotations.

Four participants said they were not sure what the picture was at all. Elizabeth said, “Still hands” (referring back to the picture below on the same page). Seven others identified hands but expressed confusion at what they hands were holding or doing. Siphso said, “Has a towel in hands.” All the other responses bar two remained in keeping with the washing theme intended by the illustration as a whole, but with misinterpretations:

Washing a sick person. (Didizana)

Washing hands by the river. (Mandla)

There is soap on her hand. (Philisiwe)

There were two completely unintended explanations. One participant said, “Pouring medicine on hands”. Jonas, the 76-year-old urban participant, said,

Trying to open something under clothes. Pulling up a woman’s skirt!

This teasing comment both surprised and entertained us.

*Illustration 3A, Picture 3 (bottom): Hands with plasters*

Eight participants (35%) identified the denotation of this picture as intended, that is, as hands with plasters, or bandages. Only two of these were rural. 10 participants (43%) suggested the hands were injured, some mentioning with cuts or sores, which implies that the plasters indexed this. Three of these interpretations were from rural participants. Two said simply, “Hands”, either not noticing the plasters or just not mentioning them. Four participants seemed to wonder what the hands were doing or reaching for, with three saying they were not sure what they were holding. Bongiwe related this picture to the top picture in an unexpected way:

They (the hands) are taking something out of this (top picture). I don’t know if it is someone giving birth?

This interpretation seems plausible if one looks at the other pictures again, which could suggest the equipment and activity surrounding a birth. Bongiwe described the other pictures like this:

(Top) washing basin and person’s hands. It seems as if they are shaking hands but they are also holding something.

(Middle) hands holding something.

*Summary of findings for Illustration 3A*

Almost half the participants (43%) identified hand washing in Picture 1 at the top, and the same number recognised plasters or hands with injuries in Picture 3 at the bottom. However, not one participant mentioned hands protected by gloves (or plastic bags) in the middle picture, and only one may have come close to the intended interpretation by suggesting it showed “preparing to wash clothes” – some prompting would have been useful at that point to find out if “preparing” meant that the participant had noticed the covered hands. Only 35% of participants said the hands in picture three had plasters. Therefore the average rate of intended interpretations for this illustration (all three pictures) is 26%. Only one participant clearly described a syntagm between the three pictures together, although she did not mention the safety of caregivers but referred rather to cleaning and covering a wound.

### Illustration 3B: Safety for caregivers



Figure 83. Illustration 3B: Safety for caregivers (Three objects)

#### *Participants' responses to Illustration 3B*

Four participants 'read' these three pictures starting from the bottom moving upwards, while eleven followed the conventional order of starting at the top and reading down the page. Five participants started in the middle, with the gloves, and four of these were not able to identify the other two pictures above and below at all – which indicates a strategy of starting with the most immediately comprehensible picture. Thabile, however, started at the top (or the bottom) but could only venture an interpretation of the gloves (as hands), saying, “A drawing, hands, another drawing”. Thus although Illustration 3A had low intended interpretation rates, overall this illustration, 3B, with the objects on their own and no context at all, scored even lower. These icons did not seem to index anything to any of the participants, according to their verbal responses. The only picture to fare better than its equivalent in Illustration 3A was the gloves, the details of which are discussed below.

#### *Illustration 3B, Picture 1 (top): a bar of soap*

This picture was different to the others in this set because the linguistic symbol 'SOAP' appears on the bar of soap, iconic in that many soap bars do have text or images imprinted on the surface, but also potentially providing anchorage. Even with the word 'soap' included, only nine out of

23 participants (39%) interpreted this picture as intended. Of these, Zandile and Mary mentioned foam, and Sibongile said “waters”, referring to the surrounding details which were intended to be foam and a bit of water. Therefore clearly the use of a word did not help very many of the participants at all, due to fact that many did not speak or read much English.

Three participants said nothing about this picture, Thabile said it was ‘a drawing’, and five said they did not know what it was. Four participants (17%) interpreted the soap differently. Sifiso said it was “something to decorate with”, Nondomiso suggested “clouds”, Muzi said a “dish or plastic (bowl) or water in it” and Philisiwe said “a stamp”.

*Illustration 3B, Picture 2 (middle): gloves*

This icon was the most recognised of the three in Illustration 3B. 11 participants correctly interpreted this picture as gloves. Only one of these was from the rural group, 20 year old Thokozani. Only two urban participants said “hands” only, while five others named hands and gloves, with three of these saying “hands *or* gloves”, showing some uncertainty or changing their opinion from hands to gloves after having said hands as the first impression. All of the rural participants except Thokozani said this picture showed hands. I have heard that surgical gloves are not usually readily available in rural areas, and the response to this picture suggests that this is indeed the case, explaining why rural participants are less likely to recognise gloves in illustrations.

Only Muzi explained what gloves indexed in his interpretation, and without being prompted:

Gloves to put on and be warm when it’s cold or if someone is sick.

Others who were prompted, Thandeka and Didizana respectively, said:

We put on gloves before we dress a wound or when picking up rubbish.

Put on gloves to wash someone sick with HIV.

Muzi, Thandeka and Didizana were all in the urban group.

*Illustration 3B, Picture 3 (bottom): a plaster*

Again, rural participants found the picture of a plaster on its own very difficult to interpret, suggesting that – like surgical gloves – plasters are also not commonly available in the average rural household. Thokozani and Nondomiso were the only two rural participants among the 11 who correctly interpreted the plaster picture. Muzi was the only participant who said what a

plaster is used for, unprompted, saying, “Plaster for an injured person.” Three rural participants and one urban participant said nothing about this picture. Four rural participants said they did not know what it was. Thabile said it was “a drawing”. Three others made alternative interpretations – Lindiwe said it was “a sanitary towel”, Bongiwe said, “towel for washing hands”, while Dumisani said, “This looks like a shoe or a bag”.

### *Summary of findings for Illustration 3B*

Only three participants linked the three pictures in this illustration as a syntagm, even though two had misinterpreted the plaster and the gloves pictures. The first of these two was Bongiwe, a rural woman aged 51 years, who said:

I see the soap (read ‘soap’). Hands. Towel for washing hands.

The other was Lindiwe, a 23 year old woman from the same rural centre:

A sanitary towel (bottom picture). Scratched up hands. Soap. This woman has been using sanitary towels now she is using soap to wash blood on her hands.

The third participant, who correctly identified the icons and their intended indexical associations when linking the three pictures, was Didizana, who again showed her experience and knowledge of HIV/AIDS:

Soap, gloves, plaster. *What do you think all of these things do?* Put on gloves to wash someone sick with HIV. If you have a cut you put on a plaster before washing the person.

This was the only ‘correct’ interpretation of this illustration. The average percentage of intended interpretations for the three pictures in this illustration was 45%, although this refers only to the denotation of the pictures. None of the other participants expressed that the icons together connoted the concept of safety for caregivers, or even anything in between.

### Illustration 3C: Safety for caregivers



**Figure 84. Illustration 3C: Safety for caregivers (Woman with gloves)**

#### *Participants' responses to Illustration 3C*

All the participants recognised that a person was depicted, although some simply described aspects of the picture, such as the arm and hand positions of the figure. 13 participants mentioned that she had gloves on. This time almost half of these (six) were rural participants, a significant increase in recognition of the intended denotation compared with the de-contextualised depictions of gloves in illustrations 3A and 3B.

Only two participants explicitly stated that the gloves indexed health care. Thokozani said, “A nurse, putting on gloves”, while Didizana said, “I think this woman was washing someone, now she is taking off her gloves.” Muzi said, “I see a person putting on gloves, maybe going to clean somewhere.” However, as he does not say what kind of cleaning, he may have meant general housework or gardening.

10 participants did not identify the gloves, and four of these were preoccupied with the meaning of the woman's hand positions, rather than noticing something on her hands. Siphos said, “I see one raising hands like this”, and the other three clearly identified the gesture as *ukhangizile*, which means holding out one's hands politely to receive something:

I see a woman, her hand stretched out to accept something. (Hannah)

Woman, hands stretched out, I don't know what she's asking for. (Elizabeth)

Woman with her hand stretched out, *ukhangizile*. (Sifiso)

Three other participants saw the woman had something in or on her hands, but could not say what it was:

A woman with her hands outstretched, looks like she is carrying something, even though I cannot see it properly. (Dumisani)

A person has something on her hand and she wants to give it to someone. The person is thinking. (Philisiwe)

This woman has either a cloth or a towel, but there is something in her hands. (Silindile)

Two rural participants made very different interpretations. Zandile said, “There is something she is pouring into her hand,” and Thabile described many details about the woman, her clothes and “drawings”:

Woman in flip-flops (sandals), a white dress with drawings on the side and her shirt is the same. Her arms also have drawings on the side. The arm is stretched out like this.

The “drawings on the side” of the arms most likely refer to the whole arms not only the lines of the gloves on the hands, as this participant described the clothes in the same way. Thabile’s default approach with many illustrations involving people was to describe the details of their clothing, including fabric patterns, for instance. This seemed to be especially so if the indexical meaning of the illustration was not clear to her. In the absence of other explanatory signs, here she noted the outlines of the forms.

### **Illustration 3D: Safety for caregivers**



**Figure 85. Illustration 3D: Safety for caregivers (Woman with gloves in context)**

### *Participants' responses to Illustration 3D*

All 23 participants correctly interpreted the denotation of this illustration, and there were very few 'one word' or 'one line' responses, in comparison with the other illustrations in this set. The length and detail of the responses were richer, in proportion with the increased number of icons and amount of detail in the illustration, which clearly enabled more participants to better verbalise more narrative interpretations. Typical interpretations included:

A person and a woman that is not feeling well. This one has come to assist. A covered-up potty, bucket that is used for washing the sick person's clothes and a dish used to wash for the sick person.

A woman laying down. A log with towels, soap, a washing basin with clothing in it. *Prompt: What story is the picture telling us?* It seems as though the one laying on the bed is ill, and the one with the gloves is assisting the sick one.

I think the person is putting on gloves to help the patient, maybe hold and wash the patient, or to wash the patient's clothes. *Prompt: Anything else?* A dish and water and soap next to it. *Why do you think it's important to put on gloves to assist the patient?* To protect herself from getting the sickness or the germs.

Two participants said the environment was a hospital, and two said the woman was a nurse, which also implies a hospital. All four of these were rural participants. The gloves seemed to play a role in some of these interpretations, for example, Sibongile said,

I see a washing basin with water in it. A person laying on the bed, and it's as if it's in a hospital. I think this one is here to assist because I see her putting on gloves. A bucket and a table. *Prompt: What makes you think this is a hospital?* Because of the gloves and the water. *Prompt: What is the difference between the hospital and home?* If it was at home there wouldn't be gloves.

Similarly, Nondomiso said,

A nurse, putting on gloves, a patient is lying on the bed, water. *Prompt: What do you think the nurse is doing?* Putting on gloves to assist this one (the patient).

Altogether 16 participants (70%) interpreted the connotation of the general content of the illustration as intended, that the woman in the bed was sick and the standing woman was looking after her. However, the implicit context of the scene is intended to be a home situation, because cross-infection is an issue for all caregivers and not just nurses in hospitals. This suggests that for many of the participants, particularly rural ones, and their interpretations of 'home' were not matched by the details denoted in this illustrations. It seems that the introduction of one or two unknown or unlikely elements (such as gloves) may interfere with how a scene is understood, however, it is also very possible that the illustration simply does not reflect what people's homes are actually like.

However, only nine (35%) of all the participants specifically mentioned the gloves, and only two of these said explicitly and after prompting that the gloves were to protect the wearer from disease. Five others implied a link, for example, Didizana ended her naming of the objects in the scene by saying, "... now she is taking off the gloves because she has finished cleaning the patient". This is similar to the last indented quote above. I would like to be able to say that all the participants who mentioned gloves did so because they understood the purpose of gloves in a caregiving situation. This seems likely, however, it is not very clearly articulated in every response.

### **Summary of analysis and findings for Set 3: Safety for caregivers**

The significant semiotic differences between Illustrations 3A and 3B, and Illustrations 3C and D, are reflected in the participants' interpretations.

Illustration 3D had overwhelmingly the highest intended interpretation rates, with 100% of the participants recognising the denotation of the scene, while 70% were able to partially describe the intended connotation of a home based care situation. However, the most important specific information of the intended message, that of caregivers protecting themselves from infection through glove use and other hygienic practices, was low, as only 35% of participants commented on the gloves.

Significantly more participants (57%) recognised the gloves on the woman in illustration 3C. However, the lack of surrounding context meant that those who did not recognise the gloves were confused and had no other details with which to scaffold their interpretations. The background detail providing a context for the woman caregiver in Illustration 3D did distract some participants from the gloves, but positively enhanced the way almost all participants were able to engage with- and offer responses to the illustration, compared with the responses to 3C.

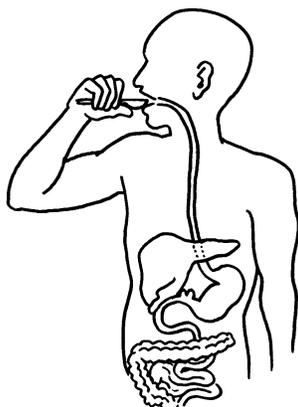
3A and 3B were not clearly interpreted by any participants. Less than half the participants identified the denotation of the different pictures that formed part of these two illustrations as intended. Interestingly, almost no rural participants recognised the depictions of plasters and gloves, while urban participants did, bearing out my sense that these items are not commonly found in rural households. Other researchers have found that unfamiliar objects tend to be more difficult for low-literate people to interpret than they are for more literate people (Carstens et al., 2006: 225; Linney, 1995: 23). Very few participants overall drew the intended connotations from each picture, and almost none linked the three pictures as all relating to a main message (all

forming part of an ‘organising’ syntagm). It was interesting to note the various orders in which participants discussed the three different pictures that made up illustrations 3A and 3B.

Certainly, illustrations depicting people in context such as Illustration 3C and 3D seemed to be more accessible for the participants in this study than cropped views of hands doing something, and isolated objects like a plaster or empty gloves. As noted in the semiotic analysis in the previous chapter, context sometimes comes at the price of sacrificing the specificity of the message contained in particular details which may not be noticed in a larger illustration with many more icons that may distract viewers.

#### **Set 4: Internal organs – The digestive system**

##### **Illustration 4A: Internal organs – The digestive system**



**Figure 86. Illustration 4A: Internal organs – The digestive system (Partial body outline)**

##### *Participants’ responses to Illustration 4A*

21 participants (91%) correctly identified the denotation of Illustration 4A as the outline of a person showing the “insides”. The two others also identified the shape as a person but I classified their responses as alternative interpretations. These are as follows. Thabile said,

A person with a pipe in his mouth. *Prompt: What is this below? (stomach)* A drawing. A drawing of what? It looks like a snake.

Elizabeth said,

A person. I am not sure what the person is doing and I can’t see his legs. *Prompt: Anything else?* I don’t know but there’s this thing that’s like a snake. I also don’t know what the person is holding in his/her hands.

Although these two did recognise a person their interpretations were very different to the intended denotation – they misinterpreted key icons, for the spoon was seen as a pipe, and the ‘internal’ depiction of the oesophagus and other organs, as a snake. Other, different interpretations seemed less extreme and thus I recorded these as being both in the intended and alternative interpretations. There were four such responses which seemed to straddle the categories, for example, Thembani said,

Pipe in the mouth. What are these, are these intestines? I think these are intestines. *Prompt: Is this picture showing us inside or outside?* Inside. *Prompt: Do you think the person is open or the picture is showing us inside?* Looks like the person’s body is opened. If I can see intestines his/her body is opened.

She correctly identifies intestines, but maintains that this is an index of an ‘open’ body. After the fact, it seems quite difficult to tease out and classify these meanings. I have made decisions about such responses by comparing them with other responses, classifying them in relation to what seem to be common patterns of interpretation. Other such responses included Hannah’s, who said,

No, I can’t see, can’t see. Looks injured, it goes down to the stomach. No, I can’t see.

Mary said,

A person. Their insides. He has a toothbrush, or a knife – what is it doing in his mouth?

Philisiwe said,

(I see) The way a person digests food. No, no! The person is eating and she is pregnant. The person shows how the baby gets food from the mother.

Mary’s toothbrush or a knife interpretation is, like the pipe, an alternative interpretation of the spoon icon, although she also correctly identified a person and their insides. Philisiwe fully interpreted the intended meaning (or connotation) of the illustration, with an implicit reference to the internal organs of the digestive system, and adds to this interpretation the depiction of pregnancy. For these reasons the responses quoted above are categorised as both ‘intended’ (in terms of understanding the diagram concept) and ‘unintended’ (in that the connotation has changed).

13 participants said the illustration showed a person’s insides, linking the spoon at the mouth to eating or drinking something that goes “down the pipe”. Eight of these were urban and five were from the rural group. Although only three named the spoon, four descriptions of eating and five of drinking medicine (nine altogether) implied a spoon. The four others were not sure what he

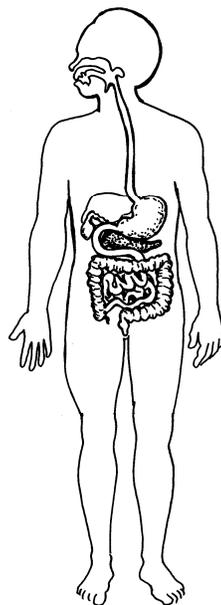
was drinking or eating and did not clearly identify the spoon, saying, for example, “Holding something and eating it, going down the pipe. Not sure what this is.”

Seven alternative explanations for what the illustration depicted included that the person was brushing his teeth (four), that there was a baby (two, including the instance discussed above), and that the person was injured/cut open (two, also discussed above).

#### *Summary of findings for Illustration 4A*

Strictly speaking only three participants (13%) clearly identified that the picture showed a person’s insides, and that what was put into the mouth went down into the insides, i.e. that this is the digestive system that processes what a person eats and drinks. However, the main intention behind this section of the research was to discover whether the participants would correctly understand the diagrammatic depiction of the unseen ‘insides’ in a conceptual rather than literal manner. There were only four participants who clearly really had interpretation problems, the two who said they saw snakes, one who described an ‘open’ body, and one an injured person. Therefore, it seems possible to say that on a basic level 13 participants (57%) understood the concept of such a depiction, even though many did not explain which internal organs they saw, or the connotation of such a depiction.

#### **Illustration 4B: Internal organs – The digestive system**



**Figure 87. Illustration 4C: Internal organs – The digestive system (Whole body outline)**

### *Participants' responses to illustration 4B*

As with illustration 4A, participants sometimes misinterpreted the details of the organs inside (i.e. which organs are depicted), but 18 out of 23 understood the conventions being used, that it was a diagram which indexed internal organs as they are, inside a person. Five participants misinterpreted the denotation completely, for example, Hannah said,

In this picture the person is injured on the cheek, throat, and stomach, and below the stomach.

Nosipho's interpretation was as follows:

A naked person with something on the tummy, looks like a wound or something.

By comparison, the only other participant who referred to a naked person also more or less correctly interpreted the depiction of internal organs – Dumisani said,

Looks like a naked man, intestines and lungs. *Prompt: What is this?* I don't know but it looks like a liver and lungs. *Prompt: What is this?* I think it's the throat, takes the food down to the stomach.

Thus, the 'literal' nudity interpretation did not interfere with this participant's response that both showed an understanding of the 'diagram' concept and its connotation. However, he does not clearly specify that the body is not actually 'open' but shows a diagram of what is on the inside.

The other two participants identified the figure as a woman, seemingly based on the internal organs. Philisiwe said simply, "A pregnant woman", while Lindiwe said:

A drawing of a woman. *Prompt: Why do you say she is a woman?* Because I see this area (stomach) looks like it's where the baby is kept.

Silindile wondered aloud whether the person was a boy or a girl, deciding it was a boy. I am not sure whether this affected her interpretation further, for when prompted to say more, she simply said it showed the inside of a person.

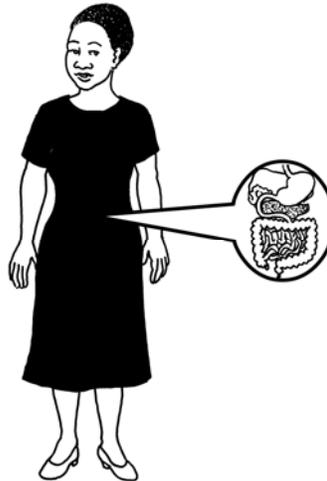
Without the hand holding the spoon to the mouth, only four participants explicitly stated the internal organs shown were to do with eating or swallowing, including the "throat takes the food down to the stomach" quote above, and other such as, "this is the pipe for swallowing".

However, the 78% recognition of the intention to show the internal organs is nevertheless a high success rate for this illustration.

Of the four participants who had experienced difficulty interpreting the denotation of Illustration 4A, two seemed to find Illustration 4B easier to interpret. For Thabile, the "drawing of a snake"

became “A drawing of a person, arms at the sides. Intestines and heart.”, and for Thembani the “open” body became “the inside of a person”. The other two still had difficulty, with Hannah maintaining the ‘injury’ interpretation and Elizabeth remaining unsure, saying in a similar way to before, “A man, not sure what this is.”

#### **Illustration 4C: Internal organs – The digestive system**



**Figure 88. Illustration 4C: Internal organs – The digestive system (Clothed woman)**

#### *Participants’ responses to Illustration 4C*

All participants identified the figure icon; with only Nondomiso saying it was a person rather than specifying a woman. 16 participants understood the concept that the ‘balloon’ device showed something inside the woman’s body.

13 participants understood the use of the balloon diagram to show the internal organs, for example, Lindiwe said,

Woman with an arrow pointing, showing the things in her stomach.

Zandile’s answer was:

I see a woman in a black dress. Here it’s the same as before, these are lungs we’ve seen down there. *Prompt: Why do you think these are here, or who do they belong to?* I think, as this sign is showing, they are hers.

Three participants, Thembani, Bongwiwe, and Philisiwe said the woman was pregnant and that the insert showed the child inside. Even though they misinterpreted the content of the balloon insert, they clearly understood the insert/balloon and ‘arrow’ concept. Hannah suggested the woman

was “bleeding from her stomach”, and unfortunately we did not prompt for a further explanation of this and how it related to the balloon part of the image. Didizana was the only other participant to suggest ill health:

A woman with her insides. I think she is not feeling well in her stomach. *Prompt: What makes you think she is feeling sick?* Her weight. *Prompt: What is the pointing thing?* I think it means her problem is in her stomach.

I wish we had asked what it was about her weight that suggested to Didizana that the woman was not feeling well. Did she think the woman was too heavy, or perhaps too thin? Was the participant referring to pregnancy in any way? Perhaps “not feeling well in her stomach” might refer to morning sickness. I have over the years noticed what seems to be a cultural tendency among Zulu woman of not openly discussing pregnancy in public, and perhaps some of the participants may not have wanted to suggest this in the interview, and rather did not explain fully what they thought the tummy bubble insert was about? Whether or not this was a factor for some of the participants, it does not change that 70% of the participants ‘correctly’ interpreted the concept of the graphical device in illustration 4C, if you include the ‘pregnant’ interpretations with the intended ‘insides’ ones.

Three participants did not know what the illustration depicted, apart from identifying a woman, for example Mandla said, “Woman standing with shoes on, not sure what this is.” Three others tried to describe the balloon, arrow and ‘insert’ image of intestines as follows, and Thabile’s description is typically detailed:

Woman wearing shoes, a black dress, and a black hat. A stick with a round thing going across her stomach. There is a nice drawing inside the round thing.

A woman with something from the side pointing at her. *Prompt: Are they showing us the inside or the outside of this person?* This thing is on the outside pointing at her. (Sifiso)

I see a woman with an arrow pointing at her; I am not sure what is inside. (Dumisani)

### *Summary of Findings for Illustration 4C*

70% of the participants understood that the graphical device contained a depiction of the person’s internal organs. For those participants who inferred the illustration was about pregnancy or related matters, the female gender combined with internal organs indexed a message about pregnancy or reproductive organs. Thus details such as clothing/gender had an effect on participants’ interpretations, as the intended message was not gender specific. Nevertheless more participants than expected understood the ‘balloon’ graphical device.

## Summary of analysis and findings for Content Set 4: Internal organs

Although a few participants did have real difficulty interpreting the depiction of internal organs, the majority of participants understood the concept as depicted in illustrations 4A (57%), 4B (78%), and 4C (70%). The differences in the three illustrations did affect the levels of interpretation to a certain extent, particularly with regard to 4A, and one could examine the differences between the three to determine the best approach for certain messages. Certainly, illustration 4C is more complex in semiotic terms (the sign types) but the relationship to the intended meaning remains relatively direct. For example, if the intention was to depict pregnancy then it might make sense to use a more detailed depiction of a woman, such as the approach used in 4C. Including details like the spoon also has the potential to more accurately index a particular message, depending on whether the icon is recognised as intended or not. All three approaches seem to have their merits for different messages.

## Set 5: TB symptoms

### Illustration 5A: Symptoms of TB



Figure 89. Illustration 5A: TB symptoms (Six different people)

### *Participants' interpretations of Illustration 5A*

The sequences in which the participants discussed the six frames of this illustration varied, and because the information did not need to be viewed in a particular narrative order, no order could be marked as 'right' or 'wrong'. However, sometimes the order in which a participant discussed the different pictures was more systematic than others, for example, according to the traditional way of reading from left to right and moving down the page, versus randomly moving from middle left to top right, and so forth. Another more systematic approach used was to move from top to bottom down the left side/column and then down the right. I also considered 'reading' from the bottom upwards as systematic if it followed a pattern, such as from left to right, or up the left column of pictures first and then up the right. 12 participants were systematic viewers in this way, and of these 12, nine were urban and three were rural. Another three rural participants started at the top left, moving right, but did not maintain the pattern.

The relevance of the order in which the participants discussed the six pictures in the illustration lies in what this might reveal about the extent to which different individuals have absorbed traditional literacy conventions to systematize their "reading" of pictures. This in itself is only relevant if one can link correct interpretation rates of the visuals with the more systematic approaches to the order of viewing and interpretation. This linkage, if it can be made, varies across the six different pictures in the illustration, because some of them proved more difficult for all participants to interpret correctly than others. However, where the meaning of an illustration depends on a narrative syntagm between the different elements, or in this case, between the frames, the order in which a viewer looks at the parts may have a significant impact on whether overall interpretations are correct or not.

Of course, the order in which the participants chose to discuss the six pictures in this illustration may not be the order in which they first viewed them, although there was not a great deal of time spent in silence during the interview. Nevertheless, one cannot say that the participants definitely 'read' the different illustrations in exactly the same order in which they spoke about them.

I suspected that the people who followed a seemingly random order, such as starting in the middle or bottom, started with those pictures they felt they could most easily identify or discuss, and then moved on to others, sometimes leaving out the ones they didn't understand at all or were not confident to interpret aloud.

I now consider the participants' interpretations of each of the six pictures in illustration 5A individually.

*Illustration 5A, top left picture: Coughing*



All the participants correctly interpreted the denotation of the first picture as a person, although not everyone mentioned the arms or hand positions. The person was intended to be a man, but at least seven participants identified it as a woman, and three said they weren't sure if it was a woman or a man. Others said it was a person or answered in a manner that did not refer to gender, for example, Dumisani said, "This one is really surprised..." In this case I do not consider the gender aspect as a misinterpretation of the denotation, because gender is not important to the message.

The only other misinterpretation of an icon that occurred was also unimportant to the message – Thabile described the person as "wearing a black and spotted hat". The most important aspect is, of course, what the participants understood about what he or she was doing, and what it meant. Thabile also said the person was holding their throat, as did Lindiwe, without suggesting why. Zandile said, "She has something in her hands", while another said, "Her eyes are shut." These four responses are still descriptions of the icon, rather than connotations, and incorrect at that.

15 of the interpretations can be considered as connotations based on the surface descriptions. Seven responses diverged from the intended meaning: the person was "making a call (phoning)", "just sitting doing nothing", "crying", "scared" (two responses), and included two interpretations of surprise, for example, "surprised, holding chest" and Dumisani's comment mentioned above.

Only eight participants explicitly interpreted the picture as intended – as a person coughing – and Thandeka explained that coughing was indexed "because he/she is covering the mouth with his/her hand". Seven of these eight 'correct' interpretations were among the participants who responded to the six different pictures in a systematic fashion, and only one of these, Sibongile, was in the rural group. With regard to what the coughing meant, only Muzi said "woman has a cold because she is coughing". Other mentions of sickness were made by three people in relation to the whole group of pictures in the illustration, and only one of these, Busisiwe named TB. Busisiwe was the participant who spoke English during the interview and reported the highest level of schooling.

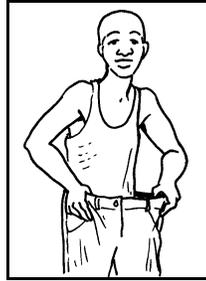
*Illustration 5A, top right picture: Chest pain*



Again, all 23 of the participants said that this picture showed a woman. Nine commented specifically on the position of her hands. Four did this without explaining what the gesture might index. Hannah said, “This woman is holding hands, her hands are held together.” Zandile said, demonstrating the gesture, “Here I see a woman with hands like this.” while Siphso said, “This one is holding the chest.” Thembani again added a description of clothes, “Holding chest, with a printed hat and striped shirt.” In other words, these four participants only described the denotation of the picture. Three of these four were among the rural group.

Only four participants interpreted the picture as indexical of chest pain, the intended connotation of the woman’s gesture. These four participants were all from the urban group. Nine participants described alternative connotations: three said the woman was scared (Philisiwe suggested she was scared “for the other person”, perhaps a link to another picture?). Thembani said she looked “sad because of the sickness”, while Sifiso said “A woman sitting looking lost, sad”. Two thought the woman was surprised, while Mary described her as “a worried woman”. Finally, Nosipho said the woman was touching her chest because it “looks like it’s itchy.” All of these alternative interpretations are easy to understand or justify, and together with the low rate of ‘correct’ responses suggests that this picture was ineffective as part of an illustration intending to connote physical signs of illness such as TB. It may have been more successful if viewers had clearly linked it conceptually with the other pictures completing Illustration 5A. As it is, this seemed to be far more successful in communicating emotional anguish, which probably often accompanies a serious or chronic illness, but was not meant to be the main message.

*Illustration 5A, mid left picture: Weight loss*



22 participants correctly identified this as a man doing something with his trousers, such as holding them or putting them on. Only Hannah did not comment on this picture at all. Of the 22 participants who did, 13 made the point that the pants were too big for the man. Seven (30%) said the pants were big because he has lost weight, the intended connotation. Three others implied weight loss by saying the trousers do not fit him “anymore”. Alternative interpretations that did not suggest weight loss included five who simply said he was getting dressed, and the following:

Holding his pants, maybe they are falling off. (Elizabeth)

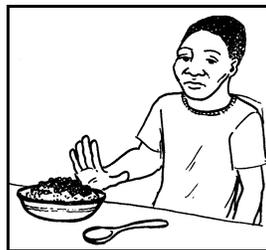
This one is small but is wearing an oversized thing. (Nondomiso)

The man bought a big pair of trousers without trying on in the shop. (Muzi)

The man is surprised, his new pants are big. (Jonas)

Ten participants (43%) correctly interpreted the pants that did not fit as indexing weight loss. However, not one took this to a further level of connotation to link this to illness.

*Illustration 5A, mid right: No appetite*



Two participants, Them bani and Philisiwe, did not comment at all on this picture of the man pushing his plate of food away. Thus the responses discussed are from 21 participants, ten rural and ten urban.

All 21 participants identified the intended denotation of a person with a plate and food. Ten participants gave no more than ‘correct’ descriptions of the icons in their simplest forms, for example:

This one has food and a spoon in front of him. (Sibongile)

Only one participant of these ten was from the urban group. This is an example of a clear difference between the responses from rural and urban participants. Nine out of the eleven rural participants who commented on this picture only described the denotation of the picture, and the other one, Thokozani, said it showed “eating”. The combination of the pushing-away gesture, the facial expression, and the plate of food itself was intended to act as an index of no appetite (a symptom of ill health). Yet it was interpreted as the opposite, or not at all, because the gesture and facial expressions were not noticed as being important to the meaning.

However, nine of the ten urban participants went beyond the surface denotation of the person with food and a spoon to describe what these things meant. This is significant, even though only four of these were the same as the intended connotation, for example:

(He) doesn’t like to eat food, he’s lost his appetite. (Busisiwe)

In this picture the person looks like he doesn’t like food anymore. (Thandeka)

The unintended connotations included the suggestions of Muzi and Dumisani that the man was praying before eating, and Mandla who said he was waiting for the food to cool down. Siphon and Jonas suggested he was eating. Thabile said, “This one is cooking.”

Thus the rate of ‘correct’ intended interpretations of the indices in this picture is a mere 17%. It is tempting to infer that the four ‘correct’ interpretations were made because those urban participants paid more attention to the details of the hand position, and the man’s facial expression and the direction of his gaze – his eyes are not looking towards the food which should suggest disinterest. However, it is also possible that other participants looked equally carefully with different results, leading to misinterpretations.

*Illustration 5A, bottom left: Night sweats*



This proved to be one of the most confusing pictures for the participants. It was left out by two participants, Hannah and Siphso, thus 21 responses are discussed. 17 participants recognised the denotation as a person in a bed. Four participants did not mention the bed, but all of these four interpreted her pose with one arm raised to the side of her head in the same way – an index that she was making a telephone call. Dumisani was unsure about this, saying:

This one has a hand on her head, or is making a call. What is she doing? I don't know, I think she has a hand on her ear.

Six participants described the woman as old. Bongwiwe interpreted the curtained windows as a wardrobe:

Old woman in her bedroom, this is her wardrobe, this is her bed.

Other responses included:

I see this woman, I think these are curtains, I think that maybe this is a road (*indicating edge of the blanket*)... (Zandile)

Laying on the bed, thinking and looking at the sun through the window. (Muzi)

These descriptive responses did not say much about the meaning of the picture, but simply gave insights into misinterpretations of certain icons. It is difficult to understand the interpretation of the curtains and a road together, completely out of proportion, save to say that the 'road' is possibly similar to the road depiction in Illustration 1C – parallel lines. Nobody mentioned the small moon outside in the dark sky signifying night, clearly too subtle a cue – and not very clearly depicted at that. The person who did comment on the moon referred to it as the sun!

Three participants mentioned illness, or that the woman was in bed because she was sick. Two participants, Busisiwe and Didizana, mentioned sweating, both suggesting that the lady had woken up sweating. Thokozani suggested that the woman was "crying on the bed". Yet again,

the rate of intended interpretations was very low, with only 9% of participants interpreting that the woman was sweating, and only 22% suggesting illness.

*Illustration 5A, bottom right: Coughing blood*



Three participants did not comment on this picture, leaving only 20 responses to discuss. Although all 20 of these participants recognised the denotation of a woman, half of these responses misinterpreted what she was holding or doing. Elizabeth and Silindile made no mention that she was holding anything, the latter said the woman was “old”. Didizana said she could not see what the woman in the picture was doing. Six participants interpreted the cloth as quite different things: four suggested she was reading a book, Philisiwe guessed she was “holding a bible, or flower, or picture,” while Jonas said, “Banana?” and Nosipho simply, “She is looking at her hands.”

Of the 10 responses which were closer to the intended denotation of this picture, six mentioned a cloth, towel or handkerchief, and two others made interpretations which implied that they had recognised a cloth or hanky:

Looks like she is crying (Thembani)

Sick, blew her nose. (Muzi)

Only two participants (9%) mentioned coughing, Busisiwe and Mandla. Only Busisiwe identified this as coughing up blood – and it was she who mentioned TB in relation to all the pictures in this illustration.

From the above it is clear that most participants had difficulty interpreting this picture, and most of the 26% (six) who recognised the intended cloth icon did not infer what it indexed. Only one person interpreted the connotation as intended.

### *Summary of findings for Illustration 5A*

The average rate of ‘correct’ interpretations of the six pictures in this illustration was only 20%, if this average can mean anything at all. Participants had the most success with interpreting the picture in the middle on the left, the man whose pants were too big, to signify weight loss, at 43%. The least successful in communicating its message was the picture at the bottom on the right, coughing up blood, at 4%.

Only three participants commented on the meaning of the illustration as a whole. Them bani started her discussion of the illustration by saying, “These look sick.” The other two, Mandla and Busisiwe, were prompted in the following manner, after they had commented on each picture:

*Prompt: What might all these pictures be about? About a sick person. (Mandla)*

*Prompt: Do you link these in any way, what they might mean? I’ve heard that, uh, you see when you learn about TB and HIV, they say sometimes when you cough up blood, those are the signs of TB and when you wake up all sweaty sometimes you don’t like food and you lose weight. (Busisiwe)*

Busisiwe was the only participant who mentioned TB, the intended connotation of the illustration. Prompting helped to get participants to describe more, and prompts occurred quite intuitively, depending on how a participant responded verbally and through non-verbal facial expressions. Thus, prompting was not always done evenly for all participants. I do not expect, however, that much more than ‘sickness’ or ‘sick people’ would have been gained from a single prompt to most of the other participants. The phrasing of the prompt in the last quote above reflects that Busisiwe was comfortable speaking English, for the quote is not translated from Zulu but is written down as she said it. She also seems to have had some education on TB before which is likely to have provided her with “contextual knowledge” to inform her interpretation (Carstens et al., 2006: 224). This is supported by her ability to correctly interpret many of the other illustrations.

A similar knowledge of visual conventions would be of help to recognise that a group of pictures probably relate to each other for their meanings. For example, the coughing and sore chest pictures at the top relate to the ‘coughing blood’ picture at the bottom, where the act of coughing is not seen. Similarly, the weight loss and lack of appetite should relate to each other. These syntagmatic relations – both spatial and conceptual – were not clear to the majority of participants.

Some pictures which seek to show action do not seem to be effective – the big pants picture shows a consequence or a situation, and seemed to convey meaning better than a person in the middle of coughing. This possibly relates to what others classify as illustrations with “problematic type of complexity (e.g. indication of action)” (Carstens et al., 2006: 229).

### **Illustration 5B: TB symptoms**



**Figure 90. Illustration 5B: TB symptoms (One person)**

#### *Participants’ responses to illustration 5B*

All the participants identified that the illustration showed a man, although Sifiso said he was “sitting quietly”, which I classified as an alternative denotation. 10 participants mentioned the cloth (or towel or ‘hanky’) for coughing into and/or wiping his mouth. Three misinterpreted the denotation of the cloth as follows:

He is carrying a bag and trying to breathe into it. He has a congested chest, he’s trying to open it up. (Jonas)

I don’t know if he’s crying and has a microphone or something. (Dumisani)

The person is wearing takkies and a pair of pants with black stripes and a white shirt with black stripes. He is inserting something into his mouth. *Prompt: What do you think he is doing?* I think he is using a breath pump (oxygen mask/pipe). (Thabile)

The first and last of the above quotes are misinterpretations, yet remain close to the intended subject matter of the illustration, implying breathing or chest problems. Jonas and Thabile have drawn other connotations based on the denotation. Like Dumisani above, Sibongile suggested that the man in Illustration 5B was crying. Lindiwe’s different response was:

A boy has a towel in his hands, wiping blood, I’m not sure if he is bleeding. I see spots on (from?) his mouth.

Altogether 11 participants (49%) said that the man was coughing, and nine (39%) said he was holding his chest, but only three (13%) suggested he was in pain. Six (26%) participants said he looked sick or was not feeling well. Altogether, in various combinations of these comments, 15 participants (65%) came close to the intended interpretation of the illustration. Only Busisiwe mentioned the coughing of blood, “This man is coughing up blood, he is holding his chest.” She was the participant who had mentioned coughing blood and TB with reference to the Illustration 5A, discussed above. However, the most ‘complete’ response was from Nosipho, with the help of prompting:

A person coughing like it hurts, holding the chest. *Prompt: Do you think the person is sick? Yes. What kind of sickness does the person suffer from? Chest sores.*

Nobody mentioned TB by name in connection with this illustration. I thought perhaps “Chest sores” (above) was a way of describing TB, but it was translated from *izilonda esifubeni* and according to the translator this is not a synonym for TB, which is known as *isifo sofuba*. However, it is possible that some people do equate the term “chest sores” with TB.

### Illustration 5C: Symptoms of TB



Figure 91. Illustration 5C: TB symptoms (Six pictures of one person)

### *Participants' responses to Illustration 5C as a whole*

While participants discussed these pictures, we asked if they thought it was the same person or different people. Sometimes this prompt was to clarify a statement, for example, Bongiwe started her response by saying, "I see lots of people sick with TB." After she had described each picture, we asked, "Is it the same person or different people?" and she answered, "Same person." This response in particular seemed astonishing, in the comparison with the responses to illustrations 5A and 5B, where only one participant named TB. Bongiwe went on to say of picture 5C, "This is a person with TB and these are his symptoms." Previously she had not mentioned TB at all when responding to illustrations 5A and 5B. Altogether nine participants said it was the same person in each picture, while seven said the opposite, that the pictures were of different people. Thokozani seemed confused by the proportional differences between the icons, saying:

I don't think it's the same person, but I don't know, they are not the same size.

Not every participant was prompted about this, and the wording of some of the interpretations implied that the participant did see the pictures as showing the same person, for example, Thembani's interpretation as follows:

(Top left) Looks like this person is eating. (Middle left) Here it looks like he has a fork and has been working in the fields. *Prompt: Now what is he doing?* Now he looks sick and is holding his head. (Middle right) Now he looks like he is visiting a doctor and is on a scale. (Bottom right) I think something is going in his mouth. (Bottom left) Here he looks sick because he has his eyes shut.

There is a narrative here, and causal relations: he felt sick, and so he visited the doctor (indexed by being weighed on a scale – for some participants the only scale they come across would be in a clinic/doctor's rooms.)

Thembani left out the top left illustration, of a man coughing. Although she mentioned ill health in relation to three of the pictures (I include her suggested 'visit to the doctor' interpretation in this classification) two of the illustrations were misinterpreted as meaning the opposite of what was intended (eating, top right, and "something going into his mouth", at bottom right). Specific symptoms (indices of illness) were not mentioned, such as sweating, or coughing. Thembani's is a fairly typical response, which also demonstrates again the need to discuss the individual pictures separately when testing illustrations consisting of several different pictures.

Several of the responses suggested it was one person in all the pictures, implying a progression of illness, as though the pictures showed different stages – again a sense of causality. Some, like Thandeka and Mary, explained this very clearly:

*Prompt: What do you think is going on with him?* I think he is sick. In this picture, I think it was the beginning of the illness and in the others he is getting worse. (Thandeka)

Same person. *Prompt: What does it mean that the same person appears in all of these pictures?* I think he was this big but then he coughed, got headaches and got sick and ended up lying in hospital. He was shown the kind of food he is supposed to eat while he was ill. Here he is weighing himself. (Mary)

Narrative descriptions like these do not necessarily disrupt the intended message of the illustration, but should be taken into account as a possible cause of misinterpretations when several pictures are placed together.

11 participants followed a seemingly systematic order when discussing the different pictures in this illustration, and, as was the case with Illustration 5A, the majority of these (nine) were urban participants. Comparatively few responses from the rural participants were expressed in as systematic a sequence.

*Illustration 5C, top left: Coughing, chest pain*



Three participants did not say anything about this picture. They were Thabile, Thembani, and Philisiwe. The other 20 participants all recognised that it was a man. “Coughing” was the most common interpretation of his posture and expression, from 13 participants, six rural and seven urban. Nobody mentioned the three lines next to his face and shoulder, the graphical device which conventionally symbolises coughing.

Five participants interpreted the man’s posture and expression differently, as follows:

A man thinking. He looks troubled and thinking with his hand on his mouth. (Elizabeth)

This one has nothing, just holding his chest. (Sifiso)

A person praying. (Nondomiso)

One who likes smoking a pipe. (Dumisani)

Still the surprised man. (Jonas)

In the last quote, Jonas possibly refers back to Illustration 5A, which also had a coughing man as the top left picture, of which the same participant had said “he is surprised”. The men in two pictures were quite different in appearance, but their poses and expressions were similar. It is interesting to note the consistency of the participant’s response, and that he easily linked back to the other illustration from this set viewed much earlier in the interview. Incidentally, 76 year old Jonas was often mildly playful or teasing in his manner and responses, and perhaps the above quote reflects this.

As stated above, nine participants linked the different pictures by saying the men depicted in them were the same person. Only two, Thandeka and Muzi, said the man was sick specifically with reference to this picture of coughing. It is possible that the second to last quote above, about smoking, is based on the coughing index, as coughing may be linked to smoking, but this is not clearly stated.

*Illustration 5C, top right: No appetite*



21 of the 23 participants (91%) identified the icons, a person with food, although one of these said only “This is food, a fork and a knife.” The two other participants did not mention food or eating. Thabile said, “This one is sitting on something but I don’t know what it is. There is a drawing across him and a circle below him.” Her attempt to describe the abstract shapes in the pictures is an interesting strategy to deal with unrecognisable objects. Thabile was the participant who regularly described the details of clothing rather than what the people in the picture seemed to be doing, or what the picture might mean. Hannah said only that she was not sure if the person was a man or a woman.

Only five participants (22%) interpreted the connotation of the picture as intended, that the person in the picture was not eating the food and had no appetite. This means they noticed and

correctly interpreted his body language and facial expression as signifying disinterest in the full plate of food. Dumisani made this explicit:

He has food and a fork and knife, and is facing sideways. *Prompt: Why do you think he is looking to the side?* I think he doesn't like to eat.

Others simply said, "Does not like food" or "a man not eating his food". All of these 'correct' interpretations were from urban participants.

*Illustration 5C, mid left: Fatigue*



One participant did not comment on this picture. Of the 22 who did comment, Philisiwe and Nosipho simply said the man was thinking. They did not refer to any contextualizing details, such as the garden fork icon, which was supposed to be an index that he had been doing garden work and was now too tired or weak to go on.

Eight participants altogether gave different explanations of what the man was doing or feeling: Elizabeth said he was sad, Mary said that he had a headache, and six said he was thinking. Jonas said, "Man sitting on a bin, spade behind him, he's thinking, 'I've got AIDS.'" These are plausible interpretations, especially the last one, despite them not having the exact intended connotation, which was to show fatigue as a symptom. It seems to me that Jonas' interpretation possibly refers to a more general health paradigm or the 'organizing agenda' of the research – characteristically almost with "tongue in cheek", contextualizing this picture in relation to many of the other illustrations from the different sets.

Another eight participants were close to the intended connotation, that the man was tired (three responses) or resting (five). Resting implies tiredness. Examples include:

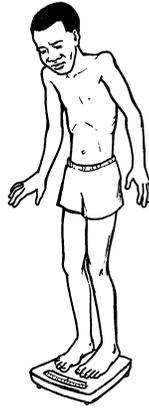
A man is resting. He was ploughing. This is his fork. (Hannah)

I think he's tired, and sitting down having a rest. (Busisiwe)

Them bani interpreted the man's pose as an index of sickness:

Here it looks like he has a fork and has been working in the fields. *Prompt: Now what is he doing?* Now he looks sick and is holding his head.

*Illustration 5C, mid right: Weight loss*



21 participants recognised that the picture showed a man standing on a scale, and 12 said specifically that he was weighing himself. Only two did not mention the scale, saying he was “standing, looks sick” and “standing quietly”. Them bani associated the scale with a visit to the doctor. Only four identified the connotation as weight loss, for example, Muzi said,

This man was big but now he has lost weight. Then he decided to check his weight on a scale.

I think the recognition rate for the scale could be so high because it was a familiar object most people encounter in clinic situations. Six participants suggested that the man on the scale was sick, for example Bongiwe said,

This one is weighing himself on a scale as he is not well.

Again, such interpretations of ill health could be indexed by the facial expression, but also through syntagmatic relations among the different pictures, and the broader context of the research ‘health’ paradigm. However, the fact remains that only 17% specifically mentioned weight loss, one of the TB symptoms that this picture tries to represent.

*Illustration 5C, bottom left: Night sweats*



20 participants discussed this picture, and three did not. Elizabeth simply said it was a man. 15 participants said it was a man lying down or sleeping. Eight suggested that this indexed sickness. Only two participants Busisiwe and Didizana said he was sweating. Perhaps this is what Dumisani meant when he said:

Looks sick. The way the drawing is made makes him look sick.

It is, however, not possible to guess exactly what he was referring to by this comment, because he does not mention the stylised ‘sweat’ droplets on the face.

Five misinterpretations of the icons were as follows:

I see a man with a lot of blood on his face. (Them bani)

Here I see this one is a man. There is another one behind him putting hands around him. (Zandile)

A person showing a blanket. (Philisiwe)

He has his eyes closed, holding a shirt in his hands. (Mandla)

Sitting quietly. (Sifiso)

*Illustration 5C, bottom right: Coughing blood*



Only one participant, Thabile, failed to comment on this picture, and of the 22 who did comment, all recognised the icon as a person. Only six correctly identified that he was holding a cloth, while two described it as clothing:

He has a shirt and he has coughed on it because he has flu. (Muzi)

Taking off something, a man undressing. (Jonas)

Five said they were not sure what he was holding. The above two quotes have assigned connotations to the clothing and the man's actions. Altogether seven (30%) of the participants mentioned coughing, but only two suggested coughing blood – Busisiwe and Sibongile. Sifiso said the man was drinking. Nobody directly mentioned the lines intended to index the coughing action. Thembani said, "I think something is going in his mouth", while Nosipho said, "Looks like something coming out onto the cloth." Two others said the person was crying. Mary said, "Crying or coughing, tears on the face," which must refer to the lines intended to define the cheek and expression.

#### *Summary of findings for Illustration 5C*

The average rate of 'correct' interpretations of the six pictures in this illustration was 25% per picture, only slightly better than the 20% average for the pictures that comprised Illustration 5A. Participants had the most success with interpreting the picture at the top on the left, the man coughing and holding his chest, recognised by 52%. The least successful in communicating its message was the picture at the bottom on the left, night sweats, correctly interpreted by only 9%.

11 participants (43%) mentioned sickness explicitly in their responses, two of these with reference to only one or two particular symptoms depicted in individual pictures of the illustration, while nine (39%) commented on sickness in terms of the meaning of the illustration as a whole. This interpretation depended on the recognition that it was one person in all six pictures. Two participants named the illness as TB, and one suggested AIDS.

The absence of frames separating the six pictures or figures did not seem to cause any problems, and nobody seemed to interpret these as one picture with six people in it, or experience other difficulties with pictorial space.

#### **Summary of findings and analysis for Set 5**

None of the illustrations really succeeded in communicating that the illness depicted was TB. TB was mentioned only once with reference to Illustration 5A, and twice with reference to

Illustration 5C. None named TB in relation to Illustration 5B. Although many urban and rural participants correctly interpreted the general connotation as sickness, it appears it was not realistic to expect anyone to interpret the full, intended connotation.

Illustration 5C was slightly more effective than the other two illustrations at depicting different symptoms of one illness, by using six illustrations of the same person. This led to a slightly increased number of participants linking the different pictures – 21% for 5C, whereas only 13% of participants did this for Illustration 5A. This echoes my findings in the semiotic analysis of these illustrations in Chapter 5, that Illustration 5C seemed to have a greater chance of being interpreted as a syntagm than 5A.

Faced with illustrations made up of multiple frames, such as Illustration 5A, or of several pictures, such as Illustration 5C, almost half of the participants did not follow a conventional top-to-bottom and left-to-right ‘reading’ order/direction for their responses. More participants that were rural seemed to interpret and discuss the different illustrations in random orders than did the urban participants, almost all of whom seemed to follow more systematic orders of response. The order of looking and discussion was not problematic for affecting participants’ interpretations, but is of interest in terms of suggested differences between “skilled and unskilled viewers” visual processing habits, for example the ability – or lack thereof – to focus on the salient parts of complex visuals (See Doak et al, 1996: 93; and Ausburn and Ausburn, 1983: 113, in Carstens, 2004b: 467-468).

Of the three illustrations, the rate for correctly interpreting coughing went up in the order in which the illustrations were shown, from 35% for illustration 5A (top left picture), to 49% for the single figure in B, to 52% in illustration 5C. Although many factors could have influenced this, for the three depictions have slight differences in angle and/or detail, it seems possible that participants became better at interpreting such depictions during the interviews, and that the many ‘coughing’ illustrations had a cumulative effect on interpretation rates. In other words, the interpretation rate may have been influenced by the research process, a factor external to the individual illustrations.

## **Overview of findings for Sets 1 – 5**

The above discussion details the different ways in which participants interpreted or misinterpreted the illustrations, per illustration. Considering the minutiae of different denotations, connotations and signifying relationships is interesting, but it is also challenging to hold onto the key points. The table below provides a concise account of how many participants

interpreted the illustrations according to the intended meaning of the producer/illustrator. The notion of intended interpretation has been more strictly applied than in the above narratives which allowed for reflecting on the degree to which the participants may have implied the intended meaning but not actually named a particular illness, for example.

<b>Intended interpretations: 23 participants – 11 urban (U), 12 rural (R), Total (T)</b>						
<b>Illustration</b>	<b>Intended meaning (condensed)</b>	<b>U</b>	<b>% U</b>	<b>R</b>	<b>% R</b>	<b>% T</b>
1A Stages of HIV	This couple gets sick over time because they have infected one another with HIV/AIDS.	3	27	0	0	13
1B Stages of HIV	The man looks healthy but becomes sick with HIV/AIDS from having unprotected sex.	2	18	0	0	9
1C Stages of HIV	HIV is like a road with different paths you can take at different stages.	0	0	0	0	0
2A HIV virus	A woman points to a picture of the virus, HIV.	8	73	3	25	48
2B HIV virus	Man worrying about having HIV.	0	0	0	0	0
2C HIV virus	The HIV virus is carried in blood cells.	0	0	0	0	0
3A Safety for caregivers	When caring for the sick, protect yourself from infection by washing hands, wearing gloves, and cover cuts with plasters.	1	9	0	0	5
3B Safety for caregivers	Using soap, gloves and plasters when caring for a sick person can protect you from getting infected with HIV.	0	0	0	0	0
3C Safety for caregivers ( <i>no background</i> )	Wearing gloves protects this woman's hands from germs, while she cares for someone with an infectious disease like HIV/AIDS.	2	18	0	0	9
3D Safety for caregivers ( <i>with background</i> )	Wearing gloves protects this woman's hands from germs, while she cares for someone with an infectious disease like HIV/AIDS.	9	82	7	58	70
4A Internal organs ( <i>partial outline</i> )	When you eat, the food goes from the mouth to different organs inside the body.	8	73	5	42	57
4B Internal organs	This is the digestive system inside a person.	7	64	11	92	78
4C Internal organs ( <i>'arrow' pointing</i> )	The pointing arrow/shape shows what is inside the woman's body (stomach and intestines).	8	73	8	67	70

5A Symptoms of TB	These symptoms together are the signs of TB. ( <i>Six pictures in frames</i> )	5	45	1	8	27
5B Symptoms of TB	These symptoms together are the signs of TB. ( <i>One figure</i> )	0	0	0	0	0
5C Symptoms of TB	These symptoms together are the signs of TB. ( <i>Six pictures, no frames</i> )	4	36	2	17	27
		N=11		N=12		

Up to this point, this chapter has dealt with the responses to the illustrations that depicted the same (or similar) content in different ways. The following section will deal with the participants' responses to the illustrations which aimed to assess the effects of different artistic styles, and which of these the participants were able to interpret more easily.

## 6.2 Illustrations to test style

### Set 6: Artistic techniques



Illustration 6A: Line drawing



Illustration 6B: Ink wash tones



Illustration 6C: Line drawing with cross-hatching shading/modelling



Illustration 6D: Line drawing with flat greyscale fill

**Figure 92. Set 6: Artistic techniques**

#### *Participants' responses to Illustrations 6A, 6B, 6C and 6D*

These four illustrations were shown to the participants together, although they were each on a separate piece of paper, which were laid side by side on the table. Although this set of illustrations was primarily intended to enable the exploration of the effectiveness of different artistic styles/techniques, it became clear that it was difficult to discuss these without referring to

the content of the illustrations, such as the denotation and connotations, and how different sign types factor into this. This did not prevent us from discussing the artistic styles of the illustrations. It is natural that style and content are difficult to separate, and the one may influence and even change the other, as the participants' responses discussed below reveal.

In terms of denotation, all the participants recognised a man, a child and a woman in the illustrations, and 96% said the adults were holding, helping or examining the child. The one exception was Sifiso who said that they were giving the child a bath. 19 participants understood the connotation that the man was a doctor, while four did not specify roles for the man and woman, although of these, Sibongile said, "A family".

Thabile disagreed that all four illustrations showed the same thing. Here is her full response:

These are women, this woman is wearing a dress and has a hat on, this one also has a hat, this one is drawn and holding a child. One with a doctor, treating the child. *Prompt: Can you see that they are the same picture?* No, it's not the same picture. *Which one do you like the best?* D. *Why?* A – I can see it's a doctor checking a child. B – Doctor but not a child, it's an older child. C – A doctor with a child. D – They are wearing different clothes and you can see the different people.

Them bani interpreted the four pictures as depicting the progression of an illness:

The woman is taking the child to the doctor, the doctor is checking the child. It means the child is sick because the woman is taking the child to the doctor. *Which one do you like the best? Why?* It means (indicates A) is sick, (B) is sick, (C) is worse, and (D) is better.

This participant also preferred D because it was "nice". In fact, 18 participants expressed a clear preference for illustration D, the outline drawing with flat greyscale fill in certain areas. Most people said they liked D because it was clearer than the others were, and some said it was easy to see the different people. These quotes sum it up, and the first, from Thandeka, gives more detail than most:

Because there is colour in this picture (D). The doctor is wearing white, granny in black and the child is also wearing white. Yet in the other picture everything is the same. It is also easy to see in this picture who the doctor, child or granny is. (Thandeka)

This one (D) is bright and clear unlike the others where one cannot see what is happening. (Philisiwe)

Other reasons that explained this further include:

It looks nice, they are well, beautiful and well-dressed. (Silindile)

This one (indicates D) because the lady is helping the child not to panic. She's holding his shoulder. (Busisiwe)

It is clearer and they are all dressed. (Muzi)

Three participants preferred illustration 6A, the line drawing with no greyscale tones filled in. Hannah said 6A was better “because the doctor is urgently checking on the child,” although she agreed there was no difference in the content of the four illustrations. Bongwe explained that she liked both 6A and 6D, but chose 6A because in “the others you can’t see properly what is happening. They look as if they were burnt or something.” This comment about burns suggests that she interpreted at least some of the techniques for creating tone and modelling form as wounds or injuries. Mandla preferred 6A for the simple reason that he found it “clearer than the rest”. Two of the participants among the majority who preferred 6D said they also liked 6A.

This finding of a definite style preference suggests that earlier findings by Sejake are still valid, that “shading on faces was often misinterpreted or simply dismissed as making the person ‘not clear’.” (1993: 19) It was found that “the most common reason for choosing a particular illustration or photo was, ‘it is clear’.” (1993: 22). Apart from individual likes and dislikes, the reasons the participants in my study gave for their preferred choices of illustration 6D and for some, 6A, reveal that different illustrating styles can have an impact on the message of a picture, potentially turning a scene from a situation where everybody is “well” to one where the people look sick or “burnt”.

### **Summary of findings for Set 6, Illustrations 6A, 6B, 6C and 6D**

Artistic styles/drawing techniques had a huge influence on how the participants perceived the four illustrations. The vast majority (78%) preferred Illustrations D because it was “clear” and easy to understand, and some felt the people looked better. Thus the preference for line drawing filled with flat greyscale tones was more than an aesthetic choice – style seemed to change the content of the illustration for some participants. Plain line drawing was the next most popular choice of style, at a much lower 13%, also chosen for its clarity.

This set of drawings was the most satisfying to research. The element of comparison structured this part of the interview and gave both interviewers and participants something very specific to work with, thus having a positive influence on the process and the results. This experience supports others’ recommendations for the pre-testing of illustrations (Lyster, 1995: 40; PATH/FHI, 2002: 42, 81; Sejake, 1993: 11)

## Set 7: Levels of stylization

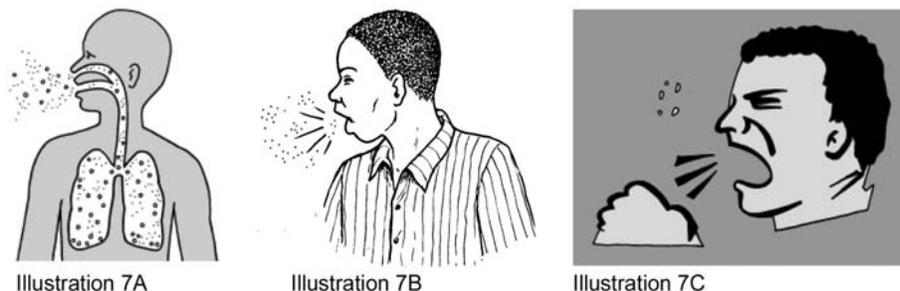


Figure 93. Set 7: Levels of stylization – Illustrations 7A, 7B and 7C

Although I have not included a semiotic analysis of this set of illustrations (or of any of the ‘style’ sets) in the previous chapter, for reasons I explain there, I became increasingly aware ‘after the fact’ of the interviews that these illustrations in Set 7 do not really have the same content/message as I originally intended them to have. 7A is different from 7B more in concept than in style, and conceptually different from 7C. 7B and 7C are more similar, in that they depict a person coughing ‘from the outside’, and are not diagrammatic in style like 7A. This means the findings about this set of illustrations have a similar feel to those from the ‘content’ sets, and represent a less satisfying research process than that followed with style Set 6, above.

### *Participants’ responses to Illustration 7A*



21 participants interpreted the denotation of this illustration as intended, in various combinations including that it showed the inside of the body, lungs, chest, and dots showing breathe or spit. Muzi said accurately, “It shows both the inside and the outside.”

17 participants interpreted the depiction of the lungs, open mouth and the dots inside and outside as connoting breathing, coughing, saliva or “the yellow stuff people spit out”. Breathing or breath was the most common suggestion, made by 10 participants, although three of these said “or coughing”.

Silindile, from the rural group, said, “A boy, looking to the side. Because of the dots I would say we are shown the inside,” which suggests that the inclusion of dots both outside the person’s mouth and inside the lungs helped her to interpret what she saw. Elizabeth stated that she did not know what “this thing next to him” was (the lungs) but when asked about the dots answered they were his breath.

Only two participants definitely misinterpreted the lungs, with two quite different connotations. These were Thabile and Hannah, both 70-year-old women in the rural group. Thabile said,

I see a person wearing, with something placed – I don’t know what it is but there is something here (indicates chest) and it goes towards the mouth as if giving some strength or oxygen.  
*Prompt: Is it on the outside? Outside.*

I see a person with an injury here. *Prompt: Where? Next to the mouth, down to the throat, down here and then to the heart. Prompt: What do you think this (dots) is? I think its blood. (Hannah)*

Thabile and Hannah also had difficulties interpreting illustrations 4A and 4B, similar depictions of internal organs, although Thabile’s interpretation of 4B was better than 4A.

The only other mention of blood was from 23-year-old Lindiwe, who referred to the dots as such, and otherwise interpreted the illustration as intended, “This is a person and we are shown the person’s inside.” The mention of blood is very logical if one knows the symptoms/effects of TB or other respiratory infections.

Muzi interpreted the illustration as a “Film showing that if you use drugs and alcohol you might end up looking like this,” and, as mentioned above, he recognised the depiction as showing the inside and the outside. He interpreted the denotation as intended, but the illustration had other connotations for him. It is a pity we did not ask him to explain his use of the word ‘film’. Perhaps this was a minor vocabulary mistake on his part, or a translation mistake. It might also have been interesting to probe what he meant by “looking like this”. I can imagine that perhaps this illustration reminded Muzi of a film he had seen about the dangers of substance abuse, perhaps showing what smoking does to lungs, but I have no way of knowing if that is what evoked his answer.

Sifiso’s description shows inferences about the meaning of Illustration 7A:

I see a man; it’s as if he’s in a hospital. He is breathing. *Prompt: What makes you think he is in a hospital? I am looking at these things (the dots). Prompt: Can you see what this is? I also see spots on his lungs which make me think he is sick.*

Didizana said,

I see a man with worn out lungs and he has started coughing. *Prompt: What are these?* I think he is coughing, or it's his breath.

Apart from the six participants who mentioned coughing, five participants alluded to illness in other ways, for example, by saying “spots on the lungs”, “sores inside”, “sores outside” and Bongiwe said, “Yellow stuff from the lungs that people spit out.” Nobody mentioned that this is a way of spreading germs or TB, and no specific illness was named.

However, overall, the intended interpretation rate of this illustration was relatively high, in that most participants seemed to grasp that the concept of a diagram showing what was happening inside a particular part of the body, and nobody suggested the person had gnats or anything else flying around his head as in the examples given by Hoffman and others (2000: 142).

### *Participants' responses to Illustration 7B*



For this illustration, 21 participants identified the denotation of a person and a male. Only four of these stated that his mouth was open, but very often this information is implicit in the following connotations:

16 participants said that the illustration showed a person breathing. Elizabeth said, “Maybe as his mouth is open his breath is pouring out.” Thandeka described “a person breathing dirty air or breath”. Muzi suggested it was a man “well-dressed in his shirt” trying to say something but he coughed, and it was “breath mixed with sweat”. Might this description imply that the man in the illustration is an energetic public speaker of some sort? Coughing was mentioned only five times, and sneezing and spitting were suggested twice.

The only really “aberrant” decoding (Fiske, 1990: 78) of the illustration Style Set 3B was by Thabile, who said it showed a woman, with “only the top part of the body showing and no bottom.” She was asked why she thought the body was incomplete, and she answered that it was an injury. She also said, “I don't know what is coming out of her mouth, could be breathing.”

Thabile had also commented on the “incomplete” body in Illustration 2B, but had not explained further as to whether she thought this was due to injury because incomplete suggested that she meant the drawing was not finished.

Nondomiso said she saw a “person screaming or singing”. Although this is different from the intended meaning it is a plausible connotation to draw from the person’s open mouth, closed eyes and the lines (and dots?) emanating from the mouth, in the same way that Lindiwe concluded, “I am not sure if he is spitting water or saliva.”

At the ‘other end of the interpretive scale’, Bongiwe said, “The man is coughing. He is not even covering his hand with his mouth to protect others.” The connotation of germs being coughed and spreading disease is satisfyingly couched in this response. While Bongiwe, from the rural group, had reported standard seven as her highest level of schooling, a similar ‘complete’ interpretation was made by Nosipho, aged 43, who reported Grade 1 as her highest level of formal schooling:

A person opens his mouth, breathing, things coming from the mouth. *Prompt: What do you think are these things coming from the mouth? Coughing germs.*

These and other responses suggest that reported levels of formal education did not seem to make a significant difference to how participants were able to interpret this illustration.

### *Participants’ responses to Illustration 7C*



Illustration 7C is the most stylized (abstracted) one of this set, and thus the one I expected to be the most difficult for participants to comprehend. I was rather ‘disappointed’ in this, for at the level of denotation, all the participants recognised it as a man with his mouth wide open. Not one commented on the dark grey ‘box’ background ‘framing’ the objects.

On the level of connotation, no participant suggested really extreme interpretations – for example, the line where the neck stops suddenly might have suggested to some participants that it was a severed head, for wouldn’t the extreme expression on the face support such an interpretation? Many participants remarked on how very wide open the mouth was, and only two

commented on this without suggesting a reason: Elizabeth said, “I wonder why his mouth is so wide open?” and that she did not know what any of the other things were, while Silindile said the things were simply “dots”. The most extreme explanations for the wide open mouth and surrounding shapes were as follows:

I see a man, looks like he is injured on the mouth. *Prompt: Why?* Because his mouth is wide open yet this looks like blood. (Lindiwe)

I think this man is drunk, now he is sick. *Prompt: What is this?* Tears and this is breath as he was coughing. (Muzi)

Six participants (26%) suggested the man was crying, including the above quote about tears. Thokozani commented on the small white circles/dots by saying, “These look like tears but it’s strange how far they are from his face.” Thembani said those circles were flies. Two participants said the man was yawning. Seven said the man was coughing, and “breath” or “breathing” occurred frequently in the different interpretations, altogether 10 times.

The hand shape at the bottom left of illustration 3C was usually not mentioned at all, unless it was included in the group of ‘shapes’ outside of the man’s face and mouth, for example, Bongwiwe said, “These are the things the person has coughed out,” and Nosipho said, “All of them are coming from the mouth.” When asked specifically what the hand shape was (and we did not name it as such when asking), nine of the participants said they did not know. Thabile suggested it was “something drawn for him”. Only two named the shape as the man’s hand – Muzi and Jonas. It is possible that a few others also recognised the hand and may have named it if we had prompted more; however, Bongwiwe clearly thought of a hand but did not see one in the illustration:

I see a person with mouth wide open. Coughing but without covering the mouth with a hand. These are the things the person has coughed out.

Four others who tried to identify the hand shape when prompted about it said it was something from inside the man, and the most explicit comment was from Thembani, translated as “Spit, yellow stuff from the chest.”

From the above, it is clear that while elements of this more stylized illustration posed some interpretation problems for the participants in this study, all the participants were able to recognise the major part of the denotation of the illustration, a man with an open mouth. Coughing was mentioned more often than it was for the previous two illustrations in this set, however, germs and the spread of disease did not really feature. However, a significant number (43%) drew unintended connotations from what they described (that he was crying, yawning or

simply breathing), and this does not include the two people who could not venture any opinion at all. It seems likely that the very stylized nature of the hand in particular really interfered with participants' abilities to interpret the intended meaning of the whole illustration.

### **Summary of analysis and findings for Set 7, illustrations 7A, 7B and 7C**

Illustration 7A was better understood than illustrations 7B and 7C. This seems surprising as Illustration 7A was more conceptual, attempting to show the internal working of the body which we do not physically see. However, responses to the illustrations in Set 4 (illustrations 4A, 4B and 4C, discussed previously) revealed that at least three quarters of the participants correctly interpreted the depiction of internal organs in a cross-section diagram of the body, which resonates with the similar finding for Illustration 7A.

In contrast, the more naturalistic, iconic depiction of illustration 7B somehow did not say enough in terms of the intended interpretation of how germs can spread.

The denotation of the very stylized depiction of a head in Illustration 7C was better understood than expected, however, the exaggerations lead to more misinterpretations of the connotation, such as crying. The confusing or incomprehensible details, such as the hand shape, were apparently simply ignored by many participants unless they were prompted to comment on them. This may link to the theory that viewers may ignore details or objects which they cannot identify in illustrations, demonstrating "selective" perception (Fuglesang, 1982: 145).

Generally, although many participants understood breathing or coughing, the interpretation of germs and the spread of illness was not satisfactorily communicated – in other words the deeper connotations or salient details of the intended meaning were not understood or expressed.

## Set 8: Pictorial depth

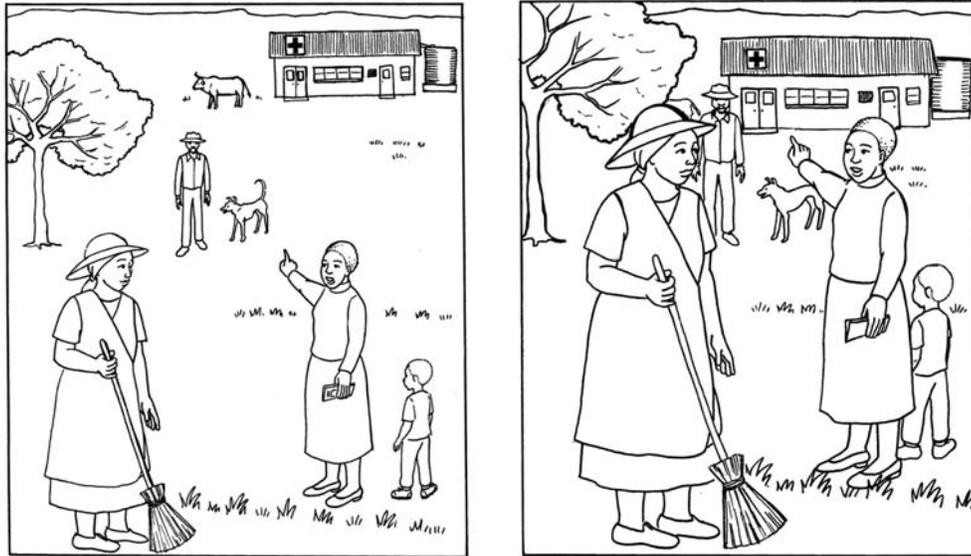


Figure 94. Set 8: Pictorial depth - Illustration 8A (left) and 8B (right)

### *Participant's responses to illustrations 8A and 8B*

Yet again, the purpose of Set 8 was to explore the effects of different ways of depicting pictorial depth, and yet any discussion of this seems to become a discussion of the various interpretations of the meaning of the pictorial elements as signs, rather than their relative sizes and positions within the two-dimensional 'picture plane'. These spatial syntagms do, however, have bearing on the semiotic interpretation of content.

The responses to both illustrations 8A and 8B suggested that none of the participants had significant problems with interpreting the way space, depth, and proportion were depicted. Only Thabile said something which suggested a possible misinterpretation of space, with reference to illustration Style 8B (with overlapping):

Sweeping, wearing takkies, shoes and a white dress with black lines on the sides and a hat. **Man next to her** in a hat and he is wearing shoes, with his dog. A **woman behind the dog** with a stretched out arm and has a phone in the other hand, followed by a child. These are houses.

Her response to other illustration 8A is the first of the 'typical' responses reproduced below, and does not suggest any spatial 'confusion'.

Although interpretations of what the illustrations were about varied a little, the basic denotation of each illustration was in accordance with what the icons were intended to be. All 23 participants correctly identified the major constituents in a manner that made ‘spatial’ sense.

In both versions 8A and 8B, all of the participants recognised the building as a building even though it was an object seemingly ‘smaller’ than the people in the landscape were. Thus, I classified all of the interpretations as ‘intended’ denotations. What type of building it was, or its purpose, belonged to the next interpretive layer, that of index and related connotations – for example, whether the cross signified health care or Christianity to a participant. The cross sign meant that the building was variously interpreted as a clinic or hospital, and a church, while some described the building as a house, and a school or crèche.

The following are examples of the most typical responses to Illustration 8A:

A house, tree, a cat – what is this? – It’s a cow, man and his dog, woman pointing showing the child ‘we are going there’. Woman with a hat and a broom in her hand wearing takkies. (Thabile)

Tree, cow, church, man with his dog, and a woman with a broom – she is sweeping, and a woman with a hymn book going to church. (Bongiwe)

There’s a woman holding a broom, and the other one, I don’t know what she’s pointing at, maybe at that hospital, and she has something in her hand – I don’t know if its money or some papers? And there’s a young boy, a man standing with a dog, and a cow. (Busisiwe)

Only four participants, Bongiwe, Zandile, Sibongile and Lindiwe, interpreted the building as a church. These four interpreted illustrations 8A and 8B both in the same way. Lindiwe did not mention church directly in her second response (to 8A), but she said that the woman in the picture had a Bible, which together with her previous response to 8B (see below) implies the ‘church’ interpretation:

A tree, a church, a man and a woman with a broom, a dog, and a woman with a child, and another woman holding a Bible. (*Prompt: What do you think this woman is doing?*) I think she is preaching to the woman with a broom about the church. (Bongiwe)

The above-mentioned four participants were in the rural group, at the same centre. Interestingly these same four also interpreted as a church the similar clinic building depicted in Illustration 1C (‘the road to AIDS’). Them bani expressed uncertainty with regard to Illustration 8B (the one from this set which was seen first during the interview), saying, “A house, I don’t know if it’s a hospital or church”. However, she opted for the clinic interpretation when responding to 8A later on:

... Maybe she is taking the child to the doctor and maybe she is asking where the doctor is.  
(*Prompt: Where do you think they are going?*) Clinic (Thembani)

Just over three quarters of the urban participants identified the building as a clinic or hospital in both versions, while a fewer than half of the rural group made this intended interpretation.

Four participants from the urban group clearly recognised that 8A was the ‘same’ as 8B, seen previously. Muzi said, “Same as before but has a cow,” while Jonas said, “Same people.” The two others expressed this differently, with Thandeka saying, “... the cleaning woman is still talking to these people” and Nosipho who said, “...the other woman is still cleaning.” It is quite likely others also noticed that the pictures contained the same figures and objects, or seemed the same, but did not express this. Perhaps some were too polite, or tired of the interview, to say, “Not this again!”

On the whole, both of these illustrations had 100% correct or intended basic denotation responses. Illustration 8A (without the overlap) had a slightly better rate of identification of all the objects in the composition because nobody mentioned the very tiny bit of occluded cow in 8B – indeed, why would they. All the other objects in 8B were commented on, and the overlap seemed to create slightly more dynamic responses regarding the relationships between the different figures. For example Bongiwe responded thus to 8B,

Two women, a man, a dog, a child and a tree. Woman with a broom, sweeping. A church, this is a cross. This pictures is teaching us to go to church, plant trees and rest, and to find fuel wood in them.

I find the last line of this explanation almost lyrical, although it may simply reflect other ‘lifestyle’ messages from the literacy group, from church, healthcare and/or community development workers. Bongiwe’s description of Illustration 8A, seen last, seems flatter, with less emotional appeal:

Tree, cow, church, man with his dog, and a woman with a broom – she is sweeping, and a woman with a hymn book going to church.

Of course this ‘flatness’ may be caused by a “not this again!” effect, as this was the second time she was asked to respond to a similar illustration, and that the participants’ responses to the first version they saw were naturally more likely to be ‘fresher’ or more lively.

From a researcher’s perspective, Set 8 seemed the most ‘disappointing’ of the illustrations included in the study, because the differences between the version 8A and version 8B which I had carefully engineered did not seem to result in differences in the participants’ responses of

any real significance. Nobody thought the man was a boy, or that the cow was a dog, or that any of the women were giants. Were these illustrations simply bad examples to use to assess pictorial depth perception abilities? Would that mean the illustrations were successful depictions, because all of the participants seemed to correctly and unconsciously interpret the pictorial cues about distance in all but one case? Or is this one area where low-literate adults do not have interpretation problems? I cannot answer these questions with certainty, but would need to consider the illustrations more carefully before embarking on further research in this particular vein. These questions link with the theoretical notion that pictorial depth perception is a skill which draws extensively on unconscious 'real-life' perception which sighted people use all the time, such as noticing differences in object outlines and relative sizes in order to make sense of their spatial environment (Kenney, 2005: 103; Messaris, 1997: 13).

...a graphical convention that requires visual literacy, but there is a clear analogy with the way we see the world, particularly how we experience near (larger) and far (smaller) things in our environment (Carstens et al., 2006: 223).

What came out most strongly with regard to this set of illustrations was again that urban participants tended to interpret as intended the more connotative layer of meaning attributed to the objects and symbol than the rural participants.

### **Summary of analysis and findings for Set 8, Pictorial depth perception**

All of the participants correctly interpreted the depiction of pictorial depth in both Illustration 8A and Illustration 8B. This may be as much to do with the quality or choice of the illustrations as it is to do with the participants' skills of pictorial perception. The latter can be linked to visual literacy theory which suggests that depth perception in pictures employs real-life visual skills and does not necessarily depend on knowing special pictorial conventions (see Messaris, 1994: 13). This finding suggests that the situation has changed vastly since the early studies of Hudson (1960, in Linney, 1995; Messaris, 1994), although the findings of such studies had already been challenged by Cook (1981, in Messaris, 1994), amongst others.

In the light of the above, the analysis became more about how participants' interpreted the denotation and connotation of the more 'narrative' content of the illustrations, and how the symbol of the cross on the building was interpreted, for example, and this information is detailed below. All the participants correctly identified the basic denotation of the illustrations.

In terms of the original intention of exploring the pictorial depth perception skills of the participants, I can conclude that they could all understand this convention in these illustrations. I

believe it may be possible to engineer different results with more deliberately misleading or inappropriate depictions, an issue discussed in critiques of some early studies into this issue (see Fuglesang, 1982: 166; Messaris, 1994: 65-69). The scene depicted in both illustrations was local and plausible, with familiar objects, and this is likely to be a factor which enabled the spatial interpretations as intended.

### Set 9: Background detail



Figure 95. Set 9: Background detail – Illustrations 9A (left) and 9B (right)

#### *Participants' responses to illustrations 9A and 9B*

For both illustrations 9A and 9B, all the participants identified the intended denotation, describing the people. For version 9A, most participants mentioned a woman, a child and a man, and interestingly 18 out of 23 responses (78%) mention the woman first, and the majority of these in the same order in which the three people are arranged in the picture if you 'read' it from left to right. Five participants used the term "family" to describe the figures in version 9A, and several used the words "mother" and "father" to describe the man and woman. In describing the denotation of version 9B, 22 of the participants referred in some way to all the people depicted, including those in the background. Only one participant ignored the additional figures in the background of version B, and this was a rural male aged 20 years who had reported no formal schooling at all.

I compared each individual participant's responses for illustration A and B, to see whether their interpretations retained some consistency, and most of these were similar regarding the three figures in the foreground. I go into more detail about this further on.

Typical denotative descriptions of illustration A (figure 14, left) include "Woman, child, and a man. Woman has a cloth and the man is holding his mouth." and "I see a family. The woman has a towel and is wiping her hands. The child is holding the man. The man has his hand on his mouth." Where the word "family" is used, I consider this to be a connotation derived from the man, woman and child combination. The other details in the second quote (above) refer to physical poses or actions but the participant does not venture to say what such gestures mean, and thus these comments remain at the level of denotative or surface descriptions.

Connotative interpretations of illustration 9A include:

Person thinking, woman wiping her face. From what I see this is the child's father and mother, which means they are a family. (Muzi)

The woman has a towel and is wiping her hands. (Lindiwe)

A family. A woman washing dishes. I think so because she has a dish cloth. The man looks like he is exclaiming. (Nondomiso)

They are just talking. (Sifiso)

I see a man with his hand on his mouth ... looks like he is eating something. (Thabile)

They look worried. (Bongiwe)

Father is coughing and the mother has 'flu. (Didizana)

For illustration 9A, only seven of the participants interpreted the intended connotation, that the adults were coughing, sneezing, or showing signs of illness.

12 participants interpreted the meaning of this illustration in unintended ways, the most remarkable being Philisiwe's suggestion that the father was sucking his thumb – a not unreasonable interpretation if one looks again at the illustration with this in mind. None of the participants made any direct mention of germs or diseases spreading between people, for either illustration 9A or 9B. Thembani said,

I think this one is coughing (*indicating the man*). It's as if this one also has something to cough into. I would like to know if they are sick with disease or something.

Although the sick individuals are then described as “they” who might be sick with a disease, it would be tenuous to suggest that this response contains the implication of the spread of a disease between people. Even if it were possible to make that claim, the participant still did not reach the intended conclusion of the manner in which a disease like TB can spread.

Only Busisiwe mentioned TB directly. She said, “... the man and the woman are coughing, they look like they have ’flu or something.” At this point a direct prompt was given, namely: *Any particular illness you associate with coughing?* To which Busisiwe responded, “It’s probably TB.” The use of the prompt, and the fact that it was the symptoms of illness and not the means of transmission that was commented on, meant that this one mention of TB did not seem very satisfactory as an intended interpretation.

Thandeka seemed to refer to testing for TB when she said of Illustration 9A, “I see a man spitting into the bottle. The woman is coughing into the cloth.” I did not ask for clarity on what was meant by spitting into the bottle – I assumed it to mean TB testing, but later wondered if it might refer to something else? In retrospect I should have asked, “What sort of bottle?” or “Why is he doing that?” In this case my query was answered by checking up on Thandeka’s interpretation of Illustration 9B, the ‘same’ as 9A but with background detail, about which she said,

Looks like these people are visiting the clinic and they have been asked to spit into a bottle.  
*Prompt: for what?* To check if they have TB.

Perhaps the inclusion of people in the background created more of a sense of context for this participant, locating the foreground figures in a clinic more explicitly in Illustration 9B. Jonas also suggested a clinic or hospital setting, by mentioning a doctor:

Same picture as before. But behind (right) are a doctor and a woman. Behind (left) a man and child going to the doctor. A woman going in the other direction comes from the doctor.

I find it surprising that the rather loosely drawn figure at the back right of the illustration is very definitely identified by the participant as representing a doctor. For me this shows how all the elements of a picture or graphic may combine to lend meaning or interpretive cues to objects or elements that on their own are likely to be more difficult to comprehend. The obvious concern of this research with health matters helped to transform what I intended to be a street scene into a clinic. Interestingly, Mary described the “doctor” figure as “a white person”, although she makes no mention of a context such as a clinic or a street and did not suggest what the picture might mean.

Similarly, in terms of such detail, when I made the original illustration for the *Learn with Echo* article on TB, I had attempted to show that the man in the background (to the left) was spitting on the pavement. I did this using several lines arcing down, a “graphical device” aimed at extending meaning by attempting to show movement and to draw attention to the spitting behaviour (Boling et al., 2004). This had seemed like quite an important – though unpleasant – part of the illustration’s message. Yet only Busisiwe remarked on this in some way, when she said, “I see some people coughing, yes, and that other man over there at the back, he’s coughing and not putting his hand by his mouth.” Even though she interpreted the intended depiction of spitting as coughing, the point is that she noticed the detail.

I stated above that all the participants recognised the denotation of both pictures, referring to people, and almost all mentioned the extra background people in version 9B. Only four participants made it clear that they knew they had seen the illustration, or a major part of it, before (as Illustration 9A). Two of these openly said it was the same picture before going on to describe the background detail. Muzi implied there was no difference between the two versions. He said, “I have seen this already. People walking.” When asked if there was anything else, he was, “Same as before.” Philisiwe indicated that she recognised the figures in the foreground from before when she said, “Dad is *still* sucking a thumb.”

Only Siphso, whose descriptions of 9A and 9B were extremely similar, was asked directly if he had seen illustration 9B before, and he said, “No, never.” It is difficult to know whether this means Siphso did not recognise the three foreground figures at all from before (in Illustration 9A), or whether he simply viewed the second version, 9B, as a different illustration because it contained many other visual elements, which is understandable.

With Illustration 9B, the percentage of intended connotations of what the picture was about dropped to 22%, from the 30% for Illustration 9A. Only five participants mentioned that one or other of the figures in the foreground was coughing. More often others said the man was “exclaiming”, thinking, eating something, or talking. The cloth in the woman’s hands was mentioned by 16 participants in relation to Illustration 9A, but only six mentioned it again when looking at Illustration 9B. The woman was also described as looking sad, troubled, and that she seemed to be crying. A few of these interpretations were repeated across the different versions. For example, Thokozani said the cloth in the woman’s hand meant she was washing dishes in both illustrations 9A and 9B. However, Thokozani also said the man in Illustration 9A was “exclaiming”, and yet she said the same man in Illustration 9B looked like he was thinking because of the way he was holding his chest. At risk of glossing over the small details of lightly

changed interpretations between illustrations 9A and 9B, 14 participants (61%) made roughly the same comments about the two versions, some with a few differences, and then made some mention of the additional background figures. Typical examples of how the ‘new’ figures were mentioned include:

I see a woman with a cloth. A child holding onto the man. A man with a child. Woman with a child on her back. Old lady walking. Man. (Hannah)

Woman, children and men. These are men and children. There are two children and six adults. (Sifiso)

To address the reason for the inclusion of this illustration in the study, the effect of the background in version 9B seems to have been to draw attention away from the details of the foreground figures and the meaning of their gestures and expressions. However, the background also inspired more contextualised interpretations, which could be very helpful depending on the purpose of an illustration.

In the absence of a verbal text or article, the denoted content of both illustrations of Set 9 is rather bland, being little more than a collection of different figures exhibiting gestures and facial expressions that are open to misinterpretation, if they are noticed at all. There was very little in the way of inferred meaning or an account of what the illustration was really about, for either version. There was a very slight increase in number and variety of the alternative connotative interpretations made for Illustration 9B, in comparison with 9A (from 12 for 9A, to 13 for 9B), but the difference is insignificant.

It is possible to conclude that while the inclusion of background detail certainly may detract from the main focus or message of an illustration, sometimes it is appropriate and desirable to provide the audience with context. Context and detail have the potential to stimulate interest and offer interpretive cues. Situations where such background detail would be inappropriate would be instructional illustrations, or where one really doesn’t want the intended reader to be distracted from a particular message.

The example in this study was selected because of my own unease and curiosity about an illustration as I produced it. The research experience suggests to me that this illustration was perhaps not particularly suited to this aspect of the study, because the depiction of coughing proved to be rather problematic in other sections of the same study (see Set 5: the depiction of TB symptoms). In the other words the issues highlighted seemed to have more to do with the illustrations’ content than their style, which in fact was not really different between the two

versions 9A and 9B. Thus the attempt to assess the effects of the background detail may have been complicated by this difficult element, and by the fact that it was not a particularly strong illustration in any sense – perhaps this last fact was the source of my unease as I made the illustration in the first place!

### **Summary of analysis and findings for Set 9, Illustrations 9A and 9B**

As with the other illustrations which intended to assess technical issues of style, it proved impossible to do this without considering the meaning of the content of the illustrations. The intended meaning of Illustrations 9A and 9B at the layer of connotation was problematic for all the participants, and the inclusion or exclusion of background detail did not really alter this. Neither illustration can be said to be better or worse at conveying the intended meaning of the spread of germs among people – both versions were unsuccessful at this.

In this case, the background detail in Illustration 9B simply gave the participants more to look at and talk about – the responses reveal more attention to the context in which the figures find themselves. This finding is similar to my conclusions about the more successful Illustration 3D, which managed to evoke a home-based care context for 70% of participants but perhaps drew attention away from the intended ‘wear gloves’ message.

I regard Set 9 as the least satisfying, in research terms, of all the illustrations included in this study because the choice of illustration(s) was not considered carefully enough to effectively explore the effects of the inclusion- versus the exclusion of background detail.

### **Overview of findings for Sets 6 – 9**

Like the previous table in this chapter, the table below provides a concise view of how the participants responded to the illustrations which aimed to assess their preferences and the comprehensibility of different illustrating styles, levels of stylization, and visual elements/devices like the depiction of distance and background detail.

<b>23 participants – 11 urban (U), 12 rural (R), Total (T)</b>					
<b>Participants' preferences for styles</b>					
<b>Illustration</b>	<b>U</b>	<b>% U</b>	<b>R</b>	<b>% R</b>	<b>% Total</b>
6A Line drawing	1	9	2	17	13
6B Ink wash tones	0	0	0	0	0
6C Cross-hatched lines	1	9	0	0	4
6D Lines with flat tones	8	73	10	83	78
<b>Participants' comprehension of different levels of stylization</b>					
7A Cross section breathing/cough	9	82	8	67	74
7B 'Realistic' cough	5	45	3	25	35
7C Abstract cough	4	36	3	25	31
<b>Participants' comprehension of pictorial depth</b>					
8A Pictorial depth (scale)	11	100	12	100	100
8B Pictorial depth (occlusion)	11	100	12	100	100
<b>Participants comprehension of illustrations with and without background detail</b>					
9A No background	6	55	1	8	32
9B Background	4	36	1	8	22
	N=11		N=12		

### **6.3 Discussion and analysis**

#### **General findings about the illustrations**

Very few of the illustrations were interpreted as intended by the participants in this study. While most participants could identify iconic depictions of people and objects, far fewer participants described what these depictions were intended to mean. The purposes of the illustrations were often unclear, or open to different interpretations. The polysemous nature of visuals described by Barthes (1977) was clearly demonstrated, as these illustrations were revealed to have a wide latitude of interpretation (Gaede, 2010).

Those that ventured to give interpretations beyond surface descriptions mostly interpreted the illustrations in unintended and often unexpected ways. When comparing the findings of the

semiotic analysis of the illustrations, described in Chapter 6, with the rates of intended interpretations of the illustrations by the participants, there does seem to be a clear relationship between how directly Peirce's sign types in each illustration relate to their intended meanings and the participants' abilities to decode the messages.

In addition, the participants' interpretations of the illustrations clearly demonstrated the theoretical layers of meaning – denotation and connotation – often in very simple terms. It was clear that recognising objects and people in an illustration is not the same as interpreting the intended meaning of the illustration.

This supports others' findings, that pictures of analogical/familiar objects are more easily interpreted by low-literate viewers – see, for example, Carstens et al (2006: 225), Hoogwegt et al (2010: 188), and Dowse (2010: 167). Even so, the often complex underlying ideas of many health messages are unlikely to be deduced by this audience through visual communication alone (Hoogwegt et al., 2010: 189).

Very often participants recognised the icons, and therefore described the denotation of an illustration as intended, but misinterpreted the connotation. Many participants described the denotation only for many illustrations. This was especially true of participants from the rural group. This might be because some participants were not used to talking about what a picture really means. Unfortunately, I could only analyse what the participants said, in translated form, and cannot speculate on how much more they thought about or actually understood the illustrations. I reflect on this in relation to the research methodology in the following chapter.

Above all, the complex nature of pictorial interpretation was highlighted – sometimes participants could get connotative and denotative levels 'correct' and 'incorrect' at the same time. For example, a participant's response to illustration 4A depicting the internal organs: "The way a person digests food. No! The person is eating and she is pregnant. The picture shows how the baby gets food from the mother." It was sometimes difficult to decide how to treat responses like these.

### **Which approach to content was the most successful?**

In terms of communicating the intended message, the illustrations with the most direct sign-object relationship were interpreted the most successfully. This also means the ones that seemed to have the least complex intended message, such as content which required fewer indexical relationships to be inferred, or less complex/smaller conceptual leaps. The best example of this

was, unexpectedly, the illustrations depicting internal organs, particularly illustrations 4A and 4B. On first consideration these illustrations of internal organs in cross-section diagrams are not depictions of reality as we see it.

However, two things seemed to contribute to the higher rate of intended interpretations. Firstly, the intended message of this set is not as complex as those of most of the other sets of illustrations, many of which attempted to convey behaviours, signs and/or progressions of illnesses, or desired practices. The intended message is simply, “These are the organs inside the body”, or “the digestive system”. There are fewer layers of visual meaning and a less complex connotation than in many of the other illustrations.

The second factor might be that most of the participants may have witnessed the slaughtering and dismemberment of animal carcasses as a feature of rural life, and practiced in traditional Zulu ceremonies, common even in more urbanised areas. Therefore, many participants should know about the existence and appearance of the internal organs in animals, and have such information in their ‘mental schema’ or ‘brain bank’ of mental images and concepts. This can be related to Peirce’s concept of the interpretant (Fiske, 1990: 42; Manning, 2004: 570). Such familiarity with the signified objects/content would help participants to interpret icons, visual cues and conventions. This contrasts with the inability of almost all of the participants to interpret the representations of the virus (Set 2 of the illustrations) which is also something inside the body. However, we never see an actual virus in the same way that we can know about or even see internal organs. However, one or two participants did manage to interpret such illustrations more or less as intended and these abilities suggest that their individual health education experiences and background helped them to decode more complex sign combinations (or syntagms). They may also have had more experience generally in interpreting images.

Theories of perception are helpful to explain this. According to Arnheim, memories of things seen before serve to “identify, interpret and supplement perception” (1970: 84) and “the most useful and common interaction between perception and memory takes place in the recognition of things seen” (1970: 90). Similar more recent summaries of this complex process seem to concur with this explanation (Barry, 2005: 51; Hoffmann, 2000: 50; Messaris, 1994: 56-58). This relates to the role of ‘embodied’ and ‘experiential’ meaning, which has been found to increase the abilities of people with low levels of literacy to recognise objects in illustrations (Bruski, 2011; Carstens et al., 2006: 225; Hoogwegt et al., 2010: 181).

Thus although the diagrams in Set 4 may seem more conceptual, the rate of intended interpretation was higher than expected, and much higher than that of the illustrations from other sets. Even Illustration 4C, containing a graphical device, had a higher rate of intended interpretation than other illustrations. Illustrations 4A, 4B and 4C seems to have had the right combination of a relatively simple message, in syntagmatic terms, suited to visual communication and content that was probably familiar in terms of most participants' experiences.

Other illustrations the denotation of which the participants recognised, but they did not understand the connotation the intended message relied on, were again depictions of familiar or plausible scenes. These include illustrations 1B (Stages of HIV), 2A (HIV), and 3D (Safety for caregivers), and some of the individual pictures in illustrations 5A and 5C (for example, the person on a scale). Participants were able to describe what they saw in these illustrations in quite literal terms, even though the more complex intended meanings were elusive. Similarly the illustrations with background detail relating to the intended message worked in terms of 'scene setting' and often seemed to help participants to verbalise more about an illustration, providing a kind of scaffolding, or motivation for interpretations. This finding is consistent with Bruski (2011: 96), that icons providing context do help people with low levels of literacy to interpret illustrations. I would venture that the same is true for all people!

### **Which styles of depiction worked best?**

The participants in this study had very clear preferences when offered comparisons of artistic styles. These preferences were based on comprehensibility and on how the different styles affected the perceived content messages. The most popular image was the one in which participants felt the people looked most healthy.

This suggests that certain more 'artistic' ways of using tone, in this case ink wash and cross hatched shading, were misinterpreted, in that tonal marks were taken literally. If the style of depiction suggested a negative situation to the participants, this meant it became part of the content, suggesting unhappy facial expressions, or wounds as indices of illness. This explains and affirms much earlier findings by Sejake, that "the primary criteria for visual perception and preference in illiterate people are clarity and context" (Sejake, 1993: 23). Black and white line drawing with areas of flat tone were preferred, and worked best because they seem to be the least spatially 'invasive' on content.

The most abstract and stylized depiction in the ‘Styles’ group of illustrations, illustration 7C (a coughing disembodied head with ‘hand’ nearby) was partially understood by most participants, however, again the graphical devices and the ‘closed hand’ shape were mostly misinterpreted and caused confusion, strengthening the finding that style influences content and can interfere with viewers’ interpretations of the message.

The traditional guideline that the depiction of pictorial depth creates problems for viewers with low levels of literacy was not supported by the interpretations of these illustrations. Neither occlusion (overlapping/partially seen objects) nor different proportions interfered with participants’ abilities to correctly identify icons and interpret the three dimensional spatial relationships between them as intended.

The benefits/threats of including background detail were better revealed by illustrations 3C and 3D in the ‘content’ group, than by illustrations 9A and 9B which were intended to test this aspect. My opinion is that these latter two did not really add much to this study and could have been left out. Background detail is valuable for creating context which can aid viewers’ interpretations of a general situation. However, specific important details of an intended message may not be noticed. Carstens’ and Fuglesang’s slightly contradictory recommendations /warnings for and against the inclusion of detail, cited in Chapter 3 are both supported. Carstens (2004b: 474) suggested that too much background detail is likely to distract “visually unskilled” viewers from the main focus of an illustration, while Fuglesang (1982: 165) showed how important details of the main objects depicted could aid identification.

I have already made the point that it is difficult to separate discussions of style and content of illustrations, as my analysis of responses to the ‘style’ group of illustrations reveals.

### **Which illustrations were the least successful at communicating their intended meanings?**

So many of the illustrations tested in this study were misinterpreted in different ways that it is challenging to understand and sum up the reasons why each failed to communicate. Here it is helpful to refer back to the detailed semiotic analysis of each illustration.

At risk of repetition, the key issue is that the content of certain illustrations related to their intended meanings through more complex sign-object relationships than others. Some illustrations assumed contextual/background knowledge on the part of the viewer to make indexical connections, and demanded inferences to be made about certain symbols or other

visual conventions. The participants' interpretations relate strongly to semiotic theories on how meaning is created and communicated through signs, particularly Peirce's categories of signs – icons, indices and symbols – and how signs relate to their object or intended meaning in a combination of these functions.

Again, the 'interpretant' is important, the contextualizing idea(s) which influences the meanings individuals attribute to signs (Fiske, 1990: 42; Manning, 2004: 570; Moriarty, 2005: 228). Thus, personal associations, knowledge, and context contributed to each person's interpretation of an illustration, and these varied within categories and groups of participants. Given this semiotic challenge, where even the work of the illustrator (message producer) is an interpretive activity, the illustrations which were the least successful at communicating their intended meanings were those which relied most heavily on a shared knowledge of conventions, experiences, information and beliefs. These proved to be the most complex, in semiotic terms.

For the participants in this study, the following sign-object relationships and approaches seldom communicated the intended meanings successfully:

- Illustrations which utilized the conventions of picture 'frame' sequences to show processes over time, or consisted of groups of un-sequenced but conceptually related pictures. These required knowledge of conventions, and a great deal of inference by the viewer to fill in the narrative 'gaps' between frames, or to link concepts across/between frames. See illustrations 5A and 3A particularly, but also 1A and 1B.
- The depiction of action and movement in 'still' illustrations, to index for example, coughing (see Set 5 for examples). All the ways of doing this, including the use of 'graphical devices' (such as lines from the mouth) and physical poses/gestures, and facial expressions were subject to a variety of interpretations which often negatively affected participants' abilities to arrive at the intended meaning on either denotative or connotative levels.
- Metaphors, in this case for HIV (the hovering monster virus in illustration 2B), and for the stages of HIV infection (the road in illustration 1C). Most participants attempted to interpret the icons literally, which led to confusion.
- Illustrations which combine different graphic conventions and thus a variety of conceptually demanding combination of sign types in the same picture(s), for the purpose of attempting to convey a complex message or difficult concept. Illustration 2C is an example which combined what is seen (a bleeding hand) with what can be known but not

seen with the naked eye (a sort of diagram of blood cells and virus shapes), ‘linked’ with an arrow symbol, to explain what happens in the blood.

The notion of cognitive load applies, which gets heavier when different sign types and graphical conventions are combined in the attempt to convey a complex message, which may compound interpretation difficulties (Carstens et al., 2006: 228).

The above point about the challenge of depicting movement must be compared to recent findings by Carstens et al. (2006: 228-229), Hoogwegt et al. (2010: 188-189) and Dowse (2010: 167). Conventional, symbolic graphical devices such as arrows and lines indicating movement were found to be largely ineffective at suggesting movement to low-literate viewers, and the use of “natural visual elements such as hands and objects” to show the direction of intended movement were better understood (Hoogwegt et al., 2010: 188). My findings support these findings, but show that even physical gestures and facial expressions are often misinterpreted by the participants in this study, more frequently by participants from the rural group.

### **Differences between the interpretations of rural and urban participants**

One of the questions guiding this research was to explore the differences between how urban and rural participants interpreted illustrations. There did seem to be differences between urban and rural participants’ interpretations. However, I feel cautious of overemphasising differences between rural and urban participants’ interpretations, and creating a false dichotomy. The sample size is small, thus any conclusions must be treated as tentative suggestions.

Certainly the participants cannot be treated as homogenous groups, whether as ‘urban’ or ‘rural’, or altogether as low-literate. On the most basic level, these labels simply say where the participants were when I interviewed them. It is a matter of assumption that the participants spend most of their time in these respective environments, the characteristics of which are based on more assumptions.

Bearing these cautions in mind, the following points seem worthy of consideration:

- Rural participants were less likely to discuss the connotations, or the indexical and symbolic meanings of illustrations, focussing instead on surface descriptions of icons, the denotation.
- Rural participants, especially those in the 60 to 70-year-old age group, tended to interpret illustrations more literally than urban participants did. This finding supports the

suggestions that very literal interpretations of images may interfere with the ability to reach generalised meanings beyond the basic representation (Boling et al., 2004: 189), and helps to explain the previous point.

- It is possible to some extent to predict how certain objects and symbols might be interpreted by urban and rural audiences. For example, most rural participants interpreted the building with a cross on it as a church, while most urban participants saw this as a clinic or hospital. Rural participants battled to interpret depictions of gloves and plasters, which many urban participants recognised.

I believe the above differences are mainly due to the differences in urban and rural environments, in terms of the availability of health (and other) resources, as well as the number of visuals encountered in daily life. If we see and process visuals using mental schemas developed through our experience, as perception theory suggests (Severin & Tankard, 1992: 82), then the above differences in the processing and discussing of visuals make sense.

The above must be related yet again to Peirce's interpretant, one of the factors in the semiotic triangle representing sign processes, or how meaning is derived from signs. It would be very easy to refer to the interpretant as if it is the same as a mental schema, for example, by referring to an individual's interpretant which informs how he/she understands what a sign means. It is an overwhelmingly tempting use of the concept because it seems so practical and direct. It may not be strictly wrong to do this, but it has been emphasized that the interpretant is not a person (the viewer). It does not exist separately from the sign.

The interpretant is produced by the sign, *and* the viewer's associations with the sign and its object, i.e. the message or thing the sign represents (Fiske, 1990: 42). What form the latter takes in the mind of the viewer surely depends on the viewer's mental schema. The interpretant can be "a body of knowledge, a formalized code book, or an abstract statement of principles" (Manning, 2004: 570). This is one of three factors in the sign process. Because the interpretant fulfils the vital role of accounting for context in the process of signification, it is useful in understanding how audiences in different contexts differ in their interpretation of certain signs but not others,

### **The significance of reported formal education levels**

Reported levels of formal education seemed to influence pictorial interpretation skills noticeably in the case of one participant only, and that was Busisiwe. With the most recent formal schooling up to Grade 8 level, and some fluency in spoken English, it is inferred that she was likely to be

basically literate in English and therefore not in the same category of ‘low-literate’ as the other participants. Her interpretations of the illustrations were very often closer to the full, intended meanings than the others’ interpretations.

However, this finding must be contrasted with those instances where participants who reported no schooling at all correctly interpreted challenging illustrations seemingly ‘out of the blue’. Didizana, for example, regularly gave insightful interpretations very close to the intended meanings of the most obscure illustrations (for example, illustration 2B). Her interpretations in particular, as well as some of the others, suggested to me that she had a lot of background or contextual knowledge about HIV and experience of the common ways of teaching and talking about it. Of course, the above discussion on schemas and interpretants above applies here as well.

Therefore, I would conclude that Busisiwe’s different educational background influenced her ability to interpret and describe illustrations in the interview, and set her responses apart in their fluency and detail. However, other participants with no prior formal education interpreted complex illustrations equally well where they seemed to have personal experience or background knowledge that contributed to the interpretive process. This supports Bruski (2011: 84) who found that literacy levels exerted less influence on pictorial interpretation abilities than did participants’ previous experiences. Formal schooling does seem to have shown an impact here due to its role in the development of “the ability to perform ‘talking about’ tasks (this is called expository talk in contrived situations)” (Lyster, 1992: 24). Busisiwe seemed more consistently able to talk her way through interpretations of illustrations than those with no formal schooling.

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The information gleaned from the interviews and described in this chapter provides much to think about, by revealing some expected interpretations and many that were unexpected. I was prepared at the start for misinterpretations, and the results were illuminating, and obviously far more interesting than if all of the illustrations had been understood as intended.

The next and final chapter of this thesis distils these findings into recommendations that may be applied to my own practice as well as being of use to guide others who develop, write and/or illustrate education materials in varieties of media.

## Chapter 7: Conclusion and recommendations

### 7.1 Overview

This study set out to investigate pictorial interpretation, with specific reference to how adults with low levels of literacy interpret health education illustrations. The extent to which adults in ABET Level 1 Zulu classes understand illustrations about health concepts is contrasted with the illustrator's intentions, based on the intended messages and purposes of the materials to be illustrated. Differences between rural and urban dwellers' interpretations of illustrations were considered. The research addresses issues of artistic style, and different approaches to content in order to communicate most effectively with audiences who have low literacy levels. I explored the extent to which the traditional guidelines remain appropriate for illustrators and materials developers of health materials for low-literate adults. Combining this with semiotic methods of analysing illustrations suggested possibilities for improved practices for illustrators, leading to more appropriately illustrated educational print materials.

The previous chapters have documented the process I followed. It was necessary to cast a wide theoretical net in order to accommodate all the fields/areas of work that turned out to be lurking in the title and main research questions, and this is reflected in the diversity of the literature I consulted and reviewed, from visual communication theory to health literacy. It was a daunting endeavour, and Arnheim's account of his own writing of *Visual Thinking* (1970: vi) resonates with my experience in dealing with but a small section of the ground he covered:

There was no way of approaching so vast a problem without getting involved uncautiously in numerous branches of psychology and philosophy, the arts and the sciences. An overview was needed, a tentative confrontation, requiring ideally a professional competence in all these fields of knowledge. But to wait for the ideal meant to leave an urgent task undone. To undertake it meant to do it incompletely. I could not hope to survey all the pertinent material nor even be sure I would discover the most telling evidence in any one area. ... With a bit of beginner's luck I could hope to establish my case sufficiently.

The cyclical process of reading, conducting the research, and then referring back to the literature with new purpose and insight, has enabled me to investigate some key issues relating to how and why learners in ABET Level 1 Zulu literacy classes interpret illustrations in particular ways. Part of this investigation has been the discovery that aspects of my questions cannot be answered conclusively. For example, I now have a deeper understanding of literacy itself as a contentious concept, variously defined according to a range of uses in different contexts, and which rules out attempts to define people's pictorial literacy levels. The other factors are the extent to which

certain types of messages can be communicated using illustrations alone, as well as the complexities and idiosyncratic nature of perception and visual interpretation.

## **7.2 Key themes in the findings**

The recurring theme of this study is that the low-literate adult participants seldom interpreted the illustrations according to their intended meanings. There are several possible explanations for this, which include factors within the illustrations and external factors to do with the participants and their context, and these can vary on a case-by-case basis. These can, however, be summed up by the following observations.

The interpretation of illustrations relies on several important factors:

- the viewer's mental visual lexicon and background knowledge/life experience
- the information or message that is to be communicated
- how that information is portrayed visually in the illustrations

These common factors are explained by theories of visual communication, particularly perception and semiotics – how signs and people make meaning. For the message of an illustration to be successfully communicated, the above three factors need to relate closely to each other. For example, the illustrator needs to have an awareness of the intended viewers' context and likely points of reference, and include these in his or her visual interpretation of the message in the illustration. This relates to what Peirce referred to as the “triangular relationship between the sign, the user and the external reality as a necessary model for studying meaning” (Fiske, 1990: 41-42) – the elements of meaning are discussed in Chapter 2 (Figure 10). The three factors listed in the bullets above relate strongly to the interpretant, the object, and the sign in Peirce's terms.

Although it is emphasized that Peirce's interpretant is not a person (but rather the context and experiences which shape what a sign may evoke in the mind of its user/viewer), in the context of my research I must retain the importance of real viewers of illustrations, represented by the participants I interviewed. In theoretical terms, the notion of the “implied reader” has a role in controlling what should be depicted in visual messages and how it is depicted (Kress & van Leeuwen, 2006: 115).

While it may be possible to predict quite a lot about members of an intended audience based on their context, including likely life experiences, education and likely exposure to images and other sources of information, this is not enough to ensure that certain types of illustrations will be understood as intended. This is due to the polysemous nature of visual signs, including images like illustrations, which are more subject to individual interpretations than are more obviously coded written verbal messages (Barthes, 1977). Many illustrations in health education materials were discovered to have deceptively complex intended meanings, which perhaps makes them even more likely to be misinterpreted than illustrations on other topics. The semiotic analyses of the illustrations also showed that in some cases the illustrator's representation of the content was idiosyncratic and thus communicatively tenuous. In the process of trying to pack several concepts or linked issues into a few illustrations – or just one – the possibilities of divergent interpretations are likely to increase. This is supported by the findings of Hoogwegt et al (2010), and Maes et al (2008).

In the light of the above-mentioned ambiguities inherent in many forms of visual communication, the pessimistic view might be to downgrade expectations of what illustrations can achieve in educational materials. However, in situations where there is the greatest possible congruence between the above-mentioned three factors that influence interpretation, a higher rate of correct interpretations might be expected. Such congruence needs to be achieved through careful consideration of these factors. For example, this would entail deciding whether certain health messages are suitable to be communicated visually, or how illustrations can be used to enhance other forms of communication in low-literate contexts.

Context is a key issue, as well as how the differences between contexts of production and reception of messages influence communication. In this study, the differences I found between urban and rural participants' interpretations support this. An example of this is the apparent trend for urban dwellers to interpret the illustrations more fully – even if wrongly – as opposed to the tendency of rural participants to provide denotative descriptions only. Even though what people say/discuss does not necessarily reveal all that they think about an illustration, this finding needs to be taken seriously when considering the strengths and limitations of pictorial communication in different contexts. It is possible that urban people are more used to receiving information from visuals, due to increased media exposure, whereas people in rural areas who see fewer pictures may not expect illustrations to contain important or useful information. Maes et al (2008) express similar views on this.

There is the potential to endlessly problematise visual communication in the context of educational materials for adults with low literacy skills. Of course, nobody suggests that illustrations should be discarded. Aspects of this study revealed some clear and positive findings concerning artistic styles and the use of certain pictorial conventions which have in the past sometimes been viewed as problematic.

### **Style preferences**

Participants showed definite preferences for naturalistic analogical depictions, and an artistic style which was clear and uncomplicated with limited detail, in this case black and white outline drawings with different areas filled with a variety of shades of ‘flat’ tones. However, simple diagrams caused fewer interpretation problems than expected, where the content was familiar, and the message not complex – thus matters of style and content do intersect.

### **Depth perception**

Participants were able to correctly interpret illustrations designed to assess the perception of pictorial depth, possibly because of the familiar objects and the scene depicted. Also the pictorial techniques of suggesting depth utilise naturally acquired real-world perception skills, such as size and proportion differences between objects seen at different distances.

### **Background details**

Background detail was found to be appropriate in illustrations where having a broad sense of context, or a situation, supported the intended meaning. However, when it was important for the meaning that a specific detail be noticed, the inclusion of a background ‘situation’ risked the important detail being ignored.

### **“Appropriateness” for different audiences**

The concept of appropriateness is extremely relevant – for this research shows that while certain approaches or artistic styles may be deemed ‘appropriate’ in given situations, appropriateness has to do with many factors. There is a danger of making assumptions about what is appropriate for low-literate audiences, based on stereotypes or assumed (yet indefinable) levels of ‘visual literacy’, for example. Participants’ abilities to interpret the illustrations in this research seemed to be influenced by a variety of contextual and experiential factors which I have highlighted. General predictions about an audience can be made, but it seems more useful to make predictions based on the characteristics of visual communication to articulate what illustrations

are capable of achieving and what roles and what messages are appropriate for visual communication in given contexts.

While low literacy levels may in general prevent people from gaining information; it should be noted that people may also gain information and understanding of issues from a variety of non-written sources, including personal experience of health related matters. Although conceptions of what sorts of illustrations are appropriate for low-literate audiences have their place, it would be impoverishing indeed to always assume these and illustrate accordingly. A greater understanding of how it is that meaning is constructed in illustrations allows one to move away from what it is that people supposedly cannot understand, to properly investigating what it is that illustrations can and cannot do. This is especially relevant in a health education context, where specific and important messages are to be communicated.

### **Limitations of illustrations**

It is necessary to conclude that although illustrations (and all types of visuals) have great potential for a variety of roles and communicative purposes, they also have serious limitations as conveyers of specific messages and important information. This is especially true in low-literate contexts, and slightly more so with rural audiences than with urban ones. Thus, while illustrated educational materials should play a valuable role of supporting and enhancing other educational or communications efforts in such contexts, they should not be seen as convenient or affordable substitutes for face-to-face discussion and comprehensive community education on important public health issues.

### ***7.3 Reflections on the research process and methodology***

At the end of Chapter 4, I reflected on the methodology I used as a developmental process. It is worthwhile reporting what I have learned about researching illustrations.

Firstly, visual interpretation, in this case of deceptively ‘simple’ still images, is an extremely complex area of exploration. At the outset, I did not understand enough about how meaning is made by producers and viewers of images. I had to see the communication (and its breakdown) in action, and analyse it to really understand the relevance of the theory. This led me to the semiotic analyses of the illustrations.

The construction and development of the different research instruments was a much larger part of the research than I had anticipated. I see this challenge in a positive light, because it enriched the study and my research experience.

I learned the hard way just how much consideration must be given to the illustrations to be used or assessed in such research. I approached the issue far too broadly, and did not spend enough time considering each illustration and set of illustrations in relation to each other. In retrospect, I rushed through the process too quickly, wanting to get on, and chose too many illustrations with perhaps not enough thought put into the specific reasons for including each one. For example, I have mentioned instances where the content or message of the illustrations grouped together in sets turned out not to be the same as I had initially thought. There were also several cases where the participants did not focus on the aspects of certain illustrations that I was most interested in exploring because there were other distracting elements I had not considered before. This is also an instance where being the illustrator *and* the researcher may have clouded my vision, and so I lacked focus with some of my early decisions over which illustrations (and how many) to include in the study.

In the cases where my consultations with others working in the field of health and HIV/AIDS led to me selecting and creating certain depictions for the research, I have learned that this in no way guarantees that illustrations will be more accessible to an intended audience. For example, Illustration 1C was based on a concept used in clinics by a medical doctor, to support conversations with patients about their treatment. To my mind, this imbued the illustration with something like ecological validity, yet it failed to communicate effectively as a stand-alone illustration removed from a face-to-face communicative setting.

Yet illustrators are often commissioned by professionals and subject specialists who determine messages and suggest how they should be depicted. The theoretical knowledge I have gained from this study should mean that the original sources from which illustrations are developed are also interpretations, and not necessarily reliable indicators of the best way to communicate information. My consultation of the HIV/AIDS support group for the most acceptable/effective way to depict HIV was similarly misleading (see Illustration 2B), when the participants' interpretations are explored. Therefore, while referring to content experts as sources of information and guidance is good practice to get basic facts right, these people are not the audience, even if they work with members of the intended audience. Their informed, experienced positions also mean their own rich interpretations may prevent them from realising what the audience does not know and may not be able to understand visually.

Because I did not exclude and/or refine some of the illustrations, the participants saw and responded to so many pictures in a short time, and mostly gave short responses to each picture. Many of the illustrations were very similar, by design, but this may have bewildered some of the participants, as to why they should respond more than once to much the same picture. It is possible that, apart from being told at the start of the interviews that the illustrations were about health, people got used to looking at pictures about sickness and started to look for similar things to comment on as the interview progressed, shaping their responses to an extent.

Not only did the number of illustrations affect what was possible during the interviews, it had implications for the data analysis, because far more time than was originally anticipated was spent thinking about and analysing the illustrations themselves, before, during and after the analysis of the participants' responses and interpretations. I discovered along the way that I would have to understand and explain the original, sometimes unconscious rationale behind the intended interpretations of the illustrations, in order to analyse and evaluate participants' interpretations. The deeper analysis of the illustrations expanded the research task beyond initial expectations.

I would have liked to know a little more about the participants and to be able to clarify some of their responses more. Had there been fewer illustrations in the interview schedule, more time might have been spent gathering background information and discussing the illustrations in greater depth. At the outset, I liked to think that this study would allow me to learn more about the "implied" (Iser, 1974) or "model" (Eco, 1979, in Kress and van Leeuwen, 1996: 120) viewers of the illustrations, because the interviews would allow producers and viewers (represented/interactive participants) the rare opportunity to meet. I even envisaged that through the interviews I would for a moment close or occupy the gap between the contexts of production and reception identified by Kress and van Leeuwen (2006: 119).

This was a naïve expectation, of course. The interviews were not a forum for exchanging information, but rather for me to extract the participants' interpretations. I, the producer, did not communicate much to the participants at all. Meeting the participants did furnish me with new understandings of the people I had classified as 'low-literate' adults, for example, many of them were younger than I expected, and it was humbling to be faced with the reality of what it means to be denied basic education. However, I did not really discover enough new or real life details about the participants to change my pre-existing notion of the implied/model viewers for whom I illustrate materials. This is not surprising, or to be considered a failure, because the interviews were designed to gain interpretations of illustrations, rather than learning more directly about

participants' broader attitudes and life experiences. It is, however, useful to reflect on my initial interpretation of some of the more socially orientated theoretical constructs and the extent to which these may be translated into practice.

Other methodological issues involve how the illustrations were presented to the participants. As explained, most of the sets of illustrations were deliberately mixed up and shown to the participants in a seemingly random order. I am not sure if this really worked to avoid participants building up interpretations based on other illustrations they had seen during the interview – the possible cumulative effect I was trying to avoid. I think perhaps it worked for some participants but not for others because some clearly did refer back to illustrations they had seen previously earlier in their interviews, while others insisted they had not seen similar illustrations when in fact they had already been shown an almost identical illustration.

The exception was Set 6, where different styles were compared side by side at the same time. Of the two different approaches, the latter method of direct comparison was the most satisfying in research terms, because the different responses seemed clearer and the data easier to handle and analyse. This is congruent with previous studies which recommend comparisons between different versions of illustrations as an effective research method (See Lyster, 1995: 40; PATH/FHI, 2002: 42; Sejake, 1993: 11). Very direct comparisons may not always be appropriate or desirable, depending on what one wants to discover about particular illustrations, but it is very suitable for assessing the comprehensibility and appeal of different styles. My experience suggests that this method may also be worth adapting for slightly different purposes.

At different times during this research, I found myself wondering whether *anyone* could interpret certain of the illustrations as intended without text explanations to guide them. I would like to explore the various issues attached to how one might research different audiences' interpretations in more authentic reading/viewing contexts. It would certainly have been interesting to conduct the same interviews with a control group of highly literate or well-educated people, to be able to compare their responses with those of the participants in this study. The presence of Busisiwe in this study, with more years of schooling than other participants, gave some indication that such a comparison would yield different results. Others have at various times conducted similar research using control groups with different levels of education, including the famous Hudson test (in Messaris, 1994: 64), and more recent studies, such as Carstens (2006), both discussed in Chapter 2. Thus again, comparisons of different sorts are of great value.

Being involved with every aspect of this research has been a valuable process, but also difficult because there was no area of neutrality. As an illustrator, I occupied a unique position with insight into the creative process. Fortunately I was not worried or upset by any negative responses to my illustrations, and by negative, I include misinterpretations. I entered into this process in order to discover the strengths and limitations of my practice. However, I was critical of my own illustrations and so every stage had its difficulties, especially the data analysis. For example, when participants overwhelmingly chose the style of illustration 6D in preference over 6C or 6B (crosshatched style and ink wash) I could not help but wonder if it was because I hadn't taken enough time over these two illustrations – maybe they were just badly done? It was a comfort to notice that in most of the other studies I referred to, the execution of the illustrations did not seem to be much better than mine, and were quite often much worse, in my opinion. I imagine that this type of research might be slightly less complicated, with perhaps not quite so many searching questions to ask oneself as the researcher, if one is not both the illustrator and the researcher. Working as part of a team might also have helped, for some balancing views and support, although my supervisor filled that role when necessary.

I ended Chapter 3 with a reflection on what I called a developmental methodology – how I experienced the research process as cyclical, where the data I collected and analysed allowed me to return to the literature with new insight. Through this process I discovered which theories were most relevant for this study along the way. Although I began the study with the post-structuralism of the New Literacy Studies (NLS) and social semiotics in mind, formal semiotic concepts seemed the most useful tools with which to analyse and explain my findings. I found a way to blend very basic semiotic analysis with the interview methodology in a way that worked for my purposes. I also came up with ways to present the results of my analysis in tables – the tables that classified the participants' interpretations of the illustrations, as well as the simpler tables that detailed my own partial analysis of the intended meanings of the illustrations in terms of denotation and connotations and Peirce's sign types. Again, I learned after the fact that there is not one correct way of reporting the results of semiotic analyses but that researchers often make use of tables and/or discussion (Penn, 2000: 239). Thus, I can only emphasise again, that the process of 'inventing' ways to handle the data and finding new meaning in the theory based on practical experience resulted in a developmental and satisfying research methodology.

### **The value of semiotic approaches**

Part of considering the elements of meaning, is the awareness that creating an illustration is an act of interpretation. The moment one tries to communicate or explain anything using signs it

becomes a representation couched in one's own understanding. It was only during the course of this research that I became aware that many of the meanings I tried to communicate in my illustrations were based on unconscious decisions about what to depict and how to do it. Before, I did not have a detailed, critical awareness of how signs work to create meaning, and I did not analyse for myself in great depth exactly how the "signifiers" I used related to the "signifieds" (the intended message), or to each other, to create the meaning of the illustration as I understood it (Fiske, 1990: 51).

Engaging with theory made me aware of the sign types and layers of meaning which I had been using automatically, relying on the (again) unconscious assumption that viewers would share many of my visual meaning-making strategies. This is important because although this discovery might seem obvious, I believe from my own experience that many illustrators and artists do not understand the extent to which they assume the interpretive processes and pictorial literacy competencies of their diverse audiences. This may also apply to many writers and materials developers.

Conducting in-depth semiotic analyses of 16 of the illustrations used in the research deepened my understanding of the theoretical concepts, the illustrating process, and how these related to the interview data. Such a method has the potential to guide the design and execution of illustrations for print materials. It may be used not only to understand illustrations, but also how they relate to the text content and the presentation of publications as a whole.

## **7.4 Recommendations**

What current guidelines can be offered for illustrators and those responsible for planning and developing educational materials to follow? In general, as much attention (or more) should be given to what illustrations can and cannot do, as is paid to notions of what intended audiences are capable of interpreting. The following guidelines are really a list of 'issues to be aware of' and to assess according to the context of the work at hand. Many 'traditional' guidelines for illustrating for audiences with low levels of literacy remain valuable, alongside new insights.

### **The communicative potential of illustrations**

Illustrations should not be expected to communicate specific messages in the absence of other text, verbal instruction or discussion. Despite this limitation they remain valuable to enhance the accessibility and appeal of print materials, and should be included especially if the intended audience is low literate, or needs encouragement to read.

When illustrating educational materials for audiences with low levels of literacy:

- Research the audience and their social contexts, for example, their surroundings, living conditions and dress, in order to depict objects and situations that are more likely to be recognisable.
- Be aware that many people with low literacy are likely to interpret depictions very literally, and plan illustrations accordingly. This is even more likely in rural areas.
- Choose ‘simple’ messages or key concepts to illustrate. When there is a complex message or narrative, break down the information into several small pictures or steps, with careful consideration of how to show that the parts are linked. The section below on narrative progressions elaborates on this.
- Discuss or pre-test examples of illustrations (or other materials with the same content or purposes) with members of the intended audience, to find out specific information on what sort of depiction and approaches to content work best, and what to avoid.
- Be aware of what the people involved in pretesting already know about the content – for example, if the person is a community health worker he or she may have a more developed schema to help interpret illustrations than an ordinary community member.
- Conduct semiotic analyses of the planned illustrations to assess the complexity of the sign-object relationships, and decide whether these relationships are likely to be understood by the intended audience. It may be necessary to review what aspects of the message can be expressed visually at all, and re-conceptualise.
- Consciously explore ways to constrain how the audience is likely to interpret the illustrations, to motivate the intended meaning. This includes examining the sign combinations within illustrations, how all the illustrations relate to each other to build a message, and how the audience may be guided make these links.

### **Illustrating styles and related issues**

To develop literacy skills, people should be exposed to a wide variety of reading material, and the same should apply to the development of the skills to interpret visuals, including illustrations. Environmental exposure to diverse visual representations is important. This may include moving away from simple, ‘development’ style illustrations to be more ‘creative’ and choose styles that seem more interesting and appealing. However, the findings of this study suggest that this approach is not wise when the primary aims of the illustrations are to educate and communicate

important information. In this study, participants preferred clarity to ‘artistic’ visual interest. Because style was shown to influence the meaning of the illustration for these viewers, changing a situation from positive to negative, the following recommendations apply:

- Choose illustrating styles with simple outlines, filled with limited flat tones or colours to differentiate between objects or areas of the illustration.
- Avoid highly abstract, or stylised illustrating styles, which are likely to make objects harder to recognise and cause misinterpretations. The same applies to highly expressive/individualistic artistic styles, and tone suggested by cross-hatching, for example.
- Include background detail when you need to provide a general context for the message, such as to set a scene.
- Background details should be limited or excluded when the focus of the illustration is on a specific object or action.
- To follow on from the above two points, the combination of a scene-setting illustration, with other less complex individual depictions of particularly important details or actions, without background, presents a good strategy for conveying different levels/types of related information.
- Be wary of using facial expressions of depicted figures to convey physical states such as pain (for example, chest pain when coughing). Facial expressions may not be noticed at all, or may convey emotions such as fear or sorrow rather than pain.
- Be aware that expression lines on faces may suggest other things, such as old age (wrinkles), or scars, rather than emotions.
- Use symbols with caution, such as arrows and cross signs, for these are still not universally well understood, and create interpretation difficulties, especially when combined with more iconic, literal signs. The same often applies to graphical devices (for example lines to show movement and direction, or actions like coughing or shouting.)
- Subtle cues may go unnoticed, for example, a small moon through a window in the background did not succeed in suggesting night. If such a detail is an important part of the information to be communicated, try to find a more obvious way to show it.

## **Groups of pictures, frames and narrative progressions**

While a series of frames showing different scenes, stages, or aspects of the same situation are often misinterpreted, trying to fit a narrative progression or complex message/storyline into one illustration is potentially even more problematic. Therefore, rather use a series of comic style frames to show a storyline or progression over time with the awareness that the concept may not be well understood by viewers who are not used to this genre.

- Be clear whether the frames show a narrative progression, or different aspects of the same situation. Viewers may not realise the difference, and might not relate the different frames to one overall message.
- Be aware that viewers with low levels of literacy may not ‘read’ the frames in the conventional order of left-to-right and from the top to the bottom of the page.
- Similarly be aware that such viewers may not notice if the same character appears in different frames. While this can be emphasized by giving a character a noticeable pattern on their clothes to conserve his or her character in different frames, this detail may not be noticed as important.
- Be aware of the action or time which is implied but not actually shown, in the conceptual ‘gap’ between the frames. For example, is there important information which the viewer might not infer but needs to know in order to interpret what is depicted in the frames as intended? It may be that more frames are needed to clarify the illustration.

## **The relationship between illustrations and text**

It has been convincingly reinforced that illustrations require anchorage to limit the range of interpretations open to viewers. This anchorage is most often a caption – verbal text – that could be extremely simple, depending of course on the illustration and its purpose.

Thus even in contexts where many viewers will not be able read the text, consider the role of verbal captions to fix meaning. The language level and suitability of the text should not be neglected, and the relationship of the words to the illustrations in how the message content is carried remains important. The presence of text, even in small amounts, at least allows for situations where there is a person who can read and may then discuss the illustrations with others.

Thus, ‘anchorage’ might also consist of verbal discussion, in a class, a workshop or clinic consultation, where a stand-alone illustration or illustrated materials are used as visual aids. Such activities should be built into educational efforts with audiences who have limited education and/or low levels of literacy.

### **Evaluation of illustrations at different stages**

It is important to be aware of how the intended meaning of an illustration has been created or ‘interpreted’ by the illustrator. It may be helpful to conduct a semiotic analysis of illustrations before they are even pre-tested with members of the intended audience. Examining the elements of meaning in the sign(s) can reveal the implicit assumptions in the depictions. Then it could be possible to examine and predict *to a certain extent* whether the intended meanings are likely to match the audience perceptions. This process may also draw attention to the extent to which it is possible to convey the information in visual terms.

Such an analysis may also provide a useful measure with which to compare the responses given by audience representatives during pre-testing. In other words, being aware of the layers of meaning and sign types/relationships in an illustration may enable one to pick up more easily if the intended audience is likely to understand the connotation as intended. The evaluation of draft illustrations (and indeed text and layout) by unbiased members of a target audience may not always be feasible but wherever possible it should be built into materials development processes, at a stage when it is still possible to make changes.

Post-publication and dissemination research/evaluations should include the critical evaluation of illustrations as well as text.

### **7.5 Further research**

This study could be repeated and improved by using far fewer illustrations, and involving more in-depth discussion during the interview phase. It might be limited to materials on one health issue, and/or could be linked it to a particular materials development project, perhaps utilising elements of action research methodology.

The findings of this study suggest that it would be valuable to further explore the following issues:

- The differences between rural and urban low-literate audiences, with more attention paid to different age groups, life experiences, and amounts of prior exposure to other visual media.
- Comparisons between more literate and low-literate audience interpretations of illustrations.
- Illustrations in their original materials, with text and layout, to learn more about how/whether a low-literate audience processes illustrations and text together.
- Semiotic analyses of illustrations in other health education materials.
- Colour illustrations and/or photographs, and whether photographs are preferable as illustrations in educational contexts.
- How illustrated materials are used in educational situations with rural adults and other communities where low-literacy is prevalent, for example the use of posters as conversation starters in participatory education methodologies and what impact this has.
- Comparisons between different types of media, to assess low-literate audiences' preferences and ease of comprehension, for example comparing the same information transmitted by cell-phone or as print media. These are not either-or media, but often cellular technology is promoted uncritically as the answer to communication across diverse geographic terrains, and is treated as something which could replace other media.
- The extent to which participatory processes, such as getting members of the audience to draw, can provide insights that may be of use to illustrators to understand and develop better ways to create more accessible illustrations.

## ***7.6 In conclusion***

The question of how to produce effective printed materials for audiences who cannot read continues to present a fascinating conundrum. Illustrations are supposed to be able to help make the information clearer and more accessible to those without the literacy skills to understand the written text. However, visual communication is highly complex. This study has shown that despite the apparently increasing dominance of visual media in South African society, it should not be assumed that people are now more able to interpret illustrations than in previous decades, and especially not without verbal explanations.

Although people with low literacy levels are unlikely to have had access to a wide range of visual materials and illustrated texts, this is not the only factor to consider. Such exposure must play a role in developing individuals' abilities to interpret a wide range of visuals, but visual semiotics places as much emphasis on the structure and type of signs as it does on the viewer.

It has been shown that the simplest and most literal of images are ones that are likely to communicate their messages most successfully – and there is a greater chance of success if the audience already knows quite a lot about the content. If people are mostly able to correctly interpret illustrations of things that they already know, then one must ask what can be achieved by illustrations for people who cannot read.

Nevertheless, illustrations are still often expected to be able to communicate new and sometimes complex information to audiences deemed to be lacking in information and education. Often the whole purpose of developing an illustrated educational text is to try and explain difficult concepts in 'simple' and appealing ways. By their nature, the content of such educational materials is not easy to understand or explain in simple language. Yet it follows that the more complex the message, the more complex the illustration itself will be. The simpler the appearance of such an illustration, the greater chance that there are great conceptual leaps or inferences demanded of the viewer in order to correctly interpret the intended meaning. Without subjecting such illustrations to careful analysis, these complexities tend to remain hidden. In materials whose content needs illustrations the most, illustrations run the greatest risk of creating confusion, or remaining of decorative interest only. While they may arouse curiosity and encourage a struggling reader to grapple with the written words to understand the message better, the conundrum remains. How to explain a text through pictures, if not being able to understand the text anchorage makes a person less likely to be able to interpret the pictures?

Thus, it is critical to recognise that while visual communication in general may seem to have enormous potential, in educational contexts where meanings must be fixed and not left wide open to interpretation, captions or other forms of explanation are always necessary. Such illustrations cannot stand in isolation.

In summary, the communicative potential of educational illustrations can be maximised by following recent research-based guidelines, along with audience consultation and pre-testing, and the semiotic analysis of draft illustrations. Visual communication efforts using illustrations have the greatest potential of success where other channels of communication and media are available to repeat and supplement the intended messages. Thus, the audience should be able to

refer to illustrations to remind themselves of instructions they have been told at the clinic, or to recall information they have discussed in a workshop, or to show family members what they mean, and to understand things they have seen and experienced better. Such comprehensive communication strategies are the ideal.

It is practical and desirable to continue to use illustrations, but with increased awareness that they will not always be understood as intended. Sometimes measures need to be taken to limit misinterpretations. While one may conclude that illustrations deserve the warning “use with caution” in many circumstances, the other roles of illustrations should not be forgotten. There remains great value in attracting a beginner reader’s attention, appealing to a reluctant reader’s curiosity, and making a page of text appear less intimidatingly dense, or more interesting. Good quality illustrations have the capacity to do these things and more.

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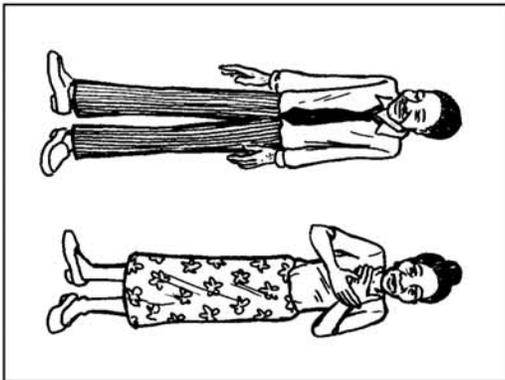
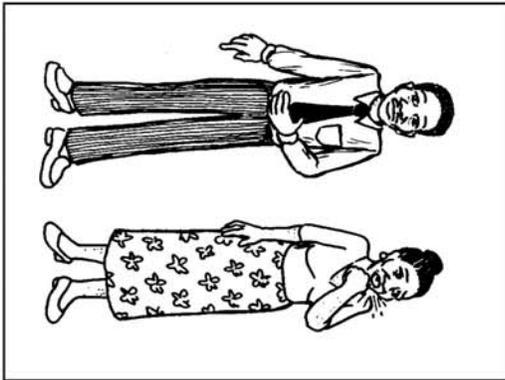
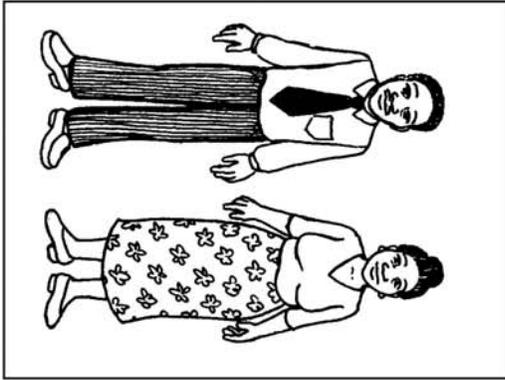
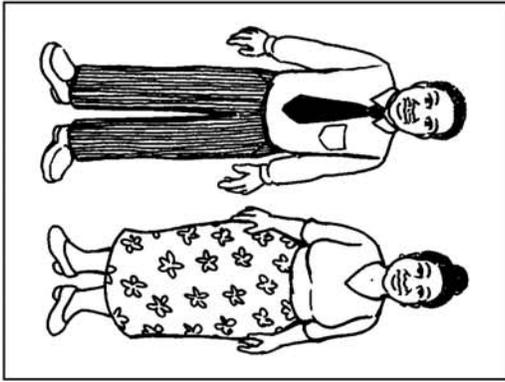
## Appendices

### *Appendix 1: The illustrations as shown to the participants*

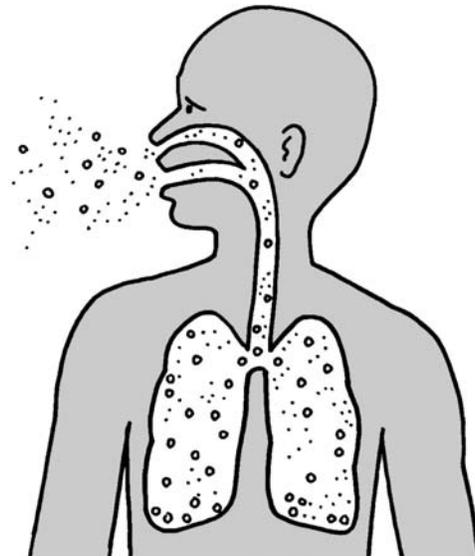
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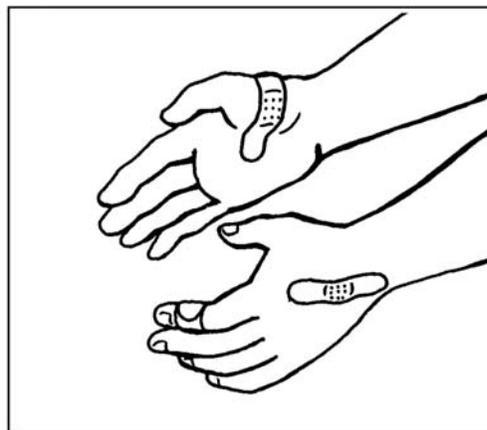
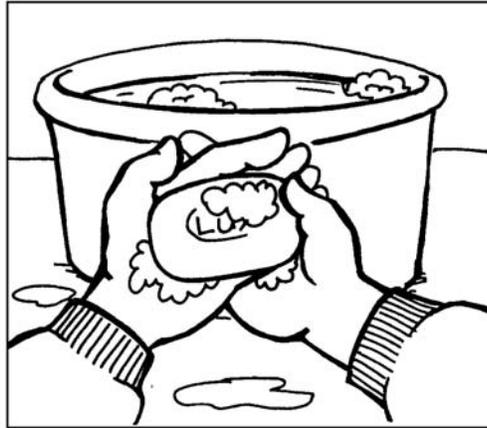
Picture A



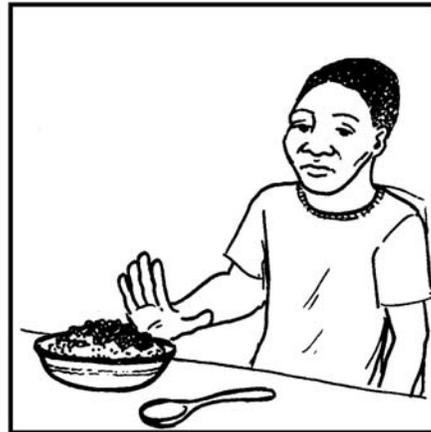


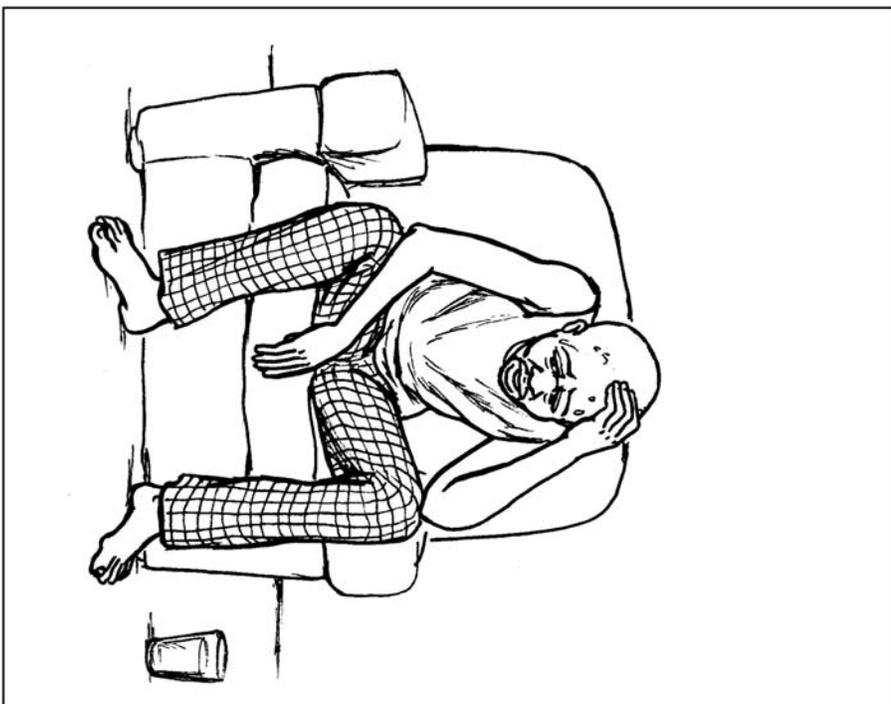
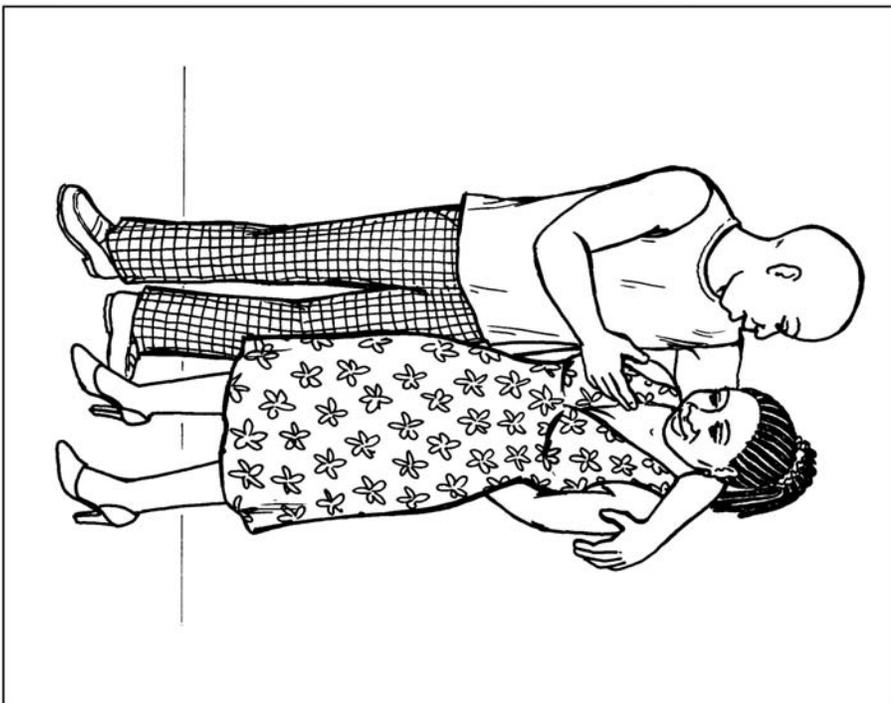




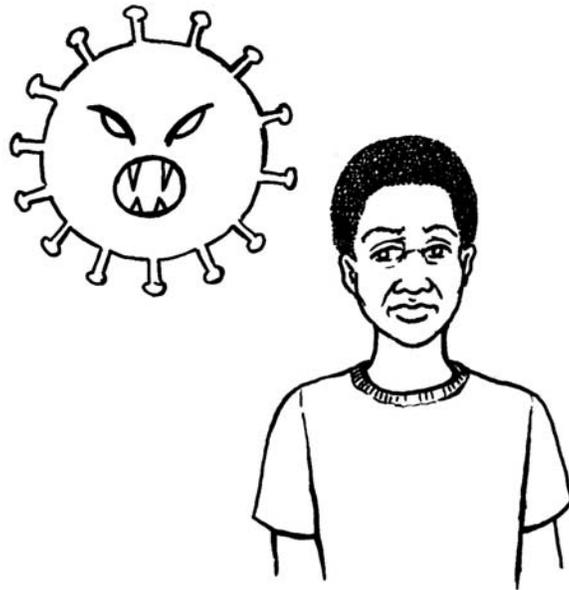






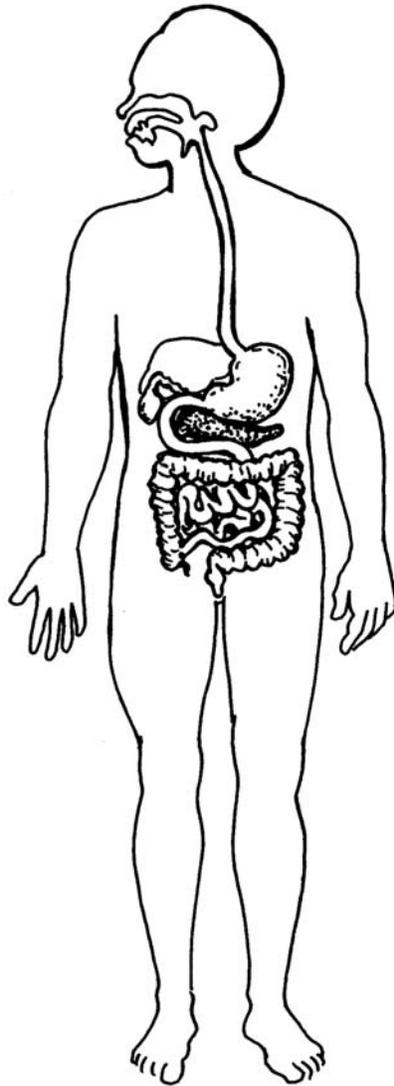


Picture B



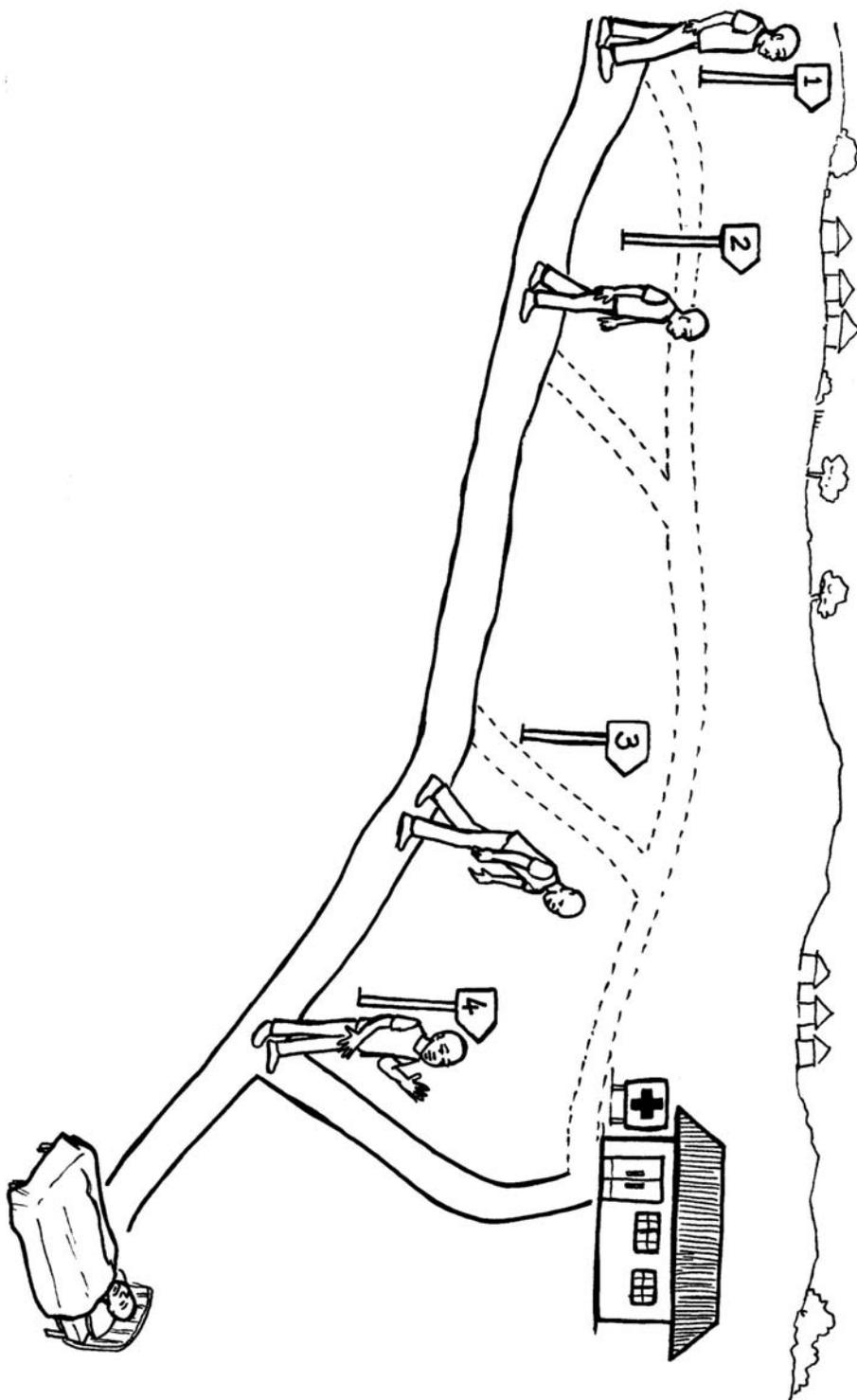






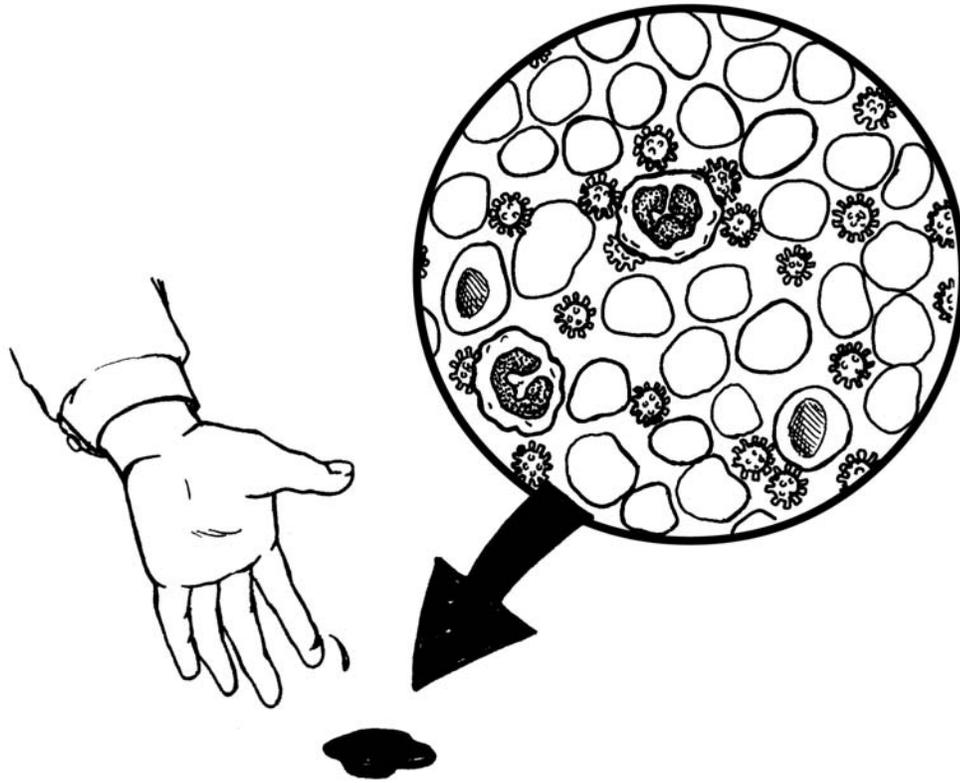




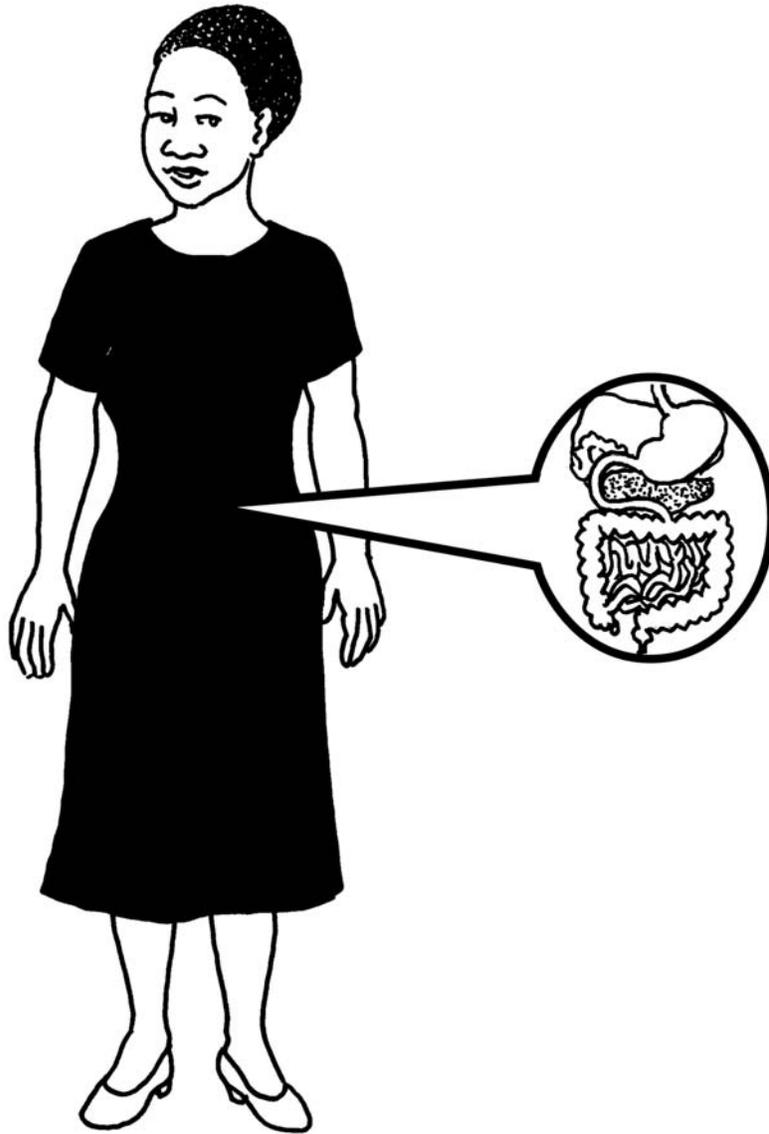


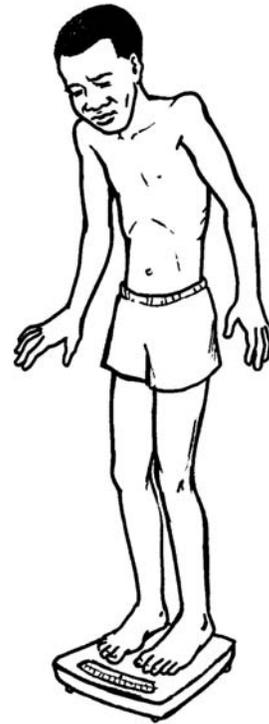
Picture C

























## Appendix 2: Sample response sheet

### Response sheet for individual interviews:

Participant number: |

\*Yes/No: Has the intended meaning been correctly interpreted?

Pic No.	Yes*	No*	Interpretation/comments
S4A		✓	IDENTIFIED PEOPLE described clothes. Hand in front of mouth. - eating something. Something in her hand, not sure what.
1A		✓	<del>EE</del> started left pic. Describe clothes + hair. Noticed hand pos. not sure what. Prompted + notice other pics, follow same routine.
2A		✓	Describe woman. clothes. Blackboard. She's teaching.
S3A		✓	I see a person. (holds paper) Something on outside of man's chest. Given paper.
3A		✓	kardla zikangrila. - accepting something. " holding something turns page around. Small trolley with bath inside
4A		✓	Umuntu. ofake ... emlanyeni. pipe in his mouth. (PROMPTED - Intestines): Inyoka.
5A		✓	MID R Pic first: cooking. TOP R: Holding chest - dark print shirt striped. TOP L: Holding broom, wearing black hat with spots. MID L: Vest, holding belt on pants. PROMPT - he looks worried.
1B		✓	BOTT. L: Sitting down, hat making a call. Man + woman hugging. She has braids. Describes clothes, high heels, tuckies. Man sitting on trolley barefooted, holding his head. (PROMPT: He's sick)
2B			Umama. Sleeveless dress, no arms. Body is incomplete. Create: something that looks like a watch.

Glass = potting

S3B		✓	Umama. Only top part of body. QUERY: She was injured - incomplete body. Breathing.
3B		✓	Drawing: Hands Drawing.
4B		✓	Person, arms at sides. Intestines, the heart.
S4B		✓	Umama, clothes. Holding chest - confused. Mama nobaba, ingene background. + others. Nobaba, - Ubumbe eulonyeni. - exclamation.
5B		✓	<del>Hand</del> Talking, shirt. Holding mouth. His parts, black lines - snips. Something on his mouth. like oxygen pipe in hospitals.
Pic No.	Yes*	No*	Interpretation/comments
1C		✓	A house. A train. People on the train. Background houses. Not know numbers.
S3C		✓	Person with mouth wide open. Breathing. He looks troubled. Crying. (PROMPT. Something drawn for him)
2C		✓	Hand. (turned picture) Decorated circle, other circles inside. Hand decorating the circle.
3C		✓	<del>Hand</del> Woman. Flip flops, skirt lines on sides. Drawing on the arm, hand position.
4C			Woman, black dress + hat. Something going to her tummy, straight stick w. ring, rice drawing inside

- Holding a cloth, drawings around him, on the face.
- Incomplete drawing, something in his hand act of his mouth.

5C		✓	1st - mid R. - starts, on a saddle. Top Left. Not sure what he's sitting on, drawing across him, + arde Hand on his mouth. put something in his mouth Sitting on leg. <del>some</del> fork. hand on his head. wearing new
3D		✓	Flip flops, someone sleeping on bed, giving sleeping person something. Bucket. chair/ (Pity) something drawn, not sure. Inorpha no-bath. She's nursing her.
Pic No.	Yes*	No*	Interpretation/comments
S2B D. M. P.	✓		Describe clothes. Sweeping, white t-shirts. that. UBaba to. clothes. Tya le. - man's leg. Wamas, arm act, + phone. + child. Horses. (tank = horse).

### Style Set 1

These pictures are all of the same thing. What do these pictures show? 1 first line.  
Mamas, child, 2 child.

Doctor. (PICC) treating patient (cross watch).

NOT THE SAME PIC.

Which of the pictures do you like the best? A B (C) D #

Why did you choose that one?

I can see its a doctor, with child.

B - a doctor but not a child. Older child.

A dr + child.

D. - Remarks different clothes.

S2A			Haise, tree, ikati? Inkano. Babo to, with dog. Umama pointing holding a thing, followed by child, - showing we are going there. - Umama <del>to</del> hat, broom + wearing taddies
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## Appendix 3: Ethical clearance certificate



16 November 2012

Ms Katherine Arbuckle (892204109)  
School of Education  
Edgewood Campus

Dear Ms Arbuckle

Protocol Reference Number: HSS/1224/012D  
Project Title: A study of pictorial interpretation of health education illustrations by adults with low literacy levels

### EXPEDITED APPROVAL

I wish to inform you that your application has been granted Full Approval through an expedited review process:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....  
Professor Steven Collings (Chair)  
/ms

cc Supervisor: Dr Elda Lyster  
cc Academic Leader: Dr MN Davids  
cc School Admin: Mrs L Naicker

Professor S Collings (Chair)  
Humanities & Social Sc Research Ethics Committee  
Westville Campus, Govan Mbeki Building  
Postal Address: Private Bag X54001, Durban, 4000, South Africa  
Telephone: +27 (0)31 260 3587/8350 Facsimile: +27 (0)31 260 4609 Email: ximbap@ukzn.ac.za / snymanm@ukzn.ac.za  
Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

INSPIRING GREATNESS



## **Appendix 4: Letter of informed consent**

This is a project to find out how people look at pictures. I want to know which pictures are the easiest to understand, and which pictures are more difficult. It is about pictures in health education materials, like posters and pamphlets from the clinic. The aim of this project is to find out ways to make pictures easy to understand.

The people working on this project are

- Kathy Arbuckle, from the Centre for Adult Education, University of KwaZulu-Natal (PMB Campus) telephone 033 260 5071 or 072 125 8370
- Ruth Modipa, research assistant, telephone 033 260 6454 or 073 264 5513
- For more information you may also contact Elda Lyster on 031 - 260 2567.

We are asking you to take part in this study because you are an adult who attends literacy classes at ABET Level 1 isiZulu. We will be talking to many others who also attend literacy classes at ABET Level 1 isiZulu.

We will show you some pictures and ask you to tell us what you see. We will ask you to say what you think the pictures are about, or what they show. This is not a test, and there are no right and wrong answers.

It should take about an hour to look at and talk about all the pictures. We will write down what you say, so that we can remember what you tell us. It is very important that you say what you really think. We will use what we learn from you to understand how people look at pictures. The things we write down will be kept safe and we won't show them to others. We will write a research report, but it will not have your name in it, so nobody will know what you said about the pictures.

You do not have to be part of this study if you do not want to. If you decide to be part of the study, but decide later not to do it, you are free to leave at any time. You may have time to think about this and discuss it with others (an educator, fellow learners, family or co-workers) before you decide whether to take part or not.

### **Declaration of Informed Consent**

I.....(full names of participant)  
understand what this document says, and I understand what this research project is about, and I agree to be part of the research project by answering questions in an interview.

I understand that I am free to withdraw from the project at any time, should I choose to do so.

SIGNATURE OF PARTICIPANT

DATE

.....

Lena i-phrojekthi eyenzelwe ukubuka indlela abantu ababuka ngayo izithombe. Ngale phrojekthi ngifuna ukwazi ukuthi yiziphi izithombe eziqondakala kalula neziqondakala kanzima. Lena i-phrojekthi ephathelene nezithombe ezisetshenziswa kuzinsiza kufunda zezempilo. Inhloso yalephrojekthi ukuthola izindlela zokwenza lezizithomba ziqondakale kalula.

- Abantu abazobe besebenza kulephrojekthi, abakwa Centre for Adult Education University of KwaZulu-Natal (PMB Campus) ucingo 033 260 5071 noma 072 125 8370
- Ruth Modipa, umsizi mcwaningi, ucingo 033 260 6454 noma 073 264 5513
- Eminye imininigwane iyatholakala ngokuxhumana no- Elda Lyster ucingo 031 - 260 2567.

Sikucela ukuthi ubeyinxenye yalolucwaningo ngoba ungumfundi omfundi ofunda isiZulu, okuleveli 1 kwaABET. Sizobe sixoxisana neningi labanye abantu abafunda isiZulu kwimfundo yabadala kwa ABET leveli 1.

Sizokubonisa izithombe sikucele usitshela ukuthi ubonani. Sizokucela ukuthi usitshela ukuthi ucabanga ukuthi isithombe sixoxa yiphi indaba, noma sikubonisani. Lesi akusona isivivinyo, ngakho ayikho impendulo elungile noma engalungile. Sizokwamukela impendulo osinika yona njengoba injalo.

Kuzothatha ihora ukubuka nokuxoxisana ngezithombe. Sizobhala okushoyo ukuze sikhumbule ositshela khona. Kubaluleke ngempela ukuthi usitshela okucabayo. Sizosebenzisa esikuthole kuwena ukuqonda indlela abantu ababuka ngayo izithombe. Izinto esizibhala phansi zizogcinwa ziphephile kanti ngeke sizidlulisele kwabanye. Sizobhala umbiko ngemiphumela yalolucwaningo, kodwa igama lakho alizubhalwa kuwona, ngalendlela akekho ozokwazi okushilo ngezithombe.

Awuphoqelekile ukuba yinxenye yalolucwango. Uma uthatha isinqumo sokuba yinxenye yalolucwaningo, kodwa ngemuva kwesikhashana uguqule umqondo, ukhululekile ukuhoxisa. Unaso nesikhathi sokucabangisisa nokuxoxisana nabanye (uthisha, ofunda nabo, umndeni noma osebenza nabo) ngaphambi kokuthatha isinqumo sokuthi uyathanda yini ukuba yinxenye yalolucwaningo noma cha.

### **Ukufunga uvume ukuthi wazisiwe**

Mina.....(amagama aphelele omngeni)  
Ngiqonda okushiwo yincwadi, futhi ngiqonda ukuthi ucwaningo luphathelene nani, futhi ngiyavuma ukuba inxenye yalolucwaningo ngokuphendula imibuzo kwintavu.

Ngiyaqonda ukuthi ngikhululekile ukuhoxa kulephrojekthi noma nini uma ngikhetha ukwenze njalo.

ISIGINESHA YOHLANGANYELI

USUKU

.....