CHAPTER 2

ICONICITY, CULTURE AND THE PERCEPTION OF PICTORIAL MATERIAL

2.1 Introduction

The aim of this chapter is to provide an overview of the relevant literature concerning iconicity. The influence of culture on the perception of symbols is discussed. Previous cross-cultural studies in the field of AAC are considered in order to highlight the need for the present study.

2.2 Iconicity of symbols

Iconicity refers to the visual relationship between a symbol and its referent (Fuller & Lloyd, 1991; Blischak et al., 1997). Fuller and Lloyd (1991) present an overview of the history of this term. According to them, iconicity was first described in 1965, and Bruner (1966) used it to describe a stage in the development of symbolic representation by children. Iconicity received some attention in the seventies (Bellugi & Klima, 1976; Hoemann, 1975). It seems that the hypothesis suggested by Fristoe and Lloyd (1979), that the iconicity of symbols might facilitate symbol learning, sparked interest in this variable. Numerous studies investigated iconicity in the eighties, many of which focused on unaided symbol sets/systems (Lloyd & Fuller, 1990). Some studies did however involve aided symbol sets/systems. A summary of the most prominent studies investigating the transparency or translucency of aided symbol sets/systems is presented in Table 1.

Inspection of Table 1 makes it clear that the majority of studies aiming to determine the transparency or translucency of a symbol set/system involved Blissymbols. Only three studies included PCS (Mizuko, 1987; Mirenda & Locke, 1989; Bloomberg, Karlan & Lloyd, 1990).

Table 1 also highlights that transparency studies typically employ one of two methodologies. In some studies on aided symbols, participants are shown a symbol and asked to guess its meaning (Luftig & Bersani, 1985). This creates an open-choice task where participants are not restricted in their responses. Other studies require participants to match a spoken label with a symbol from a closed set of alternatives (Mirenda & Locke, 1989; Mizuko, 1987; Musselwhite & Ruscello, 1984). The set of alternatives typically includes the target symbol and a small number of foils. For every trial the foils are varied, and foils are rarely included as

Table 1: A comparison of prominent studies on iconicity of aided symbol sets/systems performed after 1979

Title, authors, year	Objectives	Symbols used	Participants	Methodology	Results	Recommendations
Transparency of three communication symbol systems. **Musselwhite & Ruscello, (1984)**	· To determine the transparency of three symbol sets/systems for nonhandicapped viewers. · To investigate viewers' impressions of the symbol sets/systems.	Bliss Picsyms Rebus	· 48 typically developing participants in four age groups (y:m): · I: 3:0-3:11 · II: 6:0-6:11 · III: 9:0-9:11 · IV: 18:0-21:11	· Test booklet contained 40 target items for each set/system: · 30 word, 5 phrase and 5 sentence items · All items presented with 3 foils: one within grammatical category, two random. · Label was presented, P required to match to symbol.	· Blissymbols were significantly less transparent than Picsyms and Rebus. · All participants but one felt Blissymbols were the hardest. · Age significantly influenced performance on this task. · Gender did not influence performance on this task.	· A number of variables should be considered in selection of symbol set/system. · Transparency is especially important when AAC user will interact with nonreaders. · The transparency of these sets/systems should be studied individually including more symbols.
An initial investigation of translucency, transparency and component complexity of Blissymbolics. **Luftig & Bersani, (1985)**	· To measure transparency and translucency of a large sample of Blissymbols. · To investigate the effect of component complexity on transparency and translucency.	Bliss	95 naïve undergraduate college students	· Transparency: video consisting of 200 Blissymbols. P required to guess the meaning of each. · Translucency: video consisting of the same 200 Blissymbols, presented with written and spoken label. P required to rate visual similarity on scale of 1 to 7.	· Translucency and transparency values were determined. · Transparency values were surprisingly low. · No difference between word classes. · Translucency and transparency values were negatively influenced by number of components.	· Verbs were not more transparent than nouns, possibly because action indicator is opaque. · Abstraction is often indicated by adding components, which may explain why higher complexity leads to lower transparency.
Transparency and ease of learning of symbols represented by Blissymbols, PCS and Picsyms. **Mizuko, (1987)**	· To compare transparency and ease of learning of symbols across three different symbol sets/systems. · To compare transparency and learning across three different word categories (nouns, verbs and descriptors).	Bliss PCS Picsyms	36 typically developing preschoolers between 29 and 44 months	· 45 target symbols, each with three within word category foils. · Transparency: P required to match visual symbol to spoken label. · Learning: same as above, repeated three times. If P failed to match correct symbol to label, R corrected.	· PCS and Picsyms more transparent and easier to learn than Blissymbols, regardless of word category. · Nouns: similar scores for Picsyms and PCS, verbs and descriptors: PCS more transparent. · More PCS symbols were learned than Picsyms or Blissymbols.	· PCS and Picsyms may serve as immediate means of communication for disabled people with spoken comprehension skills of close to three years. · When a long-term communication system is needed, other aspects should also be considered.

(P = participants, R = researcher, PCS = Picture Communication Symbols).

Table 1 (continued): A comparison of prominent studies on iconicity of aided symbol sets/systems performed after 1979

Title, authors, year	Objectives	Symbols used	Participants	Methodology	Results	Recommendations
A comparison of symbol transparency in nonspeaking persons with intellectual disabilities. **Mirenda & Locke, (1989)**	· To determine if most common pictographic symbol sets fall into a predictable hierarchy of symbol transparency for persons with limited language ability. · To test a screening procedure for assessing symbol transparency.	Coloured line-drawings (Self-Talk) Rebus PCS Picsyms Bliss also standard objects, nonidentical miniature objects, colour photos, black-and-white photos, printed words	· 40 participants between ages (y:m) of 3:11 and 20:10. · Mildly to severely intellectually handicapped. · All nonspeaking (ASHA, 1981).	· Screening determined which protocol applied. · Standard receptive language protocol: P required to match symbol to spoken label. · Alternate 'yes/no' protocol: P required to answer yes/no on 'Is this a *target label*?'. · Matching protocol: P required to match symbol with object, or vice versa.	· Based on mean number correct across subjects, the following hierarchy emerged (easiest to hardest): objects, colour photos, black-and-white photos, mini objects, Picsyms, Self-Talk, PCS, Rebus, Blissymbols, written words. · This hierarchy applies to nouns only. · This procedure might have yielded the best possible results because of two-choice discrimination protocols.	· This hierarchy appears to be uniform across the intellectual disabilities studied. · Yet, the choice of a symbol set/system should be done in collaboration with the individual and family members concerned. · A bigger array of symbols, and more trials per symbol should be incorporated.
The comparative translucency of initial lexical items represented in five different categories **Bloomberg, Karlan & Lloyd, (1990)**	· To compare the translucency of AAC symbols selected to form an initial lexicon. · Comparison across symbol sets/systems, as well as across parts of speech.	Rebus Bliss PCS PIC Picsyms	50 naïve undergraduate university students.	· Booklet contained symbols from five sets/systems, representing 41 lexical items. · Symbol and label were presented, P required to rate visual similarity on scale of 1 to 7.	· Nouns significantly more translucent than verbs across sets/systems. · Picsyms and Blissymbols: verbs and modifiers equally translucent. · Rebus, PCS and PIC: verbs significantly more translucent than modifiers. · Considering all parts of speech (most translucent to least): Rebus and PCS (equivalent), PIC and Picsyms (equivalent), Blissymbols.	· Symbol sets/systems are not internally consistent with regard to translucency. · An initial lexicon should include symbols selected from a variety of sets/systems, having considered the translucency of each item as well as the experience of the potential user.
Translucency values for 910 Blissymbols. **Lloyd, Karlan & Nail-Chiwetalu, (unpublished)**	To determine reliable translucency values for a pool of 910 Blissymbols.	Bliss	348 naïve undergraduate college students.	· 910 symbols selected according to specific criteria. · Ten booklets each containing 100 symbols. · P required to rate visual similarity on scale of 1 to 7.	The mean rating, standard deviation, median rating, interquartile range, modal rating, minimum and maximum ratings for each symbol is presented.	· These translucency data should lead clinicians in the selection of an initial lexicon. · Other variables should however also be kept in mind.

(P = participants, R = researcher, PCS = Picture Communication Symbols).

target symbols in later trials. It has been reasoned that such a forced-choice task might be easier than an open-choice task (Musselwhite & Ruscello, 1984), possibly resulting in the best possible transparency values. It is suggested that the presentation of a larger set of alternatives might moderate the task so that more realistic transparency values may be obtained.

In a critique of their own study, Mirenda and Locke (1989) mention that communication overlays typically contain more than two symbols. They maintain that the inclusion of a larger number of symbols in iconicity tasks might yield more accurate results for intervention purposes. This serves as another motivation for including more foils in transparency tasks. These issues are discussed in more detail in 2.8.

2.3 Perception of symbols

Before visual similarity between a symbol and referent can be perceived, perception of the symbol must take place. A lot has been written about visual perception and cross-cultural differences in the perception of pictorial materials (Bloomer, 1990; Deregowski, 1980a,b; Duncan, Gourlay & Hudson, 1973; Miller, 1973). Since most of the graphic representational systems frequently used for augmentative and alternative communication (AAC) can be described as pictorial in nature, this field of study may yield valuable information applicable to graphic representational systems.

Deregowski (1980a,b) describes a picture as a representational pattern. Blischak et al. (1997) describe a symbol as something used to represent a concept or thing. It is argued that the term 'picture' as used in the literature on pictorial perception is inherently similar to the broader use of the term 'symbol' in AAC literature. For the purposes of the present study both terms are used rather interchangeably, depending on the literature being discussed.

According to Deregowski (1980a,b) the first step in the perception of a symbol is for the viewer to realise that the markings on the surface he is viewing, mean something. Consequently the viewer must discriminate figure from background, and finally he must realise that what he sees stands for something in the real world. In other words, the viewer must grasp the representational nature of the patterns he perceives.

If the viewer perceives the symbol as visually similar to its referent, he will independently guess the target label. Transparency tasks typically involve this function, so that transparency is operationally defined as 'guessability' (Fuller & Lloyd, 1991). If the viewer does not perceive a strong visual similarity, he follows one of two routes: he either fails to identify the symbol; or he utilises skills learned from previous experiences with symbols to arbitrarily assign a label to the symbol.

It seems that the viewer, rather than the symbol, determines success in the iconicity task. If the viewer does not perceive a strong visual similarity between symbol and referent, and cannot assign a label on the grounds of previous experience, the symbol is opaque to that individual, regardless of how other individuals perceive it. Furthermore, if the viewer obtains the necessary experience he might very well be able later on to assign a label to the very same symbol. The case of the medical student learning to interpret X-rays (Deregowski, 1980b) will serve as illustration. On the first encounter with an X-ray plate the student probably will not be able to perceive the meaning of the marks on the surface, so that the X-ray could be considered opaque. After exposure to X-rays and training in interpretation, the student manages to assign meaning to the very same X-ray plate, so that the plate would now be considered iconic. Indeed, it appears that iconicity is in the eye of the beholder (Kose, Beilin & O'Connor, 1983; Romski & Sevcik, 1988) and not in the strokes of the picture. Therefore iconicity must of necessity be investigated in terms of the viewer involved.

2.4 Possible influences on the perception of pictures

If iconicity should be investigated in terms of the viewer involved, it is important to know which factors may influence the viewer in interpreting symbols. Literature describes the influence of factors such as the material on which symbols are printed (Deregowski, 1980a,b; Sigel, 1978); schooling (Duncan et al., 1973; Martlew & Connoly, 1996), thinking styles (Almanza & Mosley, 1980; Cole & Scribner, 1974; Retief, 1988; Solarsh, 2001; Taylor, 1994; Taylor & Clarke, 1994; Witkin, 1967), oral or literate background of viewer (Canonici, 1996; Havelock, 1963; Ong, 1982) and previous experience with symbols (DeLoache, 1991; Duncan et al., 1973; Friedman & Stevenson, 1975; Kose et al., 1983; Miller 1973; Sigel, 1978; Stephenson & Linfoot, 1996). These factors are described in the following sections.

2.4.1 The material on which symbols are printed

Deregowski (1980b; see also Sigel, 1978) describes how members of an Ethiopian tribe could recognise the pictures printed on coarse cloth, a material which they knew; yet when pictures were presented on paper – a material unknown to them – they tasted and smelled the paper and did not recognise the pictures. In this instance perception was inhibited by the use of foreign material.

2.4.2 Schooling

In a study performed by Martlew and Connoly (1996), human figure drawing of schooled and unschooled children in Papua New Guinea were compared. Children came from a remote area with no tradition of graphic art. It was found that the figures drawn by children who had

attended school were more sophisticated than figures drawn by children who had not attended school. They argued that school provided contact with drawings and opportunities to draw, which could aid the development of drawing in children. Although this study investigated drawing and not perception, it can be argued that previous exposure to pictures and symbols afforded by schooling would have similar facilitative effects on perception.

DeLoache (1991) proposed that participation in tasks involving one symbol system promoted understanding of subsequent tasks involving other symbol systems. Thus it was argued that contact with the literate culture of school facilitated the development of general symbolic understanding in the Papa New Guinea children, leading to more sophisticated drawings. This argument can be once again be applied to symbol perception. Since symbol perception and literacy are both symbolic tasks, participation in literacy activities at school might facilitate the perception of symbols. It therefore seems plausible that schooling might have a positive influence on picture perception skills.

Duncan et al. (1973) propose that it may not be formal education alone that familiarises people from other culture groups with the pictorial conventions of the West. They investigated urban and rural children from three cultures. All the children attended school, but they had different opportunities for exposure to pictorial material, and these opportunities correlated positively with picture perception abilities. These results suggest that exposure to pictures per se, not necessarily in connection with formal schooling, also serves to develop picture perception skills.

2.4.3 Previous experience with symbols

Kose et al. (1983) found that children between the ages of three and six from middle-class suburban neighbourhoods could imitate actions depicted in drawings and by live models or dolls better than actions depicted in photographs. While these children were familiar with dolls and drawings, they presumably did not know photographs well enough to understand how three-dimensional information could be transformed into two-dimensional presentations by a camera. The authors argued that possibly this lack of experience with photographs and cameras could have influenced the results.

Macintosh (1977) describes how a certain Aborigine could interpret the paintings in a cave but could not recognise representations of the paintings on paper, possibly because of his unfamiliarity with such recordings.

As mentioned earlier, Duncan et al. (1973) found a correlation between children's exposure to pictorial material and their pictorial perceptual ability. This correlation seemed the greatest

where 'artificial' cues were included in pictures, such as various conventions used to indicate action. They propose that since these cues are used arbitrarily, they are opaque to any person who has not previously been exposed to them. There appears to be general consensus in the literature that experience with symbols facilitates perception of symbols (DeLoache, 1991; Friedman & Stevenson, 1975; Miller 1973; Sigel, 1978; Stephenson & Linfoot, 1996).

2.4.4 Thinking styles

The term *thinking styles* refers to the consistent, characteristic mode of functioning that pervades the perceptual and intellectual activities of an individual (Witkin, 1967; Cole & Scribner, 1974). Witkin (1967) proposed an overall dimension along which all individuals can be placed and called it the *global-articulated* dimension of cognitive functioning. When this dimension is used specifically in relation to perception it is generally referred to as *field-dependence-independence* (Almanza & Mosley, 1980; Cole & Scribner, 1974; Retief, 1988; Solarsh, 2001; Taylor, 1994; Taylor & Clarke, 1994). It postulates that field-independent individuals (typically from European and Asian groups) analyse information and pay great attention to detail (Taylor, 1994). Field-dependent individuals, like those from African, African-American and Hispanic groups, view information in relation to the context in which it is presented. They can be described as socially orientated (Taylor, 1994).

These thinking styles have a definite influence on symbol perception. Field-independent individuals find it easy 'to perceive specific objects within a perceptual pattern as discrete entities' (Almanza & Mosley, 1980, p.610). For field-dependent individuals specific aspects of a perceptual pattern are overwhelmed by the characteristics of the global pattern. The embedded figure test is one of the tests used in determining field-dependence-independence. Participants are first shown a simple figure and then a more complex figure that contains the simple figure. Those who can analyse the complex figure to find the simple one are generally considered to employ a field-independent cognitive style, and vice versa. It should be emphasised that both styles are legitimate ways of thinking and the predominance of one style does not exclude the presence of the other (Almanza & Mosley, 1980; Hall, 1976; Solarsh, 2001; Taylor, 1994; Witkin, 1967).

In similar vein Hall (1976) differentiates between high-context and low-context cultures. In high-context cultures, like that of American Indians, Chinese and Japanese, individuals depend on the context of a transaction and on the pre-programmed information shared by them. Low-context cultures, like most Western cultures, are more concerned with the content or meaning of a communication than with its context.

Although different names have been allocated to the continuum of thinking styles, the underlying constructs seem similar, and that these consistent styles of functioning would influence symbol perception seems evident.

2.4.5 An oral versus literate state of mind

Before the advent of literacy in the old Greek civilisation, all information had to be memorised for it to survive, since there existed no means of recording it efficiently and unambiguously. This led to the development of an oral style rich in rhythmic and metrical patterns, primarily for mnemonic purposes (Havelock, 1963). Constant repetition and intense identification with the actors in epics were also employed as memory aids. Events were relived so intensely that no energy was left to analyze and reflect on the information that was memorized (Havelock, 1963).

It is argued that these attempts at remembering information led to distinct ways of thinking (Olson, 1994; Ong, 1982). Ong (1982) describes several characteristics of such orally based thought, and makes it clear that these apply to primary oral cultures: cultures that are wholly untouched by literacy. Such cultures are rare. Through the widespread use of instruments like television, telephone and even radio most 'oral' cultures today have had some contact with writing, resulting in 'secondary orality' (Ong, 1982).

The Zulu culture as it presently stands can probably be described as a secondary oral culture. The first written form of Zulu was developed in the 1840's by missionaries (Canonici, 1996). It is debatable whether access to printed matter since then had been adequate to promote a bookish culture among Zulus. Indeed, Duncan et al. (1973), Macdonald (1990) and Solarsh (2001) report on children's limited access to books and magazines. Today Zulu culture still includes oral traditions like the performance of folktales and poems and the prominence of praise names (Canonici, 1996). Yet it seems probable that most rural families have been exposed to print in some form. A recent study performed as the pilot for the Census At School (2001) project surveyed 43 500 learners from across the country (CensusAtSchool, 2001). Results showed that 93,9% of learners had radios and 74,8% had televisions in their own homes. These factors should caution the reader that the oral traditions found among Zulus today is secondary in nature. The influence of orality on symbol perception, although it probably exists, will not be easy to isolate.

2.5 The encompassing influence of culture

When these aspects are considered, it becomes evident that each aspect is in turn influenced by culture. Taylor and Clarke (1994) circumscribe culture as 'a set of behaviours, institutions,

beliefs, technologies and values invented and passed on by a group of individuals to sustain what they believe to be a high quality of life and to negotiate their environments' (p. 103). In short, culture is '... a perceptually shared reality, a world view' (Bloomer, 1990, p.16). Thus it is not inaccurate to assert that culture influences every thought process and action of human beings. More specifically with regard to what has been discussed above, culture undeniably dictates to a significant extent the material an individual is familiar with, whether the individual attends school or not, what thinking style he utilises, whether he operates from an oral or literate state of mind and whether he has had previous experiences with symbols or not. It seems that culture will have an overwhelming influence on the perception of symbols.

2.6 Implications for AAC

It is often stated as good practice to select symbols that are easy to learn as the first symbols to be taught (Fuller, 1997; Lloyd & Fuller, 1990; Mirenda & Locke, 1989). This strategy facilitates communication while at the same time creating success that in turn motivates the user. Iconicity information can greatly aid clinicians in such a selection, since iconic symbols are easier to learn (Fuller, 1987; Fuller, 1997; Lloyd & Fuller, 1990; Lloyd et al., 1997; Lloyd et al., 1985; Luftig, 1983; Luftig et al., 1983; Mizuko, 1987). Furthermore, information about the iconicity of symbols is especially valuable in South Africa because of widespread illiteracy. A literate communication partner can read the gloss that accompanies a symbol, but illiterate partners have to rely on the transparency of the symbols to guess its meaning. As Dunham (1989) pointed out, it is expensive and virtually impossible to train all possible communication partners in the use of the relevant symbol set/system, so that the use of iconic symbol sets/systems is more efficient.

Iconicity information therefore has tremendous value for selecting a symbol set or system for individuals in need of AAC in South Africa. As has been shown, however, this information is most useful if it is culture-specific.

2.7 Previous cross-cultural studies

Huer (2000) mentions the lack of AAC research that incorporates participants from non-European-American communities. A review of the literature yielded only three such studies. For the sake of clarity and ease of comparison, the particular objectives, methodological issues, research findings and recommendations of these studies are presented in Table 2.

Table 2: A comparison of previous cross-cultural AAC studies

Title, authors, year	Objectives	Symbols used	Participants	Methodology	Results	Recommendations
How do members of different language communities compose sentences with a picture-based communication system? – A cross-cultural study of picture-based sentences constructed by English and Japanese speakers. **Nakamura, Newell, Alm & Waller (1998)**	To determine the influence of word order and lack of particles on the performance of Japanese speakers when using graphic symbol sets that rely on English SVO word order.	PCS	· 80 naïve Japanese university students · Proficient in spoken and written Japanese · (In Japanese, particles rather than word order indicate subject and object. Most common word order is SOV).	· P listened to Japanese folktale. · 40 answered 5 questions using PCS alone, 40 with PCS and added particle array. · For half symbols were arranged in SVO order, for half in SOV order. · Interview with P after experiment.	· P used particles when available and reported difficulty when not available. · P produced more SOV than SVO sentences; no SVO sentences produced when particles were available.	· Particles should be added to graphic symbol sets, but may lower iconicity. · Thus add particles for users with adequate language ability. · English equivalent can be to add prepositions and tense markers.
Examining perceptions of graphic symbols across cultures: Preliminary study of the impact of culture/ethnicity. **Huer (2000)**	To examine the impact of culture/ethnicity on participants' perception of graphic symbols.	PCS DynaSyms Bliss	· 147 adults from comparable backgrounds but different cultures: European American, African-American, Chinese, Mexican	· Comparable to Bloomberg et al., (1990). · Labels of symbols were translated. · P presented with symbol and label, rated translucency on 7-point scale.	· Order of rankings the same across groups. · PCS most translucent, then DynaSyms, then Blissymbols. · Ratings within symbol sets showed significant differences.	· Developers of AAC symbol sets should take culture into account. · AAC symbols should be selected in consultation with users and families. · Participant selection and translation of labels important issues in further research.
Development and cultural validation of lexicon for Asian-Indian individuals who need alternative and augmentative communication. **Nigam, Nigam, Kiran, Koul, Pandita & Srinivasan (unpublished)**	· To culturally validate the PCS lexicon for Asian-Indian AAC users. · To develop a culturally relevant core lexicon for Asian-Indian AAC users.	PCS	· 120 adults from five different regions in India; some rural, some urban. · Different socio-economic backgrounds. · Previous contact with AAC user.	· Nomination: P nominated all words they deemed necessary for AAC users, first categorical, then non-categorical. · Rating: P rated the usefulness of existing PCS lexical items.	· 88 words nominated were not found in PCS lexicon · 247 PCS lexical items were rated as having no meaning to Asian-Indian AAC users. · Variation in lexical need across regional environments were found.	· Methodology was effective for cultural validation. · Next step: to determine the iconicity of existing symbols. · Asian-Indian artists should draw symbols for new words and for symbols that are low in iconicity.

(P = participants PCS = Picture Communication Symbols)

As can be seen in Table 2, only one of these studies investigated iconicity (Huer, 2000), and more specifically the dimension of translucency. African-American participants were included in this study, but since all of them were born and educated in America, the results cannot be applied to cultures indigenous to Africa. A real need for translucency and transparency data for African cultures is evident.

2.8 Iconicity in the context of a communication overlay

As mentioned in 2.2, Mirenda and Locke (1989) caution readers that the two-choice discrimination protocol used in their study probably produced the best possible transparency scores. They suggest that since communication overlays typically contain more than two symbols, the inclusion of a larger number of symbols in iconicity tasks might yield more accurate results for intervention purposes. Furthermore it can be argued that in order to obtain socially valid results, the iconicity of symbols should be investigated in the context in which those symbols are used most often.

In the light of these arguments the investigation of iconicity in the context of a communication overlay should be considered. Instead of presenting a participant with three to five symbols from which to choose, an entire overlay is presented.

Such a task would differ from those in previous iconicity studies in four important ways. Firstly, when participants are presented with a complete communication overlay, the set of alternatives is substantially larger than those in previous studies. This is one of the main motivations behind the methodology. Secondly, all symbols will be semantically related to the same theme and therefore possibly to each other, even if indirectly. The impact of this factor cannot be predicted. Thirdly, the 36 symbols comprising the set of alternatives will remain static across all 36 trials; and fourthly, each symbol will in time be the target symbol. This creates the possibility that some participants may remember which symbols they had chosen for several consecutive trials and, in response to the next labels, narrow their selection down to those not yet chosen. The possibility that a combination of these factors might influence the iconicity values obtained, should be kept in mind.

Goossens' et al. (1996) designed communication overlays of three different matrix sizes consisting of PCS symbols. Each overlay is organised around a theme and contains certain standard symbols, as well as theme-specific symbols. The placement of the symbols is governed by factors such as accessibility of high-use symbols, and grammatical category of symbols. Since these overlays can be photocopied directly from the manual, they are widely

used in South Africa, mostly unmodified. The use of an overlay from this collection therefore seemed appropriate for the present study.

As Fuller and Lloyd (1991) called for consistency in the use of iconicity terminology in order to avoid confusion, careful consideration had to be given to whether a task such as the one proposed would measure transparency or translucency. Transparency refers to 'the ease of identification of symbols when no additional cues, such as printed labels or verbal hints, are provided' (Musselwhite & Ruscello, 1984, p.437). In the proposed task participants would be indicating symbols in response to labels. Although such a task is typically employed in transparency studies, this term would not be appropriate since 'additional cues' would be provided by the theme of the overlay. Translucency on the other hand, is typically determined by presenting participants with a symbol and its referent, asking them to rate on a 5- or 7-point scale the extent to which the symbol looks like its referent. In the proposed task no ratings would be required from participants, so that the term translucency would not apply either. It could be argued that use of the more general term 'iconicity' would be most accurate; consequently this term is used throughout the study.

2.9 Summary

The purpose of this chapter is to show that iconicity cannot be investigated without taking into account the culture of the viewers involved. Furthermore information on iconicity specific to the cultures in South Africa is needed to ensure accountable service delivery. It is also argued that in order to obtain more valid iconicity results, symbols should be presented in the context they are most often used in. Thus the need for the present study becomes evident.