AFRICA

GHANA

The new HIV/AIDS Prevention
Adinkra symbol means: *You can
always go back for a condom.*

Use condoms.
Find out where
to get them.

xt "condom" to:

www.baohouse.org/redcard

Prevent HIV Infection. Use condoms.
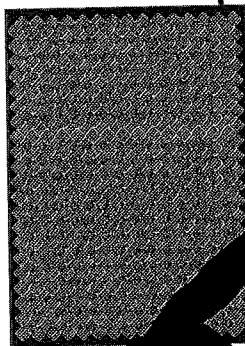Find out where to get them.
Text "condom" to:
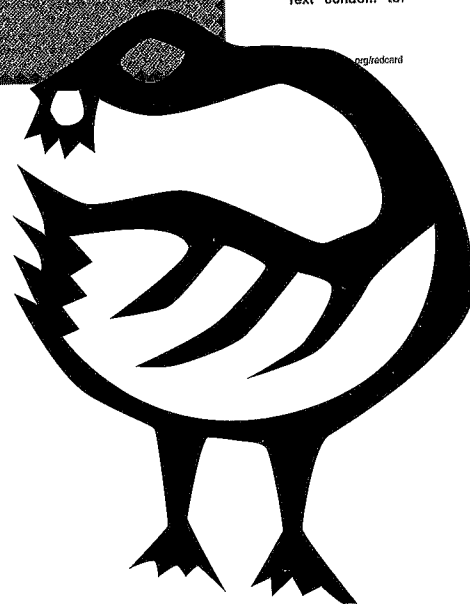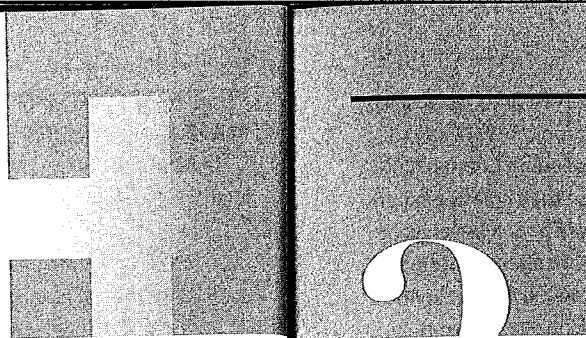
.org/redcard

localized but dissonant
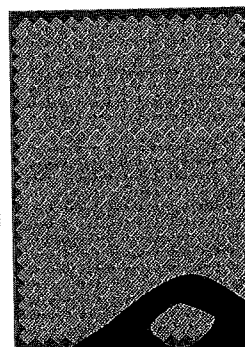
connotative localization

Connotative Localization of an HIV Prevention Image to Promote Safer Sex Practices in Ghana

Audrey Bennett

ABSTRACT

When designers localize an image's denotative elements according to the users' cultural preferences, research shows that it improves user experience and cross-cultural usability. However, this paper reports that, even when localized denotatively, culturally-based disparities—dissonance between how the designer communicates and how the user interprets from a cultural perspective—can still impede or entirely obstruct the image's connotative performance. Localization needs to facilitate adaptation of the image on a connotative level particularly when the goal is to bring about behavioral change hyper-locally, on a transnational and transcultural scale, with a community of users. This paper presents findings from a case study of a campaign for HIV prevention in Kumasi, Ghana that advocates for condom use. I conducted fieldwork over a period of two years during which I interviewed lay people in Kumasi about the denotative and connotative performance of an HIV prevention image called the Red Card. My data confirms the existence of cultural dissonance between my Westernized esthetic sensibilities and Ghanaian interpretive capacities. My data also corroborates that the use of connotative localization through an interactive communication design process (CLIC) can reveal semiotic noise hindering the image's connotative performance prior to its final production.

KEYWORDS

cross-cultural, transcultural, denotative, connotative, connotative localization, HIV prevention

Design education researchers who follow the creed of social consciousness advocated by the "First Things First Manifesto" (Barnbrook, 1999; Garland, 1964) and other related literature in the discipline, including Berman (2009), Heller and Vienne (2003), and Frascara (1997) may use their creative expertise and communication design resources to annihilate or at least prevent the further spread of HIV/AIDS. Those, with global humanitarian interests may opt to communicate HIV/AIDS awareness information and prevention images to lay people in different parts of the world. However, when they engage in transnational communication of this sort, disparities between their culture and that of the users of the images can cause varying levels of semiotic noise. The phrase "semiotic noise" refers to cultural interferences that hinder the ability of an image to communicate meaning in such a way that resonates culturally with the user(s). Preventing a health-based image for transnational communication from succumbing to semiotic noise can be the difference between the life or death of the users. Consider the following example told to the late graphic designer, Phillip Meggs, by the late graphic designer, Sylvia Harris:

> A group of American students tried to encourage inhabitants of a village in Nepal to take certain sanitation precautions. They presented the inhabitants with a three–foot–tall graphic of a fly contaminating food with an infectious bacteria. It was the intent of the American students to persuade the inhabitants to take the recommended precautions. Instead, the inhabitants of the village only laughed because they felt they [need not worry]. After all, the flies in their village were miniscule compared to the giant ones in the graphic.
> (Meggs, 1992, p. 4)

It is evident from this example that cultural difference can prevent visual language from communicating properly across cultures.

Applying Barthesian semiotics to the analysis of designed images, Frascara (2004) and Tyler (1992) argue that meaning occurs on two semiotic levels: denotation and connotation. Denotation, according to Frascara, is the user's objective reading of what the image represents; whereas, connotation refers to the user's more subjective, emotional reading. In the Nepalese example, cultural differences between the Nepalese villagers and the American design students created semiotic noise that hindered the ability of the students to communicate in the way intended. The image failed on the denotative level in that the villagers saw the representation of three-foot-tall flies as larger than the flies in Nepal. Consequently, the villagers blissfully connoted, perhaps with great relief, the opposite message of what the student designers intended: *We need not take the recommended sanitation precautions because we do not have three-foot-tall flies here in Nepal infecting our food with bacteria.*

The Nepal example is also significant for the ambiguity it reveals about the students' design process. On the one hand, if the

students intended the presentation of the poster to be the final dissemination to the targeted users, then they used an approach that the linear model of communication (Lasswell, 1948; Shannon & Weaver, 1949; Berlo, 1960) explains. In a linear communication process, communication is one way. The designer communicates an image to the user, and the user interprets the intended message. The goal of the image, as Tyler (1992) explains, is to engage the user in an experience and persuade her to receive life-saving information and take action. Tyler presents a taxonomy of user roles that include spectator, passive reader, active reader, and dynamic participant. In a linear communication process, the user performs the role of a passive reader who decodes a visual statement but does not participate in the formation of the designer's intended meaning. The designer confers meaning to the user. The linear communication process applies well to commercial design, where the goal might be to persuade the user to consume. For instance, aesthetically-pleasing packages, which sell cereal brands with excessive levels of sugar, epitomize a linear communication process that aims to drive consumption. There is limited regard for the impact of the sugary cereal on the health of the user. In the Nepal example, if it is a linear communication process, then the meaning to be accepted by the user is to take sanitary precautions.

On the other hand, if the student designers intended the presentation of the poster to be an opportunity to get input from the user prior to the production of the final poster, then they used an approach that the interactive model of communication (Schramm, 1955; Wood, 2012) explains. In an interactive communication process, communication is two-way. That is the designer communicates to the user, and the user provides feedback. In an interactive communication process, the goal of the image is as Tyler (1992) says: to engage the user in an experience and persuade her to receive life-saving information and take action. However, where the interactive communication process differs (from the linear model) is in the role of the user. In an interactive communication process, the user performs the role of an active reader who engages semiotically with the image decoding it according to his/her cultural beliefs and values. In the Nepal example, the Nepalese people gave crucial input regarding the culturally inappropriate size of the flies in the American students' poster. The conversational nature of interactive communication implies an iterative process when applied to design. Thus, if using an interactive communication design process, the American students would have had an opportunity to improve the poster's connotative performance by using, for the final dissemination, a more culturally-appropriate representation of Nepalese flies at a smaller scale.

HYPOTHESIS

The question then is: Which model of communication design should be used to communicate images that aim to effect safer sex practices and prevent the further spread of the HIV virus in transnational contexts? I posit that

using an interactive communication process that solicits user input, prior to the final production of the image, can reveal semiotic noise hindering the image's connotative performance.

METHODOLOGY

Poggenpohl and Sato (2009), Bennett (2006), Noble and Bestley (2005), and Laurel (2003) document communication design's evolution into a research discipline. That is, no longer do communication designers use only intuitive-based, linear communication design processes geared towards attaining aesthetically-appealing outcomes. Today some designers are employing empirical, research-oriented design methods aimed at verifying or falsifying existing findings and contributing new knowledge to the discipline's literature. Moreover, Frascara (2003) documents a paradigm shift in design literature. Moreover, Frascara (2003) documents a paradigm shift in design in terms of its integration of social science approaches. A paradigm shift that Frascara (1988) may have initiated himself when he asked the provocative question "Is graphic design fine art or social science?"

Thus I employed a qualitative, social science approach to test my hypothesis. I conducted ethnography in Kumasi Summer of 2010 and made observations that informed my designing and localizing the first iteration of an HIV prevention image for use in Ghana. Subsequently, during the summer of 2011, I conducted fieldwork at the Suntreso Government Hospital in Kumasi, Ghana. I carried out an interactive communication design session with lay people either getting HIV tested or treated for HIV at the hospital. I presented to each participant the Red Card shown in Figure 1, an HIV prevention poster the size of a playing card. Then I engaged them in a semi-structured interview about its semiotic performance. Finally, I conducted exploratory participatory design sessions with various stakeholders to develop an HIV prevention image using resources indigenous to Kumasi. The next sub-sections details these steps in the development of the Red Card.
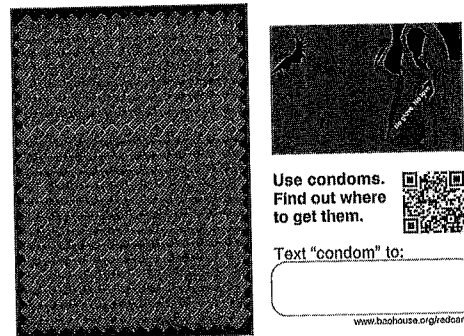
Iteration 1 of the Red Card after denotative localization by designer

ETHNOGRAPHY

Prior to my designing the Red Card in Figure 1, I conducted an ethnographic study in Kumasi a year prior. During the summer of 2010, I observed the culture of Ghanaians and conversed with many of them in English, Ghana's official language. Over a two-week period, I documented photographically vibrant Kente cloth patterns in Bonwire and local markets in Kumasi, existing HIV/AIDS campaigns, Adinkra symbols emblazoned on architectural sites, and a variety of mobile phones on sale in local markets.

LOCALIZATION BASED ON ETHNOGRAPHIC OBSERVATIONS

With my experiential knowledge of the culture of Kumasi, I returned to the United States where I designed the red card to appeal to what I understood of Ghanaians cultural sensibilities. I illustrated an image that I believed would resonate culturally to Ghanaians and communicate to use a condom during sexual intercourse. In collaboration with stakeholders on my team from the disciplines of Computer Science and Science & Technology Studies, I integrated their text-messaging component to the Red Card campaign image.[1]
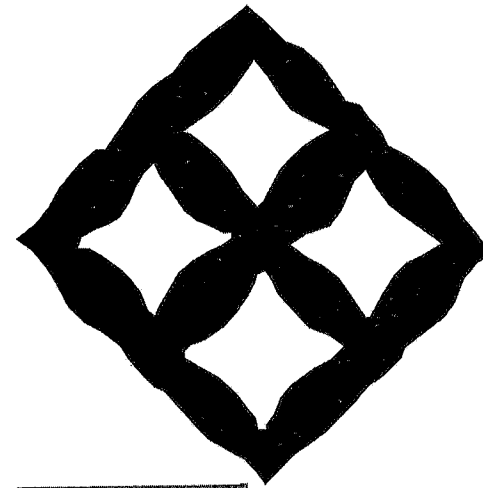
In Figure 1, the backside of the card on the left is colored red with a background image of the Adinkra symbol in Figure 2 repeated in a pattern in white. I designed the front side of the card, on the right in Figure 1, to depict a brown-skinned, Ghanaian woman whispering into the ear of her Ghanaian, male sex partner: *No gloves. No love.* Below the image, I set a Quick Response Code (QR Code) side by side with text that reads: Use condoms. Find out where to get them. Text: [A blank space to write in a mobile phone number]. Below the main text of the card, is another text in a smaller point size revealing the URL www.baohouse.org/redcard where users can find additional information about the Red Card campaign. It is to that same URL that the QR code directs users. The purpose of the Red Card is to promote safe sex practices and help Ghanaians find out where to get condoms in Kumasi. First, the image aims to attract the attention of the user and pull her in to linger and read the card. Then, the user texts the number on the card to find out the closest location in the community to get a condom. Next, the user receives a reply with the nearest location to receive a free condom or purchase one.

The Adinkra symbol called Eban represents fence and means "security, safety, and love" (see http://www.adinkra.org/htmls/adinkra/eban.htm)

INTERVIEWS WITH INTENDED USERS THROUGH FIELDWORK

The next part of my research project occurred in Kumasi over a two-week period during the Summer of 2011. There I gathered demographic information about each participant including:

    A. Age

    B. Gender: Male (M), Female (F)

I also collected "technographic" (Don and Petrick, 2003) information about each participant including:

    C. Technical proficiency: I asked each participant whether they believed their technical ability to be high (H), medium (M) or low (L).

Finally, I presented the red card to each participant

1.
To read more about how the mobile component of this culturally situated HIV prevention research is developing in terms of providing material access to condoms, see work by Rensselaer doctoral student David Banks on the open source condom vending machine at http://www.davidabanks.org/condom-vending-machine/.

and asked a set of questions that included the following:

    D. Can you read the words?

    E. What do this image and white text communicate to you? This question refers to the illustration of the brown-skinned woman whispering into the ear of her lover: "No gloves. No love."

    F. What does this image of the QR code mean to you?

    G. What does the pattern on the back mean to you? Do you recognize the Adinkra symbol?

        The interactive communication session with the Ghanaians was transnational and transcultural. Thus, we experienced interpersonal communication challenges. For example, in some cases, the Ghanaian participants were illiterate, unable to read English or Twi (the indigenous Ghanaian language). In other instances, though Ghana's official language is English, the Ghanaian participants were unilingual, speaking only Twi. Thus, bilingual translators mediated my interviews with some of the Ghanaian participants.

PARTICIPATORY DESIGN THROUGH FIELDWORK

In the development of health communication, particularly about HIV/AIDS awareness and prevention, Minkler & Wallerstein (2010) and Rhodes, Malow, & Jolly (2010) advocate for community-based participatory research (CBPR) that engages the user and other stakeholders in the decision making process. Thus, my team and I conducted two participatory design sessions in Kumasi prior to my departure. The first participatory design session involved a nurse at the hospital's clinic whose job includes going into the community to raise awareness of HIV/AIDS and knowing one's HIV status. After this initial participatory session, we conceived of an Adinkra symbol to represent HIV awareness. In the second participatory design session, we collaborated with an Adinkra artisan to create the new HIV Adinkra symbol that extends the existing Ghanaian Adinkra symbol system.

DATA ANALYSIS

Previous research argues for the use of localization techniques and strategies to address semiotic noise, a term introduced previously in this paper to describe cultural disparities prevalent in transnational and transcultural communication. Cyr and Trevor Smith (2004, p. 1199) define localization as adaptation to "a particular language, culture, and desired local 'look and feel.'" They found that design preferences do, in fact, differ across cultures. Thus designers should localize web interfaces for transnational communication through the use of culturally-specific aesthetics. Prior research has also applied localization to the design of HIV/AIDS campaigns. For instance, after conducting semiotic analysis on Kenyan HIV/AIDS campaigns, Banda and Oketch (2011) assessed some of the images to be ineffective in bringing

	QA	QB	QC	QD	QE	QF	QG
1	26	M	H	Yes	No gloves no love means no condom no love.	I have seen it; but, I don't remember where.	I recognize the Adinkra symbol; but, I don't remember what it means.
2	36	F	L	No	The image is a condom.	The image means nothing.	I have never seen the image on the back.
3	22	F	M	Yes	I see an ear; but I am having difficulty understanding the image at the top.	I do not recognize the QR code.	Nothing.
4	23	M	L	Yes	I can't understand the image.	I do not recognize the QR code.	Nothing.
5	36	F	L	Yes	I can't make out the picture well.	I can't make out the QR code.	I don't recognize the Adinkra symbol.
6	25	F	M	Yes	I can see someone speaking into someone's ear. No condoms no sex.	I do not recognize the QR code.	I don't recognize the Adinkra symbol.
7	25	F	M	Yes	I can't make out the picture very well.	I do not recognize the QR code.	I don't recognize the Adinkra symbol.
8	22	F	H	Yes	I can't make out the picture very well.	I do not recognize the QR code.	I don't recognize the Adinkra symbol.
9	34	F	H	Yes	We want to eliminate HIV. I know about HIV; and, I know about condoms. So, immediately I know what it is saying that "No condom. No sex."	I haven't seen the QR code before.	I don't recognize the Adinkra symbol.
10	31	F	M	Yes	No glove. No love. The girl is telling the boy that unless he gets a condom, they are not going to have sex.	I haven't seen the QR code before.	I recognize the Adinkra symbol but it should be bigger.
11	66	F	L	No	I can't see anything meaningful.	I see black but that is it.	I don't recognize the Adinkra symbol.
12	39	M	L	Yes	I see a condom. It means protection.	I see a black and white design. I do not know what a QR	I don't recognize the Adinkra symbol.

#	Age	Sex	Level	Y/N	Response E	Response F	Response G
13	30	M	H	Yes	A woman whispering "No Glove. No Love." Into the ears of another person...If it is not on, it is not in.	I don't know. A QR code is similar to a bar code isn't it? It is used to identify a particular item.	I don't know it.
14	33	F	L	No	—-	No	No
15	25	F	H	Yes	It is trying to tell me to protect myself.	I don't know.	I don't know.
16	30	M	H	Yes	No Glove. No Love... If you don't wear a protective rubber. You don't have to love someone. You have to protect yourself.	No.	—-
17	23	M	M	Yes	No. I can't read it. It is too small. It is not clear.	No	—-
18	22	F	M	Yes	It is an ear. I don't understand the rest.	No	No
19	23	M	H	Yes	I don't understand it.	No	—-
20	33	F	M	Yes	It is a male and a female. The female is telling the male if there's no condom there is not going to be sex.	No	Yes but I don't know the name.
21	24	M	H	Yes	Someone speaking into an ear. If it is not on, it is not in.	No	—-
22	26	M	M	Yes	No gloves. No love. Someone whispering something into another person's ear. No gloves. No love. It means if you don't use a condom no love.	No	I recognize the Adinkra symbol. I've forgotten what it means.
23	36	F	L	No	I can't make out the picture very well.	No	No
24	—	F	H	Yes	I can see somebody speaking into someone's ear: No glove. No love. It means no condoms. No sex.	No. I don't know what it is.	No. I don't recognize the Adinkra symbol.
25	25	F	M	Yes	I can't tell what it is.	No.	No.
26	—	F	H	Yes	No.	No	No
27	—	F	M	Yes	I can see somebody speaking into somebody's ear: No glove. No love. It means No condoms. No sex.	I don't know what it is.	—-

TABLE 1:
Data generated from semi-structured interviews between the designer and Ghanalans

FIGURE 3

The HIV Adinkra symbol in the form of an artisan stamp

about behavior change due to cultural dissonance and antagonism between some of the communication modes of the campaigns and the users' culture. They argue that HIV/AIDS campaigns are more effective when localized by the designer through the use of communication modes and resources familiar to the intended users. However, as the data in Table 1 shows, though localized to Ghanaian culture, the Red Card still generated a high level of semiotic noise in the transnational, interactive communication process.

Out of the twenty-six participants who responded to question E, less than half interpreted the image in the top portion of the card as I intended through the denotative localization I implemented. Most of the participants were unable to understand the meaning of my illustration of the brown-skinned woman whispering into the ear of her male lover: *No gloves. No love.* Twelve participants saw a woman whispering into the ear of her sex partner. Out of twenty participants, with a medium to high level of technical proficiency, only one recognized the QR code. However, none of the participants understood what it meant and how it functioned in the design. Finally, out of the twenty-two participants who responded to question G, only four recognized the Adinkra symbol; but, once again, none knew what it meant.

The participatory design sessions generated the HIV prevention Adinkra stamp in Figure 3. It is based on a well-known Adinkra symbol called Sankofa that means you can always go back to the past. The difference between the two is that

The new HIV/AIDS Prevention Adinkra symbol means: *You can always go back for a condom.*

Prevent HIV Infection. Use condoms. Find out where to get them. Text "condom" to:

www.baohouse.org/redcard

the HIV Adinkra symbol shows the Sankofa bird with a condom package in its mouth. Thus, in the next iteration of the Red Card, shown in Figure 4, I replaced the illustration of the brown-skinned woman whispering into the ear of her partner with a picture of the new HIV Adinkra symbol.

FIGURE 4

Iteration 2 of the Red Card after connotative localization through interactive communication

CONCLUSION

The question becomes What can we conclude from these research findings? One conclusion is that the concept localization needs to be re-operationalized to include two different levels of cultural adaptation: denotative and connotative. Cyr and Trevor-Smith's and Banda and Oketch's definitions of localization refer to the customization of an image's denotative features to a specific culture. However, this paper re-operationalizes localization as denotative *and* connotative customizations.

Denotative localization, in this paper, refers to the customization of an interface based on prior knowledge of the user's culture gleaned indirectly, for instance from print and digital texts, or experientially in an ethnographic manner through direct observation of users in their local context. The first iteration of the Red Card depicted in Figure 1 specifically represents denotative localization, for instance, through the use of brown-skinned people and an Adinkra symbol. I even chose the QR code in response to observing the use of cell phones in Kumasi. My data arguably shows that dissemination of the original iteration of the Red Card in Figure 1, would have likely been impaired in its function: to promote safer sex practices by Ghanaians and help them to find out where to get condoms in Kumasi. However, when I opened up the design process to allow for connotative localization, I found a new indigenous mode of communicating HIV prevention through the use of an Adinkra symbol.

Connotative localization refers to the adaptation of an interface to the culture of an intended user through an interactive communication process that provides a feedback loop between the designer and user prior to the production of the final image. During connotative localization, the designer opens up the design process to share control of design decisions with the intended users. Thus, in connotative localization, the user's role evolves to that of an active participant who co-constructs meaning (Bennett, 2012). The image signifiers that connote meaning leading to cognitive or behavioral change, come from a negotiation between the designer and quintessential members of the intended community. The transnational and transcultural image in Figure 4 represents the outcome of connotative localization through interactive communication, an approach that entails the following designer actions:

Observing users and their environments through ethnography,

Developing and denotatively localizing an image based on recorded observations during Step 1,

Interviewing users about the semiotic performance of the outcome from Step 2,

Conducting participatory design sessions with users or quintessential users,

Rendering the next iteration of the image outcome based on the participatory design sessions and repeating steps 1 through 5 until finding a desirable outcome.

Noar (2006) and Maibach, et al. (2002) disclose principles for effective HIV/AIDS prevention campaigns that include formative user research and testing and summative evaluation requirements. The first five steps of connotative localization through interactive communication (CLIC) reflects formative user research. However, my previous work titled "Good Design is Good Social Change: Envisioning an Age of Accountability in Communication Design Education" (2012) argues for greater accountability in the discipline through evaluation of design outcomes in their intended social contexts. Thus we could extend CLIC to include summative evaluation with the inclusion of the following step:

Evaluating the image outcome from Step 5 and its ability to effect cognitive or behavioral change in the intended, transnational community.

For instance, the Red Card aims to prevent further HIV infections by advocating for condom use and helping Ghanaians to find condoms in their local community. Finally, additional funding for fieldwork can lead to testing of the Red Card to determine whether or not it achieves its goal. This lacuna in my data and findings brings us to a drawback of the CLIC approach: it requires extensive research funding.

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