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■ 'If you care, do not share'. Exploring the effects of using rhetorical figures to stimulate young South Africans to discuss HIV and AIDS messages

■ Elizabeth Lubinga, Carel Jansen and Alfons Maes*

Abstract

Health communication campaigns today often use messages which include verbal and/or visual rhetorical figures. Rhetorical figures may be used with the intention of puzzling audiences, and ultimately provoking discussions about the addressed health-related issues. This study investigates the effects of using deliberately puzzling verbal and visual rhetorical figures in health messages targeted at South African youth. It explores which message variables may predict the audience's willingness to engage in discussions with friends or older people. Four different HIV and AIDS posters, in four different versions of rhetorical figures, were presented to 160 young South Africans. The verbal rhetorical figures that were used significantly and negatively affected the receivers' (actual and perceived) comprehension, the perceived comprehension by friends, the perceived personal relevance, as well as their willingness to discuss the message with friends. No significant main effects were found of the visual rhetorical figures used. One significant interaction effect was found of verbal and visual rhetorical figures: the absence of both verbal and visual rhetorical figures led to the highest level of willingness to discuss messages with older people. Significant positive predictors of the receivers' willingness to discuss messages with friends proved to be perceived comprehension by friends, perceived personal relevance, and perceived own comprehension. Willingness to discuss messages with older people was positively related to perceived comprehension by older people, and to perceived personal relevance.

Keywords: HIV and AIDS messages, interpersonal discussions, puzzling messages, verbal and visual rhetorical figures, young South Africans

INTRODUCTION

A growing number of researchers agree that health-related behaviour change is partly dependent on interpersonal discussions about mass media messages (e.g., Chatterjee, Bhanot, and Frank et al. 2009; Durkin and Wakefield 2006; Snyder, Hamilton, and Mitchell et al. 2004; Southwell and Yzer 2007). Such conversations can lead to social norm change, which may indirectly lead to behaviour change. Empirical studies support the link between interpersonal discussions stimulated by health media campaigns, and changes in motivation and behaviour. For example, Dunlop, Kashima, and Wakefield (2010), in a study in which college students were exposed to health-related radio

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advertisements promoting the Human Papilloma Virus (HPV) vaccine to women, found that the participants who discussed the advertisements reported more positive intention change than those who did not.

Hwang (2012), in another study on the role of interpersonal communication in the generation and diffusion of campaign effects, found that campaign effects may be amplified by conversations, which in addition to individual exposure to media messages also influence behaviour change. A study by Van den Putte, Yzer, and Southwell et al. (2011) revealed the clear effects of interpersonal discussions about anti-smoking media content on smoking cessation. Evidence was found that exposure to media campaigns led to discussions which influenced not only intentions, but also actual attempts to quit smoking.

So far, little research has been conducted on the message characteristics that spur conversations. 'Whilst there is a growing consensus that campaign-stimulated discussion may amplify (or sometimes dampen) media effects, the message features that encourage discussion are yet to be identified in any empirical study' (Dunlop, Kashima, and Wakefield 2010, 519). Hwang (2012, 16) adds that 'campaign planners need to find a way to spur and generate campaign-related conversations when they design campaign messages, in order to create more effective campaigns'. An important question therefore is: How should health campaigners design mass media health messages that could stimulate conversations related to the health messages they wish to convey?

RHETORICAL FIGURES: POSSIBLE MESSAGE FEATURES TO STIMULATE CONVERSATIONS?

One of the message features that may play a role in stimulating the conversations campaign developers are aiming for, is the use of rhetorical figures. Professional communicators often use rhetorical figures in commercials, for instance, to create messages that attract the attention of the intended audience and may be more persuasive than other messages, because the rhetorical figures deviate from the audience's expectations (McQuarrie and Mick 1996; Van Enschot, Hoeken, and Van Mulken 2008). Deviating from expectations may also help to create messages aimed at stimulating conversations among audiences. In their classification of rhetorical figures, McQuarrie and Mick (1996) distinguish between figures with a deviating form (*schemes* such as rhyme and alliteration, among others) and figures with a deviating meaning (*tropes*, such as metaphors and puns, among others). Schemes may be aesthetically pleasing but do not contain puzzles, therefore they are not cognitively challenging. Tropes, however, may require a great deal of cognitive input on the part of the recipients, in order for them to interpret the meaning.

As Steen (2008, 213) states, metaphors invite people to understand one thing (the *target*) in terms of another (the *source*). Examples are 'his teacher tried to plant the seeds of wisdom', where teaching (target) is compared with sowing (source) and 'she overflowed with grief', with the body (target) symbolised as an open container (source). Since the publication of *Metaphors we live*

by, the influential book by Lakoff and Johnson (1980), much theoretical work has been done on metaphors, and a wide range of experiments have been carried out to determine the possible effects of this classic and still much-used rhetorical figure. Following empirical studies on metaphors in persuasive texts, Sopory and Dillard (2002) conclude that substantial persuasive effects can be expected from metaphors, 'when a single, non-extended metaphor [is] novel, [has] a familiar target, and [is] used early in a message' (Jansen, Nistelrooij, and Olislagers et al. 2010, 134 and 138; Sopory and Dillard 2002, 382). Metaphors can be found in verbal or visual modes, or in a combination of text and image (see Figure 1, an example of a combined verbal/visual metaphor generated by the South African health promotion organisation, loveLife).



Figure 1: HIV and AIDS poster with combined verbal and visual metaphoric (rhetorical) elements, produced by the South African health promotion organisation loveLife

The visual part shows a (time) bomb, while the verbal message reads: 'Is this your relationship?' The visual part offers the source domain of the metaphor, the verbal part the target. Together they communicate the message that a sexual relationship may be a potential danger to the partners. Metaphorical elements often not only make messages more attractive, but also more indirect and puzzling than literal messages. They require greater cognitive effort on the part of the reader, but may also be more rewarding once the receiver manages to solve the riddle and to understand the message (as suggested by Maes and Schilperoord 2008; McQuarrie and Mick 1999; Ojo and De Lange 2011; Tanaka 1992 and 1994).

Schemes, on the other hand, rely on excessive regularity of form, without changing the meaning. Examples are the use of repetition of key words in a phrase, the repetition of words at the beginning

and/or end of sentences, as well as the repetition of syllables at the end of words. Rhyme, in particular, employs the repetition of identical or similar sounds, and sometimes similar visual elements. Figure 2 shows a rhyming text on an HIV and AIDS poster produced by Ndlovu Clinic.



Figure 2: Rhyming text on an HIV and AIDS signboard produced by Ndlovu Clinic (a community development group in South Africa)

Figure 3 presents a poster from loveLife in which both textual and visual repetition are used.

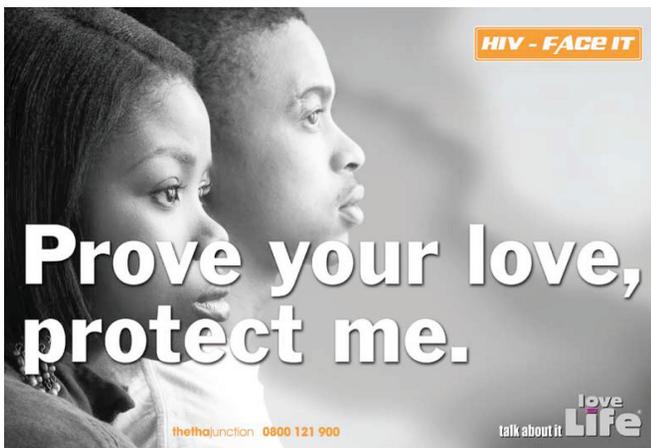


Figure 3: HIV and AIDS poster with verbal and visual scheme, produced by loveLife

Not only puzzling tropes but also catchy and attractively designed schemes may attract the audience's attention, and both have the potential to stimulate discussion.

For a number of years, loveLife has been using messages that were deliberately intended to be puzzling, with the assumption that presenting these messages to 12–17-year-olds would provoke them into discussing HIV, AIDS and sex with their peers and with older people. According to Refilwe Africa, the then editor of loveLife's magazine, *Uncut*, the puzzling campaigns were designed to stir up controversy, but also to confuse audiences in order to trigger them to talk about HIV and AIDS.

We want people to think about our posters. Either they understand it from first-hand or they get angry and say: I do not know what you are trying to say. At some point in our campaign, we will get people to wonder. This creates conversation between parents and children, dialogue between peers. That is exactly what we want to achieve, that people talk about HIV/AIDS and sex ... We don't want to be too obvious, because we will lose the attraction of controversy. (in Hollermans 2005)

loveLife never referred to any research conducted prior to the campaigns that may have led to the media strategy described in the quotation above, nor has the organisation referred to empirical studies into the effects of their rhetorical messages. A 2007 evaluation study conducted on a variety of loveLife prevention programmes, such as Youth centres, groundbreakers and Mphitshis, examined levels of awareness and exposure to the programmes, among other issues (Pettifor, MacPhail, and Bertozzi et al. 2007). A recent study also conducted a survey on all loveLife programmes, including exposure to the messages among the youth (Louw, Peltzer, and Chirinda 2012), but neither study explored the effectiveness of the messages. A number of studies have been done, mostly focusing on the (mis)understanding of loveLife's campaign messages (Delate 2001; Lubinga, Schulze, and Jansen et al. 2010; Parker 2006; Thomas 2004; Zisser and Francis 2006).

In one of these studies, in which learners were asked to interpret advertisements from loveLife, one learner explained the message, '*Prove your love, protect me*' as: 'Having sex with him means that you will be proving your love for him' (Lubinga et al. 2010, 182). As this example illustrates, when a confusing message is published and circulated, receivers may arrive at a different, unintended interpretation, which may in turn lead to unintended beliefs. Misunderstanding health messages could not only be detrimental to the beliefs, attitudes and intentions of the receiver, but incorrect interpretations could also lead to discussions within a larger group having a negative impact on the individual receiver's health (and, potentially, the health of others in the group).

The first objective of the present study is to assess the effect of including deliberately puzzling rhetorical figures (verbal or visual or a combination of both) in health messages on young South Africans' comprehension: (1) on their actual comprehension (the extent to which they understand the message, as intended by the communicating organisation) and (2) on their perceived comprehension (the extent to which they think they understand the message).

CONDITIONS UNDER WHICH YOUNG PEOPLE MAY BE STIMULATED TO DISCUSS MESSAGES WITH RHETORICAL FIGURES

This study also aims to explore the conditions under which young people may feel stimulated to discuss messages which include rhetorical figures. Hoeken, Swanepoel, and Saal et al. (2009) offer a framework for explaining the effect of rhetorical, puzzling figuration on the willingness to discuss. They argue that readers and viewers are only willing to discuss messages when they think they understand those messages themselves. If that is the case, they may have two reasons for engaging in related discussions: (1) they may want to show off their (perceived) comprehension of the message in front of their peers, whom they presume will not understand the message (I am so smart that I am able to understand this message while you probably can't); (2) they may want to discuss a message with their peers as a way of strengthening group identity (We are so smart that we are able to understand this message, while other people probably can't).

Two recent studies, both carried out in South Africa, found empirical support for the assumption that there is a positive relation between receivers' perceived own comprehension and their willingness to discuss that message with their peers. In a study conducted among high school learners (Lubinga et al. 2010) and another carried out among first-year university students (Jansen and Janssen 2010), respondents were asked to react to HIV and AIDS messages. The results of both studies confirmed that when the learners and the students thought that they understood the messages, there was a greater chance that they would be willing to talk about the messages, than when their perceived own comprehension was low.

What is still unclear, however, is how the willingness of audience members to discuss health messages relates to their assessment of whether their possible conversation partners will comprehend the messages: the perceived comprehension by peers and by others, for example, older people such as parents and teachers. In other words: Is there empirical evidence for the 'showing off' effect proposed in Hoeken et al. (2009), i.e. the willingness of the target audience members to discuss a message if their perception of their own perceived comprehension is high, while the perceived comprehension by friends is low? Or is there evidence in favour of the 'group identity' effect? Are audience members indeed willing to discuss messages if both their own perceived comprehension and the perceived comprehension by friends is high, while perceived comprehension by others is low? The present study will assess how the respondents' willingness to engage in discussions can be predicted by the combination of respondents' perceptions of their own level of comprehension, that of their friends, and that of older people. Specific attention will be paid to the extent to which the respondents' perceived *difference* between their own comprehension and the level of comprehension by friends and older people may predict their willingness to engage in discussions.

Two other variables will also be taken into account, whose potential relevance to the stimulation of discussions is suggested by earlier studies (Jansen and Janssen 2010; Lubinga et al. 2010). One variable is the appreciation of the message. The reward for 'solving' puzzling messages may lead

to a greater appreciation of the message (McQuarrie and Mick 1999; Van Enschoot et al. 2008). This 'pleasure of text' may, in turn, lead to a greater willingness to discuss the message with others. The second variable is perceived personal relevance: To what extent do receivers feel the message relates to their personal circumstances? The Elaboration Likelihood Model (ELM) proposes that the more a receiver is involved in a topic, the more motivated the receiver will be to think about messages pertaining to that topic, which creates a beneficial environment for stable changes to occur in attitude, behavioral intention and, ultimately, behaviour (Petty and Cacciopo 1986). A recent study into discussions among viewers of public service announcements suggests that 'topical relevance' may be a necessary condition for engaging in debates about the topics addressed in such announcements (Helme, Noar, and Allard et al. 2011). According to Lubinga et al. (2010), the perceived personal relevance of a health message may play a similar role in willingness to discuss such messages.

In sum, this study will assess the effect of deliberately puzzling rhetorical figures (verbal or visual or a combination of both) in health messages on young South Africans' actual and perceived comprehension. Furthermore, the influence will be assessed of potentially relevant variables (perceived own comprehension, perceived comprehension by friends, perceived comprehension by older people, perceived difference between own comprehension and comprehension by friends and by older people such as parents and teachers, appreciation of the message, and perceived personal relevance) on the respondents' willingness to discuss the messages.

METHOD

Participants

In total, 160 learners were randomly selected from 11 high schools from the Vhembe District in Limpopo Province; the questionnaire of one of the participants was misplaced; consequently data from 159 learners (75 boys and 84 girls) were analysed. All learners were from grades 8 to 11, and between 13 and 17 years of age. Most of the schools selected for the interviews were based at some distance from each other, to discourage respondents from meeting and sharing information, which would have compromised the experiment.

Materials

Posters

Four HIV and AIDS posters, each on a different theme, were constructed in four versions each. Version 1 (-verbal rhetorical figure, -visual rhetorical figure) contained an unambiguous literal verbal message (e.g. 'Drinking leads to unsafe sexual behavior') and a visual element literally illustrating the topic of the message (the bottle and the glass). In version 2 (+verbal rhetorical figure, -visual rhetorical figure) the literal version of the text from version 1 was replaced by a

figurative text including both a trope and a scheme. An example is 'Abuse booze, you lose', a text which can be considered a trope necessitating some cognitive effort in that it refers to the source domain of losing something not mentioned explicitly. This source domain is metaphorically related to the target domain of using too much alcohol. 'Abuse booze, you lose' also includes a scheme, in that it clearly rhymes. In version 3 (-verbal rhetorical figure, +visual rhetorical figure) a metaphorical visual element was added to the visual element supporting the message (e.g. a snake was added to the bottle and the glass, thus introducing the source domain of danger in relation to the target domain of drinking alcohol). Version 4 (+verbal rhetorical figure, +visual rhetorical figure) combined the figurative text with the addition of the visual metaphorical element. The construction of posters in this study, with catchy rhyming text as well as combinations of verbal and visual metaphoric elements, was influenced by posters previously used in actual health campaigns in South Africa by organisations such as Ndlovu Clinic and loveLife (see Figures 1, 2 and 3). All the posters carried a logo with the red ribbon and the text 'Stop AIDS'. The design and layout of the posters followed South African conventions for health messages (see Appendix 1 for all the posters).

The four themes used for the posters were alcohol abuse, intergenerational relationships, multiple partners, and peer pressure. These themes were selected because they were highlighted as important social determinants of HIV infections in the country, by the Human Sciences Research Council's (HSRC) *South African National HIV Prevalence, Incidence Behavior and Communication Survey*, carried out in 2008 (Shisana, Rehle, and Simbayi et al. 2009) and in the 2009 *South African National HIV Communication Survey* (Johnson, Kincaid, and Laurence et al. 2010).

The language of the posters was English, following the results of a previous study on the effects of using African languages in HIV and AIDS messages (Lubinga and Jansen 2011). In this study, existing loveLife posters in two African languages and in English were presented to young Sepedi and Tshivenda mother-tongue speakers from Limpopo Province. Lubinga and Jansen found no support for the assumption that HIV and AIDS messages presented in African languages would be more effective for young South African mother-tongue speakers than the same messages presented in English.

Questionnaire

The learners were asked to answer a structured list of questions from a questionnaire. In the questionnaire, the same set of questions was repeated for each poster. Single item measures were used in the questionnaire. It was decided to present the young learners in this study with only one item per variable, in order to ensure that their full attention was on the task, given that it was a demanding one. It can be argued, though, that from a reliability point of view using more than one item per variable may have been the better option. However, Diamantopoulos, Sarstedt, and Fuchs et al. (2012, 436) point out that scale developers sometimes place undue emphasis on the use of multiple item measures for purposes of achieving a high reliability, resulting in

semantically redundant items that adversely affect the measure's validity. They argue that 'when a construct is narrow in scope, unidimensional and unambiguous to the respondent, using single item measures is the best measurement approach' (ibid, 446). Actual comprehension was measured using an open question, following questions on perceived own comprehension: 'What is the most important message that this poster is trying to give to you?' Four raters (excluding the researchers) were asked to rate on a four-point scale (*1 = full disagreement and 4 = full agreement*) the level of agreement between the correct interpretations of the messages, as determined by the authors of this article on the one hand, and the learners' responses on the other hand. The following interpretations were considered to be correct:

- poster 1: 'Drinking alcohol will lead to engaging in unprotected sex, which may cause AIDS';
- poster 2: 'School-going children who have sexual relations with older people expose themselves to getting HIV and AIDS';
- poster 3: 'Having sexual relations with many partners at the same time, will lead to getting HIV and AIDS';
- poster 4: 'Following the wrong advice from friends will lead to getting HIV and AIDS.'

The order in which the participants' answers were presented to the raters differed systematically. The level of agreement between the raters was satisfactory: intra-class correlation (single measures) was .76; intra-class correlation (average measures) was .93.

Four-point scales were used to measure the level of perceived own comprehension (*1 = not easy to understand at all and 4 = very easy to understand*), perceived comprehension by friends (*1 = not easy to understand at all and 4 = very easy to understand*), perceived comprehension by older people (*1 = not easy to understand at all and 4 = very easy to understand*), appreciation (*1 = do not like it at all and 4 = like it a lot*), willingness to discuss the messages with friends, willingness to discuss the messages with older people (*1 = not probable at all and 4 = very probable*) and perceived personal relevance (*1 = not important at all and 4 = very important*). By using four-point scales, the researchers opted not to offer the respondents a mid-point, to minimise their acquiescence response bias. An open-ended question, in which the learners were asked to explain why they had chosen a particular option, followed each scale. The questionnaire also included closed-ended questions about personal information.

DESIGN AND PROCEDURE

Each participant was asked a number of questions about four posters; different versions of each poster were presented, each dealing with a different theme. The various combinations of versions and themes were randomly distributed among the respondents. It was ascertained that each poster version and each poster theme was randomly divided over the four presentation positions (first,

second, third, last poster presented). Each participant carried out the experiment in an individual interview with the first author of this article (from here: the experimenter), who had a pre-ordered selection of the posters, and a pre-labeled questionnaire. The experiment was carried out in a quiet room. For each learner, the experimenter displayed each poster on a wall/table, to give the learner a good vantage point. Where necessary, the experimenter was assisted by research assistants who were fluent in the home languages of the respondents. The entire procedure was recorded using voice recorders. All responses were later transcribed verbatim, then translated into English for coding and analysis by fluent speakers of both the African languages and English. The translations were confirmed as correct by specialists in the various African languages. Each interview took approximately 25–30 minutes. Data collection took one week to conduct at all the schools.

For the interviews with the learners at the high schools involved in this study, it was mandatory to gain permission from the Limpopo Provincial Department of Education. Permission was granted, provided that learning time would not be disrupted and that interviews could only take place after the circuit managers and the principals of the schools had given their permission. This happened in all instances. The participants were informed that their responses would be treated confidentially. Learners who were not willing to participate did not take part in the experiment.

RESULTS

The effect of including rhetorical figures (verbal or visual or both) in the posters was measured in a series of 2 x 2 repeated-measures analyses of variance, with verbal rhetorical figures (absent, present) and visual rhetorical figures (absent, present) as independent within-subject variables (N=159). Dependent variables were actual comprehension, perceived own comprehension, perceived comprehension by friends, perceived comprehension by older people, appreciation, perceived personal relevance, willingness to discuss with friends, and willingness to discuss with older people.

One significant interaction effect was found of verbal rhetorical figures and the presence of visual rhetorical figures. The absence of both verbal and visual rhetorical figures led to the highest level of willingness to discuss messages with older people: $F(1,158)=3.92$; $p<.05$; $\eta^2=.02$. No significant main effects were found of the presence of visual rhetorical figures. The presence of verbal rhetorical figures, however, had a significant main effect on the following dependent variables: actual comprehension: $F(1,158) = 98.73$; $p<.001$; $\eta^2=.39$; perceived own comprehension: $F(1,158) = 34.90$; $p<.001$; $\eta^2=.18$; perceived comprehension by friends: $F(1,158) = 17.03$; $p<.001$; $\eta^2=.10$; perceived personal relevance: $F(1,158) = 8.07$; $p<.01$; $\eta^2=.05$; willingness to discuss with friends: $F(1,158) = 6.52$; $p=.01$; $\eta^2=.04$ all significantly decreased when verbal rhetorical figures were used. The presence of verbal rhetorical figures had no significant main effect on perceived comprehension by older people, appreciation, and willingness to discuss with older people (see Appendix 2 for mean scores and standard deviations for all posters and all variables measured).

Table 1: Effects of including verbal and visual metaphors on eight dependent variables (minimum 1; maximum 4): means and standard deviations

	- verbal metaphor - visual metaphor N=159	+ verbal metaphor - visual metaphor N=159	- verbal metaphor + visual metaphor N=159	+ verbal metaphor + visual metaphor N=159	Significant effects?
actu	2.46 (1.03)	1.81 (0.82)	2.57 (1.05)	1.83 (0.87)	- verbal metaphor > + verbal metaphor
pou	3.36 (0.99)	2.80 (1.21)	3.32 (1.03)	2.87 (1.13)	- verbal metaphor > + verbal metaphor
puf	3.05 (1.09)	2.70 (1.15)	3.10 (1.09)	2.75 (1.14)	- verbal metaphor > + verbal metaphor
puo	2.86 (1.22)	2.87 (1.21)	3.00 (1.11)	3.01 (1.14)	none
ppr	3.74 (0.76)	3.60 (0.90)	3.77 (0.66)	3.58 (0.92)	- verbal metaphor > + verbal metaphor
app	2.58 (1.34)	2.49 (1.27)	2.64 (1.40)	2.46 (1.31)	none
wdf	3.23 (1.11)	3.18 (1.11)	3.36 (1.05)	3.01 (1.20)	- verbal metaphor > + verbal metaphor
wdo	2.92 (1.16)	2.70 (1.17)	2.74 (1.17)	2.84 (1.18)	interaction effect: -verbal & - visual metaphor > other versions

- actu actual understanding
- pou perceived own understanding
- puf perceived understanding by friends
- puo perceived understanding by older people
- ppr perceived personal relevance
- app appreciation
- wdf willingness to discuss messages with friends
- wdo willingness to discuss messages with older people

Table 1 shows if and how verbal and visual rhetorical figures affected actual comprehension, perceived own comprehension, perceived comprehension by friends, perceived comprehension by older people, appreciation, perceived personal relevance, willingness to discuss with friends, and willingness to discuss with older people, as compared to the literal conditions.

The dependence of South African message receivers' willingness to engage in discussions with their friends and with older people on other variables was measured in linear regression analyses using reactions from the respondents to all posters they were presented with (N=636). Collinearity diagnoses revealed no problems which made it necessary to exclude independent variables in any of the regression analyses reported here. In the first regression analysis, willingness to discuss messages with friends served as the dependent variable, and perceived own comprehension, perceived comprehension by friends, perceived comprehension by older people, appreciation, and perceived personal relevance served as predictor variables. Three variables significantly contributed

to the predictability of willingness to discuss messages with friends (explained variance in total: $R^2 = .24$); in order of importance as indicated by the beta values: perceived comprehension by friends ($\beta = .33$; $p < .001$), perceived personal relevance ($\beta = .17$; $p < .001$), and perceived own comprehension ($\beta = .12$; $p < .01$).

In the second regression analysis, willingness to discuss messages with older people served as the dependent variable. Perceived own comprehension, perceived comprehension by older people, appreciation and perceived personal relevance served as predictor variables. Two variables significantly and positively contributed to the predictability of willingness to discuss the messages on the posters with older people (explained variance in total: $R^2 = .10$); in order of importance: perceived comprehension by older people ($\beta = .22$; $p < .001$), and perceived personal relevance ($\beta = .14$; $p = .001$).

In order to determine to what extent a participant's perceived difference between his or her own level of comprehension and the level of comprehension by others influenced his/her willingness to discuss, two more regression analyses were performed. In the third regression analysis, willingness to discuss messages with friends again served as the dependent variable, and in the fourth regression analysis the dependent variable again was willingness to discuss messages with older people.

In the third regression analysis, predictor variables were the difference score of perceived own comprehension and perceived comprehension by friends, the difference score of perceived own comprehension and perceived comprehension by older people, appreciation and perceived personal relevance. All four predictor variables significantly contributed to the predictability of willingness to discuss the messages on the posters with friends (explained variance in total: $R^2 = .16$); in order of importance: perceived personal relevance ($\beta = .28$; $p < .001$), perceived difference between own level of comprehension and level of comprehension by friends ($\beta = -.22$; $p < .001$), perceived difference between own level of comprehension and level of comprehension by older people ($\beta = .19$; $p < .001$), and appreciation ($\beta = .12$; $p < .01$).

Further inspection of the data, distinguishing between reactions showing a low level (< 3) of perceived own understanding ($N = 171$) and reactions showing a high level (≥ 3) of perceived own understanding ($N = 465$), revealed the following: significant contributions to the predictability of willingness to discuss the messages on the posters with friends were found for perceived difference between own level of comprehension and level of comprehension by friends ($\beta = -.34$; $p < .001$; $\beta = -.32$; $p < .001$, respectively), and perceived personal relevance ($\beta = .26$; $p < .001$; $\beta = .14$; $p = .001$, respectively). Only with level of perceived own understanding level ≥ 3 , appreciation ($\beta = .26$; $p < .001$) and perceived difference between own level of comprehension and level of comprehension by older people ($\beta = .09$; $p < .05$) proved to significantly contribute to the predictability of willingness to discuss the messages on the posters with friends.

In the last regression analysis, the difference score of perceived own comprehension and perceived comprehension by older people, appreciation and perceived personal relevance served as predictor

variables. All three predictor variables significantly contributed to the predictability of willingness to discuss the messages on the posters with older people (explained variance in total: $R^2=.07$); in order of importance: perceived personal relevance ($\beta=.21$; $p<.001$), perceived difference between own level of comprehension and level of comprehension by older people ($\beta=-.12$; $p<.01$), and appreciation ($\beta=.11$; $p<.01$). Further inspection of the data, again distinguishing between reactions showing a low level (<3) of perceived own understanding ($N=171$) and reactions showing a high level (≥ 3) of perceived own understanding ($N=465$), revealed the following: in both cases a significant contribution to the predictability of willingness to discuss the messages on the posters with older people was found of perceived personal relevance ($\beta=.16$; $p<.05$; $\beta=.14$; $p<.01$, respectively), and perceived difference between own level of comprehension and level of comprehension by older people ($\beta=-.15$; $p=.05$; $\beta=-.21$; $p<.001$, respectively). The contribution of appreciation was not significant anymore ($p=.21$; $p=.13$, respectively).

Table 2 presents the Pearson correlations between all the dependent variables.

Table 2: Correlations between dependent variables (N=636)

	actu	pou	puf	puo	pou-puf	pou-puo	app	ppr	wdf	wdo
actu	1	.26**	.15**	.07	.10**	.14**	.12**	.24**	.18**	.04
pou		1	.39**	.20**	.54**	.61**	.27**	.39**	.32**	.17**
puf			1	.21**	-.56**	.31**	.24**	.24**	.43**	.16**
puo				1	-.01	-.65**	.17**	.17**	.12**	.26**
pou-puf					1	.43**	.03	.13**	-.10*	.01
pou-puo						1	.07	.16**	.15**	-.08*
app							1	.18**	.17**	.14**
ppr								1	.31**	.21**
wdf									1	.24**
wdo										1

* Correlation significant at the .05 level

** Correlation significant at the .01 level

actu	actual understanding
pou	perceived own understanding
puf	perceived understanding by friends
puo	perceived understanding by older people
pou-puf	perceived own understanding minus perceived understanding by friends
pou-puo	perceived own understanding minus perceived understanding by older people
app	appreciation
ppr	perceived personal relevance
wdf	willingness to discuss messages with friends
wdo	willingness to discuss messages with older people

DISCUSSION AND CONCLUSIONS

In this study, verbal rhetorical figures in health messages proved to negatively affect (actual and perceived) comprehension by South African adolescents. Verbal rhetorical figures also negatively affected the adolescents' willingness to discuss the messages with friends. Adding visual rhetorical figures did not prove to have any positive main effect. In interaction with the absence of verbal rhetorical figures, it was the absence of visual rhetorical figures that proved to positively influence willingness to discuss the messages with older people.

The differences in effect between verbal and visual rhetorical figures are likely caused by the fact that – as in most multimodal health messages – the main share of the messages in this study was carried by the verbal part. In the literal poster versions the verbal part explicitly expressed the basic message, while the visual element merely illustrated the topic. The outcome that the messages with verbal rhetoric proved to be less comprehensible with regard to both actual understanding and perceived own understanding than messages without verbal rhetoric, may partly be attributed to the low literacy level of the participants in the study, as reflected by the generally low level of actual understanding of all messages presented. The learners, who all had English as a second or third language, may have experienced difficulty in understanding the messages presented in English, and this could have been exacerbated when they were presented with non-literal verbal rhetoric.

As explained above, each verbal rhetorical figure (*Abuse booze, you lose*, for instance) combined a trope (a metaphor) and a scheme (a rhyme). It is difficult to decide to what extent the effects of the resulting rhetorical figures were caused by the cryptic nature of the trope, or by the scheme that was used. A future study could investigate the separate effects of using verbal tropes and using verbal schemes in health messages.

This study also revealed that learners preferably want to talk about rhetorical messages which they think their conversation partners (be they friends or older people) understand, and which they feel are relevant for their own situation. Hence, no support was found for loveLife's assumption that presenting puzzling messages to 12–17 year-olds would provoke them into discussing HIV/AIDS and sex with their peers and with older people.

No support was found either for 'showing off' or 'group identity' behaviour, as suggested in Hoeken et al. (2009). There was no indication that young learners' willingness to discuss HIV/AIDS messages in posters with their friends is higher if they think that they themselves understand the message while their friends do not, or if they think that they themselves and their friends understand the message while older people do not. Had the 'showing off' assumption on the part of Hoeken et al. (ibid.) been correct, then a positive contribution would have been found of perceived own comprehension, and a concurrent negative contribution of perceived comprehension of friends. Had the 'group identity' assumption been correct, then a positive contribution of perceived own comprehension would have been found, combined with a positive contribution of perceived

comprehension of friends and a negative contribution of perceived comprehension of older people. However, neither the first, nor the second pattern of prediction was found in this study.

Another outcome, perhaps providing even more support for the assumptions in Hoeken et al. (ibid.) would have been found if the perceived difference between the respondents' own comprehension and that of their friends had positively contributed to the learners' willingness to discuss. The opposite proved to be the case, however. Although the correlation with willingness to discuss with friends was low ($r = -.10$; see Table 2), the perceived difference between own comprehension and comprehension by friends proved to negatively affect the willingness to discuss, both when perceived own comprehension was low and when perceived own comprehension was high. If anything, it would appear that the more young learners believe their friends will understand a cryptic health message better than they do themselves, the more willing they are to engage in conversations with these friends. This outcome suggests an inquisitive rather than a bragging attitude in the learners when it comes to communicating with peers about what may be puzzling them. The same suggestion arises from the outcome that there is a low but significant negative correlation between the willingness to discuss the messages on the posters with older people, and the perceived difference between own level of comprehension and level of comprehension by older people ($r = -.08$; see Table 2): the learners' wish to learn from their conversation partners appears to be stronger than a possible wish to impress them. It should be noted, however, that the regression analyses that were performed yielded only modest percentages of explained variance in willingness to discuss the messages both with friends and with older people. Obviously, factors other than the ones included in this study could also have had an influence. Further research may provide more insight on this issue.

An unexpected result was that the inclusion of rhetorical figures decreased the scores on perceived personal relevance, although no changes were made to the topic. This may have been the result of the way in which we measured personal relevance. The researchers did not ask the respondents to rate the relevance of the themes presented to them (i.e., sharing partners and HIV/AIDS, alcohol abuse and HIV/AIDS etc.). Instead, we asked them to rate the relevance of the poster version they had just been presented with. Essentially, what they rated was the relevance of what they thought was the topic of the posters. It seems reasonable to assume that, once a respondent thought she did not understand the message, she felt the message was not as relevant to her, simply because of her lack of understanding.

Obviously, the methodology used in this study does not allow the researchers to draw final conclusions about how (perceived) comprehension affects actual conversation behaviour. In the present study, no real conversations were observed. It is only the intentions for discussions which were measured, and intentions do not always result in behaviour. In a follow-up experiment which is currently being conducted, the central question is how posters, with and without various rhetorical figures, affect actual conversations in the intended audience. Despite its limitations, the present

study provided some insight into the relationship between those features of media messages which promote possible health-related, interpersonal discussions.

The present study emphasises the role of perceived mutual comprehension of health messages, as well as the relevance of those messages, as necessary conditions for stimulating conversations. The designers of health campaigns targeted at populations such as the one researched in this study, may be advised that their messages should first of all be perspicuous and relevant. While there may be a shift towards using strategies that are creative and new in a bid to achieve effective communication, the use of puzzling rhetorical figures, as promoted by health promotion organisations such as loveLife and others, may be a risky design strategy.

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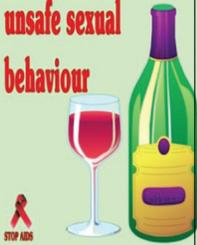
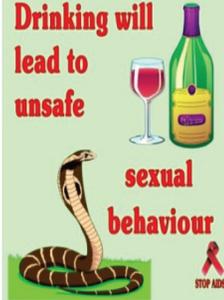
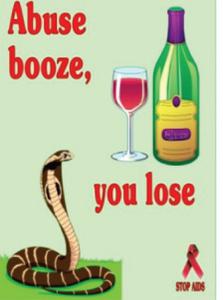
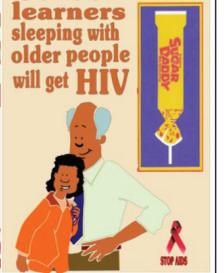
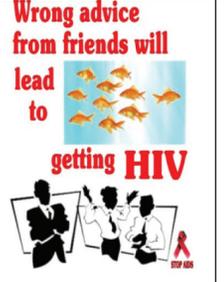
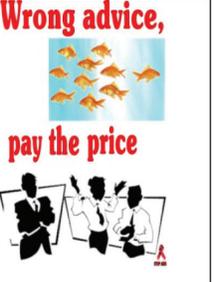
REFERENCES

- Chatterjee, J.S., A. Bhanot, L.B. Frank, S.T. Murphy, and G. Power. 2009. The importance of interpersonal discussion and self-efficacy in knowledge, attitude and practice models. *International Journal of Communication* 3(2): 607–634.
- Delate, R. 2001. The struggle for meaning: A semiotic analysis of interpretations of the loveLife 'His & Hers' billboards campaign. Honours thesis, University of KwaZulu-Natal, South Africa. http://www.cadre.org.za/files/LL_billboard_eval.pdf (accessed August 13, 2012).
- Diamontopoulos, A., M. Sarstedt, C. Fuchs, P. Wolczynski, and S. Kaiser. 2012. Guidelines for choosing between multi-item and single item scales for constructive measurement: A predictive validity perspective. *Journal of the Academy of Marketing Science* 40(3): 437–449.
- Dunlop, S.M., Y. Kashima, and M. Wakefield. 2010. Predictors and consequences of conversations about health promoting media messages. *Communication Monographs* 77(4): 518–539.
- Durkin, S. and M. Wakefield. 2006. Maximising the impact of emotive anti-tobacco advertising: Effects of interpersonal discussion and program placement. *Social Marketing Quarterly* 12(3): 3–14.
- Helme, D.W., S.M. Noar, S. Allard, R.S. Zimmerman, P. Palmgreen and K.J. McClanahan. 2011. In-depth investigation of interpersonal discussions in response to a safer sex mass media campaign. *Health Communication* 26(4): 366–378.
- Hoeken, H., P. Swanepoel, E. Saal and C. Jansen. 2009. Using message form to stimulate conversations: The case of tropes. *Communication Theory* 19(1): 49–65.
- Holleman, E. 2005. loveLife gets attitude. <http://www.mg.co.za/article/2005-01-18-lovelife-gets-attitude> (accessed August 13, 2012).

- Hwang, Y. 2012. Social diffusion of campaign effects: Campaign-generated interpersonal communication as a mediator of anti-tobacco campaign effects. *Communication Research* 39: 120–141. DOI: 10.1177/0093650210389029.
- Jansen, C. and I. Janssen. 2010. Talk about it: The effects of cryptic HIV/AIDS billboards. *Communicatio* 36(1): 130–141.
- Jansen, C., M. van Nistelrooij, K. Olislagers, M. van Sambeek, and L. de Stadler. 2010. A fire station in your body: Metaphors in educational texts on HIV/AIDS. *Southern African Linguistics and Applied Language Studies* 28(2): 133–139.
- Johnson, S., L. Kincaid, S. Laurence, F. Chikwava, R. Delate, and L. Mahlasela. 2010. *Second National HIV Communication Survey 2009*. Pretoria: JHHESA.
- Louw, P., K. Peltzer, and W. Chirinda. 2012. Correlates of HIV risk reduction self-efficacy among youth in South Africa. *The Scientific World Journal*: 1–8.
- Lubinga, E. and C. Jansen. 2011. 'No 'til we know' fela ba a tseba naa? The influence of the language of communication on the reception of HIV/AIDS messages among young South Africans. *Communicatio* 37(3): 466–481.
- Lubinga, E., M. Schulze, C. Jansen, and A. Maes. 2010. HIV/AIDS messages as a spur for conversation among young South Africans? *African Journal of AIDS Research* 9(2): 175–185.
- Maes, A. and J. Schilperoord. 2008. Classifying visual rhetoric: Conceptual and structural heuristics. In *Go figure: New directions in advertising rhetoric*, ed. B.J. Phillips and E.F. McQuarrie, 227–257. Armonk, NY and London: M.E. Sharpe.
- McQuarrie, E.F. and D.G. Mick. 1996. Figures of rhetoric in advertising language. *Journal of Consumer Research* 22(4): 424–438.
- McQuarrie, E.F. and D.G. Mick. 1999. Visual rhetoric in advertising: Text-interpretive, experimental and reader-response analyses. *Journal of Consumer Research* 26(1): 37–54.
- Ojo, O.A. and R.W. de Lange. 2011. Comprehension of HIV/AIDS messages in Lesotho: A case study of loveLife outdoor media campaigns. *Communicare* 30(1): 21–46.
- Parker, W. 2006. Claims and realities in programme evaluation: Reflections on loveLife South Africa. Proceedings of the XVI International AIDS Conference, Toronto, Canada, August. <http://www.cadre.org.za/page/1/4/14/35> (accessed August 13, 2012).
- Pettifor, A.E., C. MacPhail, S. Bertozzi, and R.V. Rees. 2012. Challenge of evaluating a national HIV prevention programme: The case of loveLife, South Africa. *Sexually Transmitted Infections* 83(1): 70–74.
- Petty, R.E. and J.T. Cacioppo. 1986. The elaboration likelihood model of persuasion. In *Advances in experimental social psychology*, ed. L. Berkowitz, 123–205. San Diego, CA: Academic Press.
- Phillips, B.J. 2000. The impact of verbal anchoring on consumer response to image ads. *Journal of Advertising* 29(1): 15–20.
- Shisana, O., T. Rehle, L.C. Simbayi, K. Zuma, S. Jooste, V. Pillay-van Wyk, and the SABSSM Implementation Team. 2009. *South African National HIV Prevalence, HIV Incidence, Behaviour and Communication Survey: A turning tide among teenagers?* Cape Town: HSRC Press.
- Snyder, L.B., M.A. Hamilton, E.W. Mitchell, J. Kiwanuka-Tondo, F. Fleming-Milici, and D. Proctor. 2004. A meta-analysis of the effect of mediated health communication campaigns on behaviour change in the United States. *Journal of Health Communication* 9(1): 71–96.
- Sopory, P. and J. Dillard. 2002. The persuasive effects of metaphor: A meta-analysis. *Human Communication Research* 28(3): 382–419.

- Southwell, B.G. and M.C. Yzer. 2008. The roles of interpersonal communication in mass media campaigns. *Communication Yearbook* 31: 420–462.
- Steen, G. 2008. The paradox of metaphor: Why we need a three-dimensional model of metaphor. *Metaphor and Symbol* 23(4): 213–241.
- Tanaka, K. 1992. The pun in advertising. *Lingua* 87(1/2): 91–102.
- Tanaka, K. 1994. *Advertising language: A pragmatic approach to advertisements in Britain and Japan*. London: Routledge.
- Thomas, K. 2004. A better life for some: The loveLife campaign and HIV/AIDS in South Africa. *Agenda* 62: 29–35.
- Van den Putte, B., M. Yzer, B.G. Southwell, G. de Bruijn, and M.C. Willemsen. 2011. Interpersonal communication as an indirect pathway for the effect of antismoking media content on smoking cessation. *Journal of Health Communication* 16(6): 470–485.
- Van Enschoot, R., H. Hoeken, and M. van Mulken. 2008. Rhetoric in advertising: Attitudes towards verbo-pictorial rhetorical figures. *Information Design Journal* 16(1): 35–45.
- Zisser, A. and D. Francis. 2006. Youth have a new attitude on AIDS, but are they talking about it? *African Journal of AIDS Research* 5(2): 189–196.

Appendix 1: Posters

	- verbal metaphor - visual metaphor	+ verbal metaphor - visual metaphor	- verbal metaphor + visual metaphor	+ verbal metaphor + visual metaphor
alcohol abuse	<p>Drinking will lead to unsafe sexual behaviour</p>  <p>STOP AIDS</p>	<p>Abuse booze, you lose</p>  <p>STOP AIDS</p>	<p>Drinking will lead to unsafe sexual behaviour</p>  <p>STOP AIDS</p>	<p>Abuse booze, you lose</p>  <p>STOP AIDS</p>
intergenerational relationships	<p>School learners sleeping with older people will get HIV</p>  <p>STOP AIDS</p>	<p>Chasing wealth, watch your health</p>  <p>STOP AIDS</p>	<p>School learners sleeping with older people will get HIV</p>  <p>STOP AIDS</p>	<p>Chasing wealth, watch your health</p>  <p>STOP AIDS</p>
multiple partners	<p>Having many sexual partners causes HIV/AIDS</p>  <p>STOP AIDS</p>	<p>If you care, do not share</p>  <p>STOP AIDS</p>	<p>Having many sexual partners causes HIV/AIDS</p>  <p>STOP AIDS</p>	<p>If you care, do not share</p>  <p>STOP AIDS</p>
peer pressure	<p>Wrong advice from friends will lead to getting HIV</p>  <p>STOP AIDS</p>	<p>Wrong advice, pay the price</p>  <p>STOP AIDS</p>	<p>Wrong advice from friends will lead to getting HIV</p>  <p>STOP AIDS</p>	<p>Wrong advice, pay the price</p>  <p>STOP AIDS</p>

Appendix 2: Mean scores and standard deviations for all variables measured (minimum 1; maximum 4)

	- verbal metaphor - visual metaphor	+ verbal metaphor - visual metaphor	- verbal metaphor + visual metaphor	+ verbal metaphor + visual metaphor	all versions
alcohol abuse	N=47	N=45	N=32	N=35	N=159
	actu 2.22 (1.04)	actu 1.69 (0.79)	actu 2.21 (1.00)	actu 1.60 (0.68)	actu 1.93 (0.93)
	pou 3.13 (1.15)	pou 3.02 (1.20)	pou 3.47 (0.95)	pou 2.89 (1.18)	pou 3.11 (1.14)
	puf 3.06 (1.09)	puf 2.80 (1.20)	puf 3.38 (0.83)	puf 2.77 (1.21)	puf 2.99 (1.12)
	puo 2.74 (1.29)	puo 2.80 (1.25)	puo 3.03 (1.03)	puo 3.00 (1.19)	puo 2.87 (1.20)
	app 2.38 (1.38)	app 2.00 (1.26)	app 2.91 (1.38)	app 1.83 (1.20)	app 2.26 (1.35)
	ppr 3.47 (1.06)	ppr 3.62 (0.94)	ppr 3.84 (0.51)	ppr 3.57 (1.01)	ppr 3.61 (0.93)
	wdf 2.87 (1.26)	wdf 3.31 (0.95)	wdf 3.29 (1.08)	wdf 3.09 (1.15)	wdf 3.13 (1.13)
wdo 3.13 (1.11)	wdo 2.93 (1.27)	wdo 2.63 (1.04)	wdo 2.90 (1.25)	wdo 2.92 (1.18)	
intergenerational relationships	N=33	N= 38	N= 44	N= 43	N=158
	actu 2.63 (0.94)	actu 1.73 (0.77)	actu 2.81 (0.98)	actu 1.83 (0.93)	actu 2.25 (1.02)
	pou 3.61 (0.75)	pou 2.79 (1.17)	pou 3.14 (1.13)	pou 3.23 (0.90)	pou 3.18 (1.04)
	puf 2.94 (1.09)	puf 2.61 (1.22)	puf 2.89 (1.24)	puf 2.82 (1.13)	puf 2.82 (1.17)
	puo 2.90 (1.13)	puo 2.89 (1.27)	puo 2.75 (1.18)	puo 3.023 (1.14)	puo 2.89 (1.18)
	app 2.82 (1.29)	app 2.76 (1.30)	app 2.39 (1.47)	app 2.63 (1.29)	app 2.63 (1.34)
	ppr 3.85 (0.57)	ppr 3.66 (0.67)	ppr 3.73 (0.76)	ppr 3.70 (0.80)	ppr 3.73 (0.71)
	wdf 3.36 (1.14)	wdf 3.16 (1.21)	wdf 3.34 (1.10)	wdf 3.19 (1.12)	wdf 3.26 (1.13)
wdo 2.90 (1.10)	wdo 2.63 (1.15)	wdo 2.61 (1.20)	wdo 2.91 (1.13)	wdo 2.76 (1.15)	
multiple partners	N=35	N=41	N= 43	N= 40	N=159
	actu 2.76 (1.11)	actu 1.84 (0.78)	actu 3.06 (1.00)	actu 1.73 (0.79)	actu 2.34 (1.08)
	pou 3.54 (0.92)	pou 2.71 (1.31)	pou 3.40 (1.00)	pou 2.75 (1.19)	pou 3.09 (1.17)
	puf 3.34 (1.00)	puf 2.78 (1.08)	puf 3.28 (0.96)	puf 2.92 (1.00)	puf 3.07 (1.03)
	puo 2.80 (1.37)	puo 2.73 (1.18)	puo 3.19 (1.03)	puo 3.15 (1.08)	puo 2.97 (1.17)
	app 2.43 (1.42)	app 2.49 (1.16)	app 2.83 (1.34)	app 2.83 (1.30)	app 2.65 (1.31)
	ppr 3.91 (0.28)	ppr 3.59 (0.97)	ppr 3.89 (0.50)	ppr 3.53 (1.00)	ppr 3.72 (0.77)
	wdf 5.43 (0.78)	wdf 3.29 (1.05)	wdf 3.44 (0.98)	wdf 3.15 (1.14)	wdf 3.35 (1.01)
wdo 2.49 (1.20)	wdo 2.69 (1.13)	wdo 2.70 (1.17)	wdo 2.75 (1.17)	wdo 2.62 (1.15)	
peer pressure	N=44	N=35	N= 40	N= 41	N=160
	actu 2.34 (0.96)	actu 2.01 (0.94)	actu 2.09 (0.91)	actu 2.13 (0.94)	actu 2.15 (0.95)
	pou 3.30 (0.98)	pou 2.66 (1.16)	pou 3.32 (1.00)	pou 2.59 (1.16)	pou 2.98 (1.12)
	puf 2.89 (1.15)	puf 2.60 (1.12)	puf 2.90 (1.17)	puf 2.46 (1.19)	puf 2.72 (1.16)
	puo 3.00 (1.12)	puo 3.09 (1.15)	puo 3.05 (1.15)	puo 2.89 (1.19)	puo 3.00 (1.14)
	app 2.73 (1.26)	app 2.83 (1.22)	app 2.53 (1.38)	app 2.46 (1.31)	app 2.63 (1.29)
	ppr 3.82 (0.69)	ppr 3.54 (1.01)	ppr 3.65 (0.80)	ppr 3.53 (0.92)	ppr 3.64 (0.86)
	wdf 3.25 (1.08)	wdf 2.89 (1.25)	wdf 3.35 (1.08)	wdf 2.63 (1.34)	wdf 3.04 (1.21)
wdo 3.05 (1.16)	wdo 2.69 (1.13)	wdo 3.00 (1.22)	wdo 2.80 (1.23)	wdo 2.89 (1.18)	
all themes	N=159	N=159	N=159	N=159	N=636
	actu 2.46 (1.03)	actu 1.81 (0.82)	actu 2.57	actu 1.83 (0.87)	actu 2.17 (1.01)
	pou 3.36 (0.99)	pou 2.80 (1.21)	(1.05)	pou 2.87 (1.13)	pou 3.09 (1.12)
	puf 3.05 (1.09)	puf 2.70 (1.15)	pou 3.32 (1.03)	puf 2.75 (1.14)	puf 2.90 (1.13)
	puo 2.86 (1.22)	puo 2.87 (1.21)	puf 3.09 (1.09)	puo 3.01 (1.14)	puo 2.93 (1.17)
	app 2.58 (1.34)	app 2.49 (1.27)	puo 3.00 (1.11)	app 2.46 (1.31)	app 2.54 (1.33)
	ppr 3.74 (0.76)	ppr 3.60 (0.90)	app 2.65 (1.40)	ppr 3.58 (0.92)	ppr 3.68 (0.82)
	wdf 3.23 (1.11)	wdf 3.18 (1.11)	ppr 3.77 (0.66)	wdf 3.01 (1.20)	wdf 3.19 (1.12)
wdo 2.92 (1.16)	wdo 2.70 (1.17)	wdf 3.36 (1.05)	wdo 2.84 (1.18)	wdo 2.80 (1.17)	
		wdo 2.74 (1.17)			

actu actual understanding
 pou perceived own understanding
 puf perceived understanding by friends
 puo perceived understanding by older people
 app appreciation

ppr perceived personal relevance
 wdf willingness to discuss messages with friends
 wdo willingness to discuss messages with older people