

Social representations of HIV/AIDS in five Central European and Eastern European countries: a multidimensional analysis

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Abstract *Cognitive processing models of risky sexual behaviour have proliferated in the two decades since the first reporting of HIV/AIDS, but far less attention has been paid to individual and group representations of the epidemic and the relationship between these representations and reported sexual behaviours. In this study, 494 business people and medics from Estonia, Georgia, Hungary, Poland and Russia sorted free associations around HIV/AIDS in a matrix completion task. Exploratory factor and multidimensional scaling analyses revealed two main dimensions (labelled 'Sex' and 'Deadly disease'), with significant cultural and gender variations along both dimension scores. Possible explanations for these results are discussed in the light of growing concerns over the spread of the epidemic in this region.*

Introduction

Although a relatively recent epidemic in Central and Eastern Europe, HIV infection in this region is now increasing at a faster rate than anywhere else in the world (UNAIDS, 2002b). In most of these countries transmission has been primarily through injecting and the sharing of needles and syringes (Donoghoe, 2003; Hamers & Downs, 2003), with an estimated 1% of the population of Eastern Europe and Central Asia injecting illicit drugs (UNAIDS, 2002b), although the growth of sex work and casual sexual encounters (Borisenko *et al.*, 1999; Kalichman, 1998), the deterioration of the health care system (Atlanti *et al.*, 2000) and the increasing mixing of populations due to civil unrest in some regions (Borisenko *et al.*, 1999; Parker *et al.*, 2000; Rhodes *et al.*, 1999) have contributed towards differential rates of infection and different forms of transmission across different nations. As a result, in some countries (such as Hungary, where infection rates have largely stabilized) HIV transmission has been primarily through homosexual contacts between men (UNAIDS, 2002b), whilst in

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multicultural Estonia illicit drug use and subsequent HIV infection have been largely limited to the Russian-speaking minority (Estonian Drug Monitoring Centre, 2003). As yet, however, there has been little empirical research into the social and cultural forces that might underlie cultural differences in transmission routes and subsequent infection.

Most of the existing psychological research into HIV/AIDS has focused on cognitive explanations which link individual knowledge, attitudes and beliefs to sexual practices (Abrahams *et al.*, 1998; Campbell, 2001; Sheeran *et al.*, 1999). Although this work has been valuable in providing important insights into the individual-level factors underlying safer sexual behaviours (Albarracín *et al.*, 2001; Sheeran *et al.*, 1999), even those working from within this cognitive paradigm have called for a wider understanding of the social relations and social environment in which sexual activity takes place (Fife-Schaw, 1997; Sheeran *et al.*, 1999). What is needed is an understanding of the 'lay', 'common sense' perspectives taken by different individuals when they try to understand this complex epidemic—and the relationship between these perspectives and an individual's risk-taking behaviour (Campbell, 2001). Such a study can be a vital aid to understanding the normative factors that influence socially complex behaviours, such as the carrying and use of condoms, and can help illuminate the situational barriers that might prevent an intention from turning into actual action (Fife-Schaw, 1997; Sheeran *et al.*, 1999). In doing so, it can also illustrate how the HIV/AIDS epidemic can be viewed as part of wider concerns over the costs of 'Western' sexual practices in post-Communist Europe (Headley, 1998; Rivkin-Fish, 1999), concerns which are themselves part of a broader debate on liberalization and social modernization across Europe (Rosenbrock *et al.*, 2000).

The theory of social representations

One important theoretical approach to understanding 'lay perspectives' on sexual disease can be found in the theory of social representations (Moscovici, 1984). Social representations can be seen as a collection of different folk theories, 'common sense' and everyday knowledge that serve important social functions in guiding and justifying actions, maintaining social identity and allowing for communication between group members (Páez *et al.*, 1991; Wagner, 1995). Individuals faced with a complex and frightening new scientific concept (such as HIV/AIDS) will seek to integrate this new concept into their everyday cognitions, lifestyles and behaviours (Farr, 1984). Thus, for example, in Breakwell's (1993, p. 195) work on riskiness and sexual activity, HIV risk-taking was positively correlated with individual representations of HIV that diminish the risks attached. In her study, sexual risk-takers were more likely to believe that HIV could be cured, and that someone with HIV/AIDS could be identified simply by sight. At the same time, social representations are negotiated and spread through interactions with group members (Bergmann, 1999; Moscovici & Perez, 1997), with group members trying to fit their understanding of the disease within pre-existing prejudices and discriminations (Joffe, 1996; Kitzinger, 1995). This can lead to a 'moral panic', where individuals or even whole societies seek to psychologically distance themselves from particular groups (Lear, 1995). As a consequence, governments may discriminate against those infected or 'outsiders' suspected of carrying the virus (e.g. through the introduction of compulsory HIV tests for foreigners entering the country), whilst particular groups may target 'out-groups' suspected of 'risky' or 'immoral' behaviours (see, for example, Joffe, 1996, on hostility towards homosexuals).

The present study

The research reported here focuses on representations of HIV/AIDS and their relationship to sexual behaviour in five Central European and Eastern European countries: Estonia, Georgia, Hungary, Poland and Russia. These countries vary not only in the spread of the epidemic in each nation but also in political structure, influence and nature of the religion(s) practised and level of economic investment and growth—all factors previously identified as likely to have important implications for both the spread of infection and the extent to which particular representations may be accepted or even propagated (see, for example, Danziger (1994) on the role of religion in representations of out-groups and HIV/AIDS in Poland). Estonia and Georgia were both parts of the Former Soviet Union and until recently have reported generally low rates of HIV infection (less than 50 cases of AIDS had been reported in both countries at the beginning of our study, in 1998).¹ In Hungary and Poland, rates of infection are relatively low and stable (UNAIDS, 2002b), with little evidence of a marked increase in AIDS incidence (Poland: 794 AIDS cases; Hungary: 328 AIDS cases at the start of this research). In contrast, the Russian Federation has seen a marked escalation in the HIV epidemic, associated primarily with injecting drug use and the sharing of needles and syringes. Here, new infections increased almost 20-fold between 1998 and mid-2002, with a conservative estimate of at least 700,000 adults and children living with HIV/AIDS at the end of 2001 (UNAIDS, 2002b).

Whilst the increase in HIV infection in this region has been largely associated with illicit drug use amongst young people (Hamers & Downs, 2003), in the present study we were particularly interested in exploring the social representations of two, highly influential professional groups: business people and medical professionals. Business people were selected as an economically significant group whose mobility, lifestyle and attitudes may make them likely to engage in particular, higher risk activities, and here we focus on risk associated with the sexual practice of these professional people (Barnett *et al.*, 2000). Social stereotypes influence health care professionals' commitment to treatment and prevention of infection (Echebarria & Páez, 1989; Markova & Wilkie, 1987; Morin *et al.*, 1996) and health care professionals were chosen as a group whose representations of the epidemic were likely to be highly influential in these transient societies (Nascimento-Schulze *et al.*, 1995; Rivkin-Fish, 1999). Both the groups studied in this study were raised and educated during the Soviet period, during which information about the sexual disease epidemic was couched in strong 'moral' overtones. Such an education is likely to have contributed to the low levels of knowledge about the virus and the low condom use regularly reported in this region (e.g. Amirkhanian *et al.*, 2001; Dehne *et al.*, 2000), significant vulnerability factors that may feed the emerging sexual transmission of the epidemic in this region (Hamers & Downs, 2003).

Social representations research has typically operated on a number of levels of assessment and employed a diversity of methodologies (Bergmann, 1999; Breakwell & Canter, 1993; Doise *et al.*, 1993; Wagner, 1995). Given the lack of previous research into representations of HIV/AIDS in Central/Eastern Europe, the present study primarily uses exploratory statistical techniques to conduct two sets of analyses. First, the structure and content of representations of HIV/AIDS are explored using factor analysis techniques to analyze sample and country differences in free associations around the word 'AIDS'. Second, a multidimensional scaling analysis (MDS) is conducted, which allows for the verification of the principal dimensions of representation and for the analysis of the relationship between theoretically relevant stimulus objects and dimension scores.

Method

Participants

Respondents were drawn from three professional groups: business people (51%), nurses (20%) and doctors (29%). All respondents were aged between 25 and 57 (mean age 33.2, $SD = 7.1$). Table 1 gives a breakdown of participants by country and occupational group: 511 participants completed the first stage of the study, 494 the second stage, with 30% of the respondents participating in both stages of the data collection. All participants were taken from the majority population in each country (i.e. Russian nationals in Russia, Estonian nationals in Estonia, etc.).

Participants were chosen to be as representative as possible of these professional groups. Respondents were recruited primarily during advanced professional training courses at medical schools or during business training courses taught by the research team or their colleagues, with data collection taking place during 1998 and 1999. Eighty-six per cent of those contacted agreed to participate. Participants overall were generally well educated, with 62% having completed university, although only 38% of nurses had continued beyond the 'special secondary' level of education. Polish respondents were overwhelmingly Catholic (93% of the sample) and a further 53% of Hungarian respondents were also Catholic. The Orthodox Church was strongly represented in Georgia (96% of respondents were Georgian Orthodox) and Russia (75% of participants were Russian Orthodox), whereas 71% of Estonian respondents reported that they were 'not religious'.

Procedure

Data collection was in two stages: a free association task and a matrix task.

Stage 1: Free associations. Free association techniques are particularly valuable when assessing the most salient and relevant associations with a concept (Mannetti & Tanucci, 1993). Our first group of respondents were instructed to write 'everything that comes into your mind when I say the word AIDS' (Doise *et al.*, 1993; Mannetti & Tanucci, 1993). Respondents were asked to write as many responses as possible and to be unrestricted in their associations. Two judges examined a full and translated list of these associations and worked independently to aggregate semantically similar words (Di Giacomo, 1980), identifying the most frequently listed words from across the sample to use for our analyses (Kappa for inter-rater agreement = 0.90).

Stage 2: Matrix preparation. Eleven words were selected as the most frequently occurring terms across the sample (see Table 2). Each of these words, plus the term 'HIV/AIDS', was then

Table 1. Numbers of respondents by country and occupation

	Estonia	Georgia	Hungary	Poland	Russia	Totals
Stage 1						
Business	54	52	50	50	50	256
Health professionals	50	52	50	50	53	255
Stage 2						
Business	48	51	50	51	51	251
Health professionals	43	51	50	49	50	243

Table 2. Factor loadings of the stimulus words (principal component analysis, varimax rotation) and number of respondents making each association with the word 'AIDS'

	Factor 1 'Deadly disease'	Factor 2 'Sex'	Number of free associations
Disease	0.802	-0.014	270
Death	0.779	-0.178	172
Fear	0.745	-0.079	106
Blood	0.708	0.040	160
Illicit drugs	0.675	0.006	160
AIDS	0.572	0.243	
Casual sex	0.007	0.823	41
Condoms	-0.131	0.798	120
Prostitute	0.007	0.770	66
Sex	-0.234	0.765	117
Homosexuality	0.227	0.516	148
Africa	0.229	-0.157	66

Note. Loadings above 0.30 are shown in bold type.

written on a separate card. For the matrix task, each respondent was presented with one card (here termed the 'standard' e.g. blood) and asked to select the word from the remaining 11 most similar to this standard (e.g. prostitute). Once this word was removed, the respondent was asked to select the next word most similar to the standard and this was repeated until all 11 compared words were ordered according to their similarity with the standard. These similarities were then entered onto a 12 (row) \times 12 (column) matrix, one for each respondent, and then entered into the complete data set. In each 12 \times 12 matrix, the standard words were given in rows and the remaining 11 words in columns. For instance, the first row in each matrix reflected a respondent's order of the 11 words (from 0 to 11) according to their similarity with the first standard word (AIDS), the second row in the matrix reflected a respondent's order of the 11 words according to their similarity with the second standard word (Africa) and so on.

Results

Free associations

Our 511 respondents produced a total of 1,480 responses. Table 2 includes a list of the 11 most frequently occurring words, with the number of participants who made each association. As can be seen from the table, participants were most likely to associate AIDS with 'Disease', 'Death', 'Blood' and 'Illicit drugs'.

Factor analysis

The first analysis focused on the overall structure of our data. The data matrix of 12 (rows) by 6,036 (cases) was transformed for each respondent so that rows were turned into columns and vice versa. As a result, in every new 12 (row) \times 12 (column) matrix, the standard words were given in columns and the remaining 11 words in rows. A principal component analysis followed by varimax rotation was performed on this data set. A scree-test suggested a two-factor solution that explained 51.2% of the total variance. The two-factor solution was nearly

simple: all words (except Africa) had significant loadings (above 0.30) on only one factor. The words and factor loadings are shown in Table 2.

The first factor was termed 'Deadly disease' and the second 'Sex'. AIDS, Blood, Death, Disease, Illicit drugs and Fear all had high loadings on this first factor. Casual sex, Condom, Homosexuality, Prostitute and Sex had their primary loadings on the second factor. Figure 1 represents these factor positions pictorially. As can be seen, Africa stands clearly apart from the other words and thereby does not appear to be meaningfully related to either AIDS or any other term used in this study. AIDS, however, appears to be more closely related to concepts such as Blood, Illicit drugs, Disease, Fear and Death and, more remotely, to Homosexuality.

Next, the analysis considered whether or not the same structure of 12 stimulus words would apply to all five countries involved in the study. For that purpose, a principal component analysis was performed separately for each country. Generally speaking, in all five samples the same two factors—'Deadly disease' and 'Sex'—emerged. However, there were some notable differences in factor loadings across the five countries. The word AIDS, for instance, had low secondary loadings on the second factor ('Sex') in the Estonian (0.33) and Georgian (0.31) samples; whereas Africa loaded relatively highly on Factor 1 ('Deadly disease') in the Hungarian (0.32), Polish (0.36) and Russian (0.40) samples. In the Georgian sample, the word Homosexuality had equally moderate loadings on both factors (0.40 and 0.38, respectively).

To examine how well the factor structure in five samples matches the shared, general factor structure (see Figure 1), a series of Procrustes rotations were performed. In such least-squared targeted rotation, the data to be examined are rotated to maximum fit with a hypothesized or established target matrix (see Kallasmaa *et al.*, 2000). In these analyses, the varimax two-factor structures of each country were rotated to maximum similarity with the shared factor matrix ('target') shown in Table 2. Next, factor and variable congruence coefficients were calculated between the target matrix and the five Procrustes-rotated replication matrices. In general, the factor and item congruences were reasonably high in all five samples. The factor congruence coefficients ranged from 0.98 (Russia) to 1.00

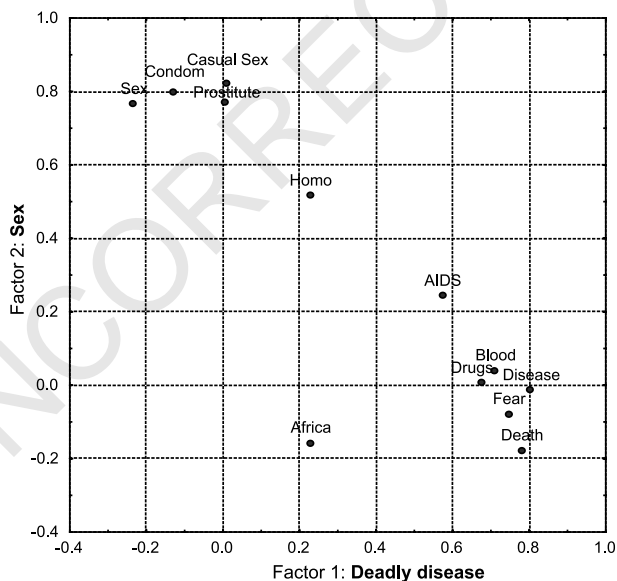


FIG. 1. Plot of the factor loadings for the whole sample (PCA, varimax normalized, two-factor solution).

(Estonia) and all item congruence coefficients (except three) were above 0.98. There was just one main exception in the Russian sample, where the item congruence coefficient for Africa was 0.71. Here, Africa grouped closely with AIDS and other words from the second factor ('Deadly disease').

Multidimensional scaling analysis

The factor analysis was complemented with a multidimensional scaling analysis using the INDSCAL package (Individual Differences Multidimensional Scaling) on SPSS. Such an additional procedure allowed for the verification of the structural dimensions of data, particularly useful when conducting cross-cultural analyses (Leung & Bond, 1989). This technique is particularly valuable for the individual level of analysis, allowing for an examination of both the common 'cognitive space' shared by individuals, based on inter-stimulus proximities and distances, and the 'personal/private' space—a structure of individual differences plotted against the background of shared reference points (Tacq, 1997). This is especially useful when examining the distances between pairs of theoretically relevant stimuli across respondent groups.

Figure 2 shows the derived stimulus configuration for all participants. Parsimony in number of dimensions selected is central to the interpretability of solutions (Purkhardt & Stockdale, 1993). A two-dimensional solution, one on the horizontal axis (dimension 1) and the other on the vertical axis (dimension 2) was seen as optimal for this solution, and levels of stress were acceptable given the numbers of items employed (Wierczorkowska, personal communication, December 1999). Dimension 1 had a mean importance for all subjects of 0.42, and it was 0.31 for dimension 2. Because of the clear overlap between items in the factors and dimensions in the multivariate analyses, we maintained the labels from our factor analysis, labelling dimension 1 'Sex' and dimension 2 'Deadly Disease'. For dimension 1, Homosexuality (loading -1.16), Condoms (-1.14), Sex (-0.92), Casual sex (-0.91) and Prostitute (-0.88) could be contrasted with Africa (1.79), Death (1.17) and Fear (0.87). For dimension 2, Illicit drugs (1.57), Blood (1.38) and Homosexuality (0.96) could be contrasted with Africa (-1.43) and Condoms (-1.09). A 5 (culture) \times 3 (occupational group) \times 2 (gender) MANOVA on the two dimension scores examined cultural, occupational and gender variations in the two dimension scores. On both dimensions there were significant cultural

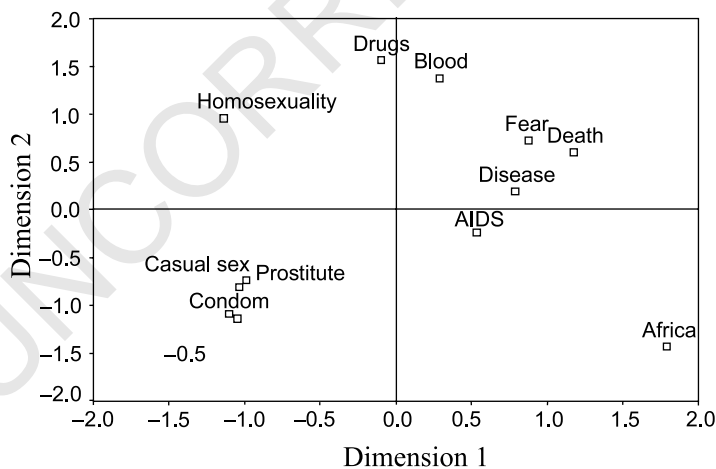


FIG. 2. Shared matrix from the multi-dimensional scaling analysis.

variations ($F_s(4, 466) = 9.69$ and 2.43 , $p < 0.001$ and < 0.05 , for dimensions 1 and 2, respectively) and gender differences ($F_s(1, 466) = 8.40$ and 8.82 , $p < 0.01$, for dimensions 1 and 2, respectively). There were no significant occupational or second- or third-order effects. At the cultural level, the highest country score on dimension 1 ('Sex') was for Poland (0.69), followed by Hungary (0.67), Estonia (0.65), Georgia (0.63) and Russia (0.57). Post-hoc analyses revealed Poland to be significantly higher on dimension 1 than Estonia, Russia or Georgia. Highest on dimension 2 ('Deadly disease') was Estonia (0.57), followed by Georgia (0.55), Russia (0.54), Hungary (0.54) and Poland (0.52). Post-hoc analyses found Estonia to be significantly higher on this dimension than Russia, Hungary and Poland. Female respondents scored significantly higher on dimension 1 (the 'Sex' dimension: 0.62 versus 0.65) and lower on dimension 2 ('Deadly diseases': 0.54 versus 0.57) than their male counterparts ($F_s(1, 466) = 8.38$ and 8.98 , $p < 0.001$, respectively).

To explore specific representations of out-groups, the relationship between pairs of particular associations between stimuli in each country was examined, selecting comparisons on the basis of previous research on out-group stigmatization of those with (or suspected of) HIV infection (Breakwell, 1993; Joffe, 1996; Sontag, 1989). Six comparisons were conducted: (1) AIDS and Drugs, (2) AIDS and Homosexuality, (3) AIDS and Casual sex, (4) AIDS and Africa, (5) Homosexuality and Casual sex, and (6) Condoms and Casual sex. This analysis was conducted adapting an application of Pythagorean theory where the squared distance c is the product of the squared distances between the stimulus word AIDS and each member of the associations being contrasted (Davison, 1992). The proximity between the stimuli words AIDS and Homosexuality, AIDS and Casual sex and Homosexuality and Casual sex was greatest in Georgia (M distances of 1.71, 1.43 and 1.31 respectively, versus complete sample Ms of 2.05, 1.60 and 1.70). The association between AIDS and Drugs, Condoms and Casual sex and AIDS and Africa was closest in Russia (respective Ms of 0.65, 0.05 and 1.38, versus complete sample Ms of 2.00, 0.38 and 1.73).

Discussion

Despite growing concerns about the HIV/AIDS epidemic in Central and Eastern Europe, little research has been conducted into lay representations of the epidemic in this region. The analysis conducted in this paper explored the social representations of HIV/AIDS amongst business people and health professionals in five cultures, analyzing matrix data using two different multivariate techniques. The findings suggest two major factors or dimensions that underlie representations of this epidemic in the countries under discussion, dimensions termed 'Sex' and 'Deadly disease'. Despite relatively high levels of congruency between the five countries on these factors, and between the occupational groups in our sample, notable cultural variations did emerge in scores on the first dimension ('Sex') and in the distances between pairs of stimuli following the multidimensional scaling analysis.

The increase of HIV infection in Eastern Europe can primarily be seen as arising from the sharing of needles and syringes by those using illicit drugs (Donoghoe, 2003; Hamers & Downs, 2003). The professional groups in this study provided mixed evidence concerning the associations they make between illicit drugs and the epidemic. In the free association tasks only a third of respondents (160) mentioned illicit drug use when free-associating with AIDS, a similar number to those who associated homosexuality with AIDS (148). In the MDS analyses, however, it is clear that respondents were at least moderately aware of the association between AIDS, blood and drugs in this region, locating blood and drugs closer than sexual behaviour to disease and AIDS (Figure 2). Notably, this association was strongest in the 'Eastern' European countries of Russia, Georgia and Estonia, where indeed the

relationship between the epidemic spread and injecting drug use is strongest—and weakest in Hungary, where infection through intravenous drug use is comparatively rare (UNAIDS, 2002b).

The multidimensional analyses produced two major factors/dimensions. One dimension groups together casual sexual activity, condoms, prostitution and sexual activity in general and reflects the sexual component of the epidemic. A second dimension emphasizes the disease aspect of the epidemic and the fear associated with this. In the analysis of associations between specific stimulus words, Georgian respondents associated AIDS most closely with homosexuality and casual sexual activity. Páez *et al.* (1991) have suggested a relatively 'conservative' and 'moralizing' representation that sees HIV/AIDS as a disease amongst pariah, fringe social groups, with such a conservative representation strongest amongst the most religious. Notably, over 90% of the samples in Poland and Georgia identified themselves as belonging to a specific religion. In parallel studies conducted in these five nations, Poland and Georgia also scored highest on conservative values (conformity, tradition and security) (Goodwin *et al.*, 2002). In a further series of semi-structured interviews, respondents from these two countries were most likely to see those at risk from contracting HIV/AIDS as belonging to an 'out-group' that included prostitutes, those engaging in casual sexual activity and those that carried condoms (Goodwin *et al.*, 2003). Such conservative representations may have significant implications for safer sexual behaviour (Paez *et al.*, 1991). Older Georgians in particular have been described as holding 'Victorian England' attitudes towards sexuality and have shown a notable reluctance to use condoms (UNAIDS, 2002a). The findings reported here therefore emphasize the need for a community-focused approach that helps address prevailing representations in the light of existing conservative perspectives and religious sensibilities (Danziger, 1994; Delor & Hubert, 2000).

Russian respondents were the least likely to place together words on the second dimension, 'Sex'. This may reflect a relative reluctance to moralize in a society where there has been considerable confusion about sexual relations following the end of Communism in this country, and where the marked eroticization of culture has been accompanied by considerable ambiguity about the rights and wrongs of sexual behaviour (Kon, 1995). At the same time, these Russian respondents demonstrated the greatest proximity between 'Africa' and AIDS, with the analysis of the Russian data showing the strongest loading for Africa on the second dimension, 'Deadly disease'. Such a finding suggests a potential psychological 'distancing' in this country that may allow a sense of detachment from those perceived to be 'at risk'. Such a detachment can have important implications for risk behaviours by encouraging a sense of personal invulnerability and may contribute to a pattern of high-risk behaviour, including illicit injecting drug use and risky sexual practices (Lear, 1995).

Gender differences in these findings might also be partly interpreted in line with cultural variations in values, as well as prevailing concerns about the risk of infection. Women were more likely to group together items that formed the 'conservative' first dimension ('Sex')—echoing gender differences in conservative values (Goodwin *et al.*, 2002)—as well as previous research reporting a closer association between sexual activity and condom use amongst women (Bajos & Marquet, 2000). Gender differences in mean scores on the 'Sex' dimension were highest in Poland, whilst differences in reported sexual activity were greatest in Georgia. These findings are consistent with Bajos and Marquet's (2000) observation that differences in sexual behaviour are likely to be greatest in more traditional cultures. Men were more likely than women to cluster items that emphasize the disease and death aspect of the epidemic. This parallels similar findings in other work in these countries: in this research men were more than four times as likely as women to report that they had had sex with a high-risk partner, more than twice as likely to claim that they used condoms primarily to avoid sexual disease,

and were significantly more likely to worry about being at risk of contracting the disease (Goodwin *et al.*, 2003).

Of course, an analysis of associations between stimulus items is only one possible route into understanding the complex ecological and social factors that underpin sexual behaviour (Barnett *et al.*, 2000; Hobfoll, 1998; McAuliffe, 1996), and the exploratory study reported in this paper raises as many questions as it answers. The major route of transmission in this region is through illicit drug injection using infected needles (Hamers & Downs, 2003) and we are currently exploring the representations of high-risk street children with particular reference to such drug use. Future research should also strive to incorporate a greater range of geographical locations, both urban and rural, and should include other countries at risk from the spread of the epidemic, particularly additional countries from the Former Soviet Union, the main area of infection in this region. Finally, future research needs to include a wider variety of indices and methods, locating emerging findings within the pressing ecological demands currently faced by the residents of this region.

The number of HIV/AIDS cases in Central and Eastern Europe is still not large compared, for example, to Sub-Saharan Africa. As a consequence, it should still be possible to limit the size of the epidemic in this region (Kalichman *et al.*, 2000). However, as Markova (1992) notes, health campaigns rarely integrate scientific and social representational knowledge and in the region under investigation in this study there are few active organized groups of people at risk of HIV/AIDS to help counteract misleading representations of the epidemic. Health professionals in these countries should recognize the role social representations play in future peer- and community-based social interventions, and should actively challenge misleading representations in their efforts to address the rapidly growing epidemic in this region.

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Notes

- [1] HIV/AIDS cases and estimated infection have increased very rapidly in Estonia since the time of this study, with the increase between 2000 and 2001 described by UNAIDS (2002b) as 'extremely alarming'. During 2001, 1,470 new HIV-positive cases were reported, with 89% of these aged under 30, and an estimated 7,700 people were living with HIV/AIDS in Estonia at the end of 2001. AIDS cases have also increased relatively sharply in Georgia since the time of this data collection, with a total of 310 cases registered by the Infectious Diseases, AIDS and Clinical Immunology Research Centre in Tbilisi by June 2002 (UNAIDS, 2002a). In both countries, infection increase can be largely traced to the injection of illegal drugs and needle and syringe sharing.

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