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Measuring Hong Kong Undergraduate Students' Attitudes Towards Transpeople

Sam Winter · Beverley Webster ·
Pui Kei Eleanor Cheung

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Abstract Hill and Willoughby's (*Sex Roles*, 53:531–544, 2005) Genderism and Transphobia Scale (GTS), originally developed in Canada, was examined with a Hong Kong sample. Undergraduate students, 82 female and 121 male (total $n=203$), completed a Chinese version of the instrument. Overall scores and factor structure of the Hong Kong sample were compared with Hill and Willoughby's Canadian data. Gender differences in transphobia were investigated, both in terms of the participants' gender as well as the gender of the gender variant persons to whom GTS items referred. Transphobia was higher in Hong Kong than in Canada. The factor structure for Hong Kong differed from Canada. Five factors were identified (with a gender effect on Factors II and V). They were: I, Anti Sissy Prejudice; II, Anti Trans Violence; III, Trans Unnaturalness; IV, Trans Immorality; and V, Background Genderism. Hong Kong men were more transphobic than women. Gender variance in men was viewed less favourably than in women.

Keywords Transgenderism · Transphobia · Measurement · Hong Kong · GTS

Introduction

This paper reports an exploratory study using the recently published Genderism and Transphobia Scale (GTS; Hill and Willoughby 2005). Data was drawn from 203 under-

graduate students in Hong Kong who completed a Chinese version of the instrument. The aim of the study was to examine the appropriateness of the GTS in a culture other than Canada (where it was originally developed), as well as to examine gender effects (both in terms of the gender of the individual expressing the attitudes, as well as the gender of the individual about whom attitudes were being expressed) upon attitudes. Factor structure was considered of particular importance, as any divergence from that reported by Hill and Willoughby would imply that the fabric of ideas underlying transphobia varies from culture to culture, and that a factor structure identified in one culture can therefore not be assumed for another. Gender differences were also considered important, in view of earlier research indicating gender effects upon attitudes towards sexual and gender minorities (at least in some cultures), as well as the likely practical consequences of any such effects upon the lives of gender variant people.

In this paper we use the word 'transpeople' to refer to several groups of people who engage in gender variant behaviour. They include cross dressers, transgenderists and transsexuals; persons in the last two categories additionally identifying as members of a gender category other than the one in which they were allocated at birth (and therefore being gender *identity* variant). Societal antipathy towards transpeople is a common finding in Western writing on people who are gender variant and/or gender identity variant. It is evident in autobiographies (e.g. Morris 1974, writing in the UK; Rees 1996, in the UK; Green 2004, in the USA), biographical accounts (e.g. May 2005, writing in Australia), commentaries (e.g. Whittle 2002, in the UK), academic research focusing on the trans experience (e.g. Lombardi et al. 2001, in the USA; Whittle et al. 2007, in the UK), and in research which has specifically examined attitudes towards transpeople among family members (e.g.

S. Winter (✉) · B. Webster · P. K. E. Cheung
Faculty of Education, University of Hong Kong,
Pokfulam Road,
Hong Kong S.A.R., China
e-mail: sjwinter@hku.hk

Sandnabba and Ahlberg 1999, in Finland; Wren 2002, in the UK), among medical professionals (e.g. Franzini and Casinelli 1986, in the USA), in the lesbian and gay community (e.g. Weiss 2003, in the USA), among undergraduate students (e.g. Hill and Willoughby 2005, in Canada; Winter et al., under review, in the USA and UK), and in more general populations (e.g. Harvey 2002, in the USA; Landen and Innala 2000, in Sweden; Leitenberg and Slavin 1983, in the USA; Tee and Hegarty 2006, in the UK). The website ‘Remembering Our Dead’, which currently lists around 350 transpeople, most of whom died violent deaths, bears testimony to the extremes to which this antipathy can extend. Many of those listed died in North America and Europe. Antipathetic attitudes and beliefs expressed in regard to transpeople are often dubbed ‘transphobia’ (e.g. Hill and Willoughby 2005; Norton 1997). They are often accompanied by an indifference to or outright rejection of civil and social rights for transpeople. For this reason and others, the term ‘transprejudice’ has recently been advanced as a more appropriate label for the phenomenon (King et al., under review). In this article we use the (for the present) more widely used term ‘transphobia’.

The possible reasons for transphobia are complex. They include (a) religious beliefs (for example, Christian and Islamic texts proscribing cross-dressing); (b) perspectives in orthodox psychiatry which declare many transpeople to be mentally disordered (critiqued by e.g. James 2004; Winter 2007b); (c) commonly held notions that gender is subsidiary to biological sex, and that many transpeople are therefore deceivers and pretenders (critiqued by Bettcher 2007); and (d) psychological perspectives which suggest that gender identity variance is an expression of sexuality [a view recently popularised by Bailey (2003) in regard to transwomen, to the consternation of much of the transcommunity]. As noted by writers such as Moran and Sharpe (2004), attitudes of this sort often arise out of ignorance of what gender variance is and who transpeople are. We would suggest that the ignorance may persist partly because many transpeople seek and achieve social invisibility.

Several of the Western attitudes studies cited above have revealed a gender difference, with men tending to be more transphobic than women (e.g. Hill and Willoughby 2005; Landen and Innala 2000; Leitenberg and Slavin 1983; Wren 2002; Winter et al., under review). These findings echo much of the Western literature on homophobia (e.g. Kite and Whitely’s 1996, meta-analysis of early studies, as well as later work by Hicks and Lee 2006; Klamen et al. 1999; LaMar and Kite 1998; Raja and Stokes 1998; Sharpe 2002; Whitley 2002; and Wright et al. 1999).

Transphobia and homophobia appear to form two aspects of a broader attitudinal and belief system relating to sex and gender. Homophobia is linked to gender-role

beliefs, endorsement of male sex norms, attitudes towards women, hypermasculinity and various aspects of sexism (Whitley 2002). Additional links have been found between homophobia and attitudes to abortion, religiosity, political ideology, educational level and age (Hicks and Lee 2006). Transphobia is linked to heterosexism, authoritarianism, essentialist views of sex (Tee and Hegarty 2006), gender-typing (Ceglian and Lyons 2004), tolerance for gender non-conformity in children, and perhaps unsurprisingly, attitudes towards homosexuals (Hill and Willoughby 2005).

It is possible that men’s relative antipathy towards homosexual people and transpeople may arise out of the greater investment made by men (as compared with women) in the maintenance of this broad cluster of genderist and heterosexist values; many of which homosexual and transgender people appear to contradict. This possibility is supported by findings on maternal and paternal parenting; for example that fathers tend to treat their sons and daughters differently, while mothers tend to parent in a less differentiated way (Siegal 1987).

The research on homophobia indicates that, just as men (compared with women) express more intolerant attitudes towards homosexual people, so too are men who are homosexual often subjected to greater antipathy (compared to homosexual women; Kite and Whitely 1996; LaMar and Kite 1998). We may speculate that, just as men may invest more in heterosexist and genderist values, so too may these values be invested more deeply in men. If so, we would predict that, like men who are homosexual, markedly gender variant men (transwomen) would be subjected to less tolerant attitudes than markedly gender variant women (transmen).

The quest for improvements in measurement of transphobia led to recent development of the Genderism and Transphobia Scale or GTS (Hill and Willoughby 2005). Hill and Willoughby reported three studies conducted to develop and trial an instrument to measure these attitudes. Their work takes as its starting point Hill’s analysis of hate against transpeople, which identified three interrelated constructs: transphobia, genderism and gender-bashing. *Transphobia* is the ‘feeling of revulsion to masculine women, feminine men, cross-dressers, transgenderists, and/or transsexuals’, manifesting itself in ‘the fear that personal acquaintances may be trans or disgust upon encountering a trans person’ (pp. 533–534). *Genderism* is a set of beliefs that ‘perpetuates negative judgments of people who do not present as a stereotypical man or woman’, and hold that ‘people who do not conform to sociocultural expectations of gender are pathological’ (p. 534). *Gender-bashing* is ‘the assault and/or harassment of persons who do not conform to gender norms’, ‘the fear manifest in acts of violence’ (p. 534). Notice that, as defined here, the three elements of the GTS seem to reflect

the traditionally triadic model of attitudes; consisting of affective, cognitive and behavioural elements. A cursory inspection of GTS items (Appendix) also reveals these three elements at the level of individual items.

Hill and Willoughby (2005) reported that an early version of the scale (Study 2) predicted parents' attitudes towards (hypothetical) gender conformity/nonconformity in their children, as well as towards homosexuals. Scores also correlated well with measures of gender-role beliefs. The final 32-item instrument, trialed with 180 undergraduate/graduate students (Study 3), displayed good internal consistency (Cronbach alphas of .79 for genderism, .95 for transphobia, .87 for gender-bashing, and .96 overall). The instrument also appeared to discriminate well between different groups of people, with women, as well as those who have had personal contact with transpeople all tending to display less prejudiced attitudes than men and those who had not had such personal contacts with transpeople. Hill and Willoughby did not report test-retest reliabilities for the GTS.

Because of the very high correlation between the genderism and transphobia subscales ($r=.84$, $p=.01$), Hill and Willoughby opted to present the scale as a two-factor scale; measuring genderism/transphobia (25 items) and gender-bashing (7 items). The two-factor solution, obtained by way of principal components analysis with oblimin rotation, accounted for 60% of the variance. Despite the presence of the second of these two factors, they named their scale the 'Genderism and Transphobia Scale' or GTS. They concluded that it is a 'new and useful scale to measure antipathy towards people who cross genders and sexes' (p. 531), and 'an advance in the study of discrimination and prejudice against gender non-conformists, especially transsexuals, transgenderists and cross-dressers' (p. 542).

One potentially valuable aspect of the GTS is that it contains three pairs of matched items. Within each pair the two items contain identical wording except for the gender of the transperson to whom the item refers. The consequence is that it is possible, through these three pairs, to make a limited comparison of attitudes towards transmen versus transwomen. The items concerned are 2 and 20 (violence towards a man/woman because he/she was too feminine/masculine), 6 and 13 (teasing of a man/woman because of his/her feminine/masculine appearance or behaviour), and 25 and 29 (feeling uncomfortable about feminine men and masculine women).

We note that Hill and Willoughby's research, like much of the research on transphobia, was conducted in the developed West [in their case among 'by and large, well-educated members of a cosmopolitan city (Montreal) well-renowned for its liberal attitudes towards sexuality and gender issues' (p.542)]. Relatively little research has been done on trans populations beyond the West. Nevertheless, humanities and social science researches over the last twenty years have

provided glimpses of the trans experience worldwide. To take Asia as an example, research has covered (a) Buddhist and Buddhist-influenced societies like Thailand, Laos, Myanmar, Cambodia and Vietnam (e.g. Coleman et al. 1992; Costa and Matzner 2006; Doussantousse and Keovongchith 2005; Earth 2006; Gallagher 2005; Jackson 1995; Jenkins et al. 2005; Luhmann 2006; Mackie 2001; Matzner 2001; Nanda 2000; Totman 2003; Walters 2006; Winter 2006a, b, c); (b) Shinto Japan (e.g. Lunsing 2003; Mackie 2001; Okabe et al. 2008); (c) Islamic societies such as Pakistan, Bangladesh, Oman, Indonesia, Turkey and Malaysia (Boellstorff 2004; Hossain 2004; Jami 2005; Peletz 1996; Polat et al. 2005; Teh 1998, 2001, 2002; Teh and Khartini 2000; Wikan 1991; Yuksel et al. 2000); (d) Hindu societies such as India and Nepal (Human Rights Watch 2006; Nanda 1990, 1993, 1997; People's Union for Civil Liberties—Karnataka 2003); (e) Confucian-influenced societies such as Mainland China, Hong Kong, Taiwan and Singapore (Emerton 2004, 2006; Kim et al. 2006; King Webster, and Winter, under review; Kronick 2000; Ma 1997, 1999; Ruan et al. 1989; Tsoi 1990, 1992); and (f) the predominantly Christian Philippines (Alegre 2006; Cannell 1995; Nanda 2000; Winter 2006c; Winter et al. 2007).

The Asian research provides ample evidence of transphobic prejudice, discrimination and social exclusion. Throughout Asia transphobia is expressed in the family, in school, at the workplace and in society more generally, though it clearly varies in strength and expression from society to society (Winter 2007a, b). At its worst it can result in violence and murder, including that sometimes perpetrated by government agencies (e.g. in India and Nepal, as reported in People's Union for Civil Liberties—Karnataka 2003, and Human Rights Watch 2006). Against all this Asian governments, even those two-thirds that have ratified the International Convention on Civil and Political Rights, often provide little legal or practical protection. Indeed many perpetrate their *own* discriminative practices, whether by allowing the outlawing of sex reassignment surgery (for example Malaysia, in regard to its Muslim citizens), denying opportunities to change legal gender status or enter heterosexual marriages (for example, 'progressive' Hong Kong), or denying gender-appropriate ID cards even to those who have already undergone sex reassignment surgery (for example, 'tolerant' Thailand).

It is in this context that, across the continent there is a growing trans-rights movement, evidenced by TEAM (Transgender Equality and Acceptance Movement, in Hong Kong), Pink Triangle (in Malaysia), STRAP (the Society of Transsexual Women of the Philippines), IWAG and GAHUM (all in the Philippines), Rainbow Sky (in Thailand), Labrys (in Kyrgyzstan), Blue Diamond (in Nepal) and Rush (in Korea), Insanca Yasam Platformu (in Turkey), as well as Trans-Net Japan and Singapore Butterflies.

Interestingly, several Asian studies of transphobia have, like their Western counterparts cited earlier, indicated that men tend to be more transphobic than women. This gender difference again mimics that for homophobia (Hon et al. 2005). Sample studies on transphobia are Winter (2006b) in Thailand and Winter et al. (2007) in the Philippines (both of which studies reported higher levels of intolerance by fathers than mothers towards cross-gender behaviour in their children), as well as (King et al., under review) general population study in Hong Kong, which reported that men scored higher on 'gender essentialism', one of the eight factors identified in their research on 'transprejudice'. Winter et al.'s research (under review) cited earlier, and spanning Asia and the developed West, reported higher levels of transphobia among men (as compared with women) in all five Asian societies studied: Singapore, Malaysia, Hong Kong, Thailand and the Philippines. No Asian study, to our knowledge, has so far examined the effect of transpeople's own gender upon societal attitudes towards transpeople.

In the field of trans research, whether academic or policy-driven, it would clearly be useful to have a well-designed instrument for measuring transphobia, relevant for use in a variety of cultures, and allowing for comparative work across cultures and across the genders of both participants and transpeople. It is for this reason that Hill and Willoughby's GTS is a potentially valuable development. The research presented in this paper is aimed at exploring the appropriateness of the instrument used outside its original cultural context, as well as to examine any gender effects.

The study to be reported was conducted in Hong Kong, a modern Western city with strong Asian values. Ng and Ma (2001) describe the city as a hybrid culture, drawing upon sexological premises that are Taoist-Confucian, Neo-Confucian, Christian, male-dominated, and Liberalist. They point out that, in relation to sexual matters, 'the laws are strict, voices for social conservatism are loud, and sex education activities or serious discussion of sexual matters are difficult to find' (Ng and Ma 2001, p. 242). Sexual minority groups remain marginalised members of the community. Homosexuality was decriminalised relatively late (in 1991), and at the time of writing a law remains that prohibits anal intercourse where one of the partners is under the age of 21 (the minimum age for vaginal intercourse is 16). Gays, lesbians, bisexuals and transpeople have no substantial legal protection against discrimination, and are discriminated against daily (e.g. see Chan 2005).

Homophobia and transphobia is evident throughout the general population (Hong Kong Government 2006; King et al., under review). King, Webster and Winter note that the term Hong Kong people commonly use for transpeople is 'yan yiu', which translates as 'human monster'. In their

study of 856 Hong Kong residents they found that 35.4% believed that a man identifying as a woman is psychologically abnormal, 23.2% believed that such a person should not be allowed around children, and 41.8% felt they would not be comfortable around such a person. A substantial minority believed it unacceptable to have an openly gender variant person as a work colleague (15.8%) or as a friend (17.2%). A substantial minority also believed a school should be able to exclude a trans student (11.6%), a landlord should be able to refuse to let an apartment to a transperson (14.6%), that an employer should be able to refuse to employ a transperson (12.3%); and that a transperson should not be allowed to marry in their new sex (19.6%) or be able to change their legal status, even after sex reassignment surgery (35.1%). These figures indicate substantial levels of transphobia in the Hong Kong community.

As indicated earlier, the current study was largely exploratory in nature, the aim being to examine the appropriateness of the GTS for use in a cultural context other than that in which it was developed. However, we also used the opportunity to examine possible gender differences between men and women in terms of their attitudes towards transpeople. In view of the fact that the GTS contains three pairs of matched items (items which are identically worded except for the gender of the person to which the item refers) it was also possible to examine the effect of the gender of a gender variant person upon the attitudes of our participants. We predicted that, in line with previous research on transphobia (as well as homophobia), men would express less tolerant attitudes than women. We also predicted that, in line with research that indicates less tolerant attitudes towards homosexual men than homosexual women, gender variance in men would be less favourably viewed than in gender variant women.

Hong Kong and Canadian scores (individual items and overall) were compared using *t*-tests. *T*-tests were used since we were using summary descriptive data made available to us by the original authors of the GTS, rather than the complete Canadian data set. The factor structure for the Hong Kong data was explored by way of principal axis factoring with oblimin rotation. The reliabilities of any factors identified were investigated using Cronbach alpha. Mean correlations were used to determine an estimate of discriminant validity.

Method

Sample

The participants in this study were recruited using convenience sampling methods. A total of 205 undergraduate students at the University of Hong Kong completed a

Chinese version of the GTS. These students represented all ten Faculties of the University and all three years of its curriculum. They were aged from 18 to 25 years with the majority being between 19 years and 22 years (90%). Each student was attending one of three courses: 'Learning through Movies and the Mass Media', 'Art and Physics' or 'Science and Technology in the Modern World'. All three courses were from a menu of 'Broadening Courses', a certain number of which each student must take during his or her undergraduate studies, and which are all designed to enrich students' knowledge and broaden their perspectives outside their core disciplines. Due to the nature of the study it was considered important to assess the sexual orientation of the sample. While 189 (92.2%) indicated they were heterosexual, only one (.5%) indicated a homosexual orientation and 10 participants (4.9%) a bisexual orientation. Data on sexual orientation was missing from the remaining five participants. The sample consisted of 82 students identifying themselves as male, and 121 identifying as female. Two participants did not indicate what gender they were. Their data was excluded from all analyses, leaving a sample size of 203 for analysis.

The Hong Kong sample was broadly similar to Hill and Willoughby's (2005) Canadian sample. Both consisted of undergraduate students from a wide range of disciplines. The gender balance in the two samples was similar, with men comprising 45% of the Hong Kong sample and 55% of the Canadian sample. The sexual orientation of the Hong Kong sample was broadly similar to those in Hill and Willoughby's Study 1 (the only study of the three reported in their 2005 paper in which sexual identity of respondents is reported). While the mean age of the Hong Kong students was 21 years that of the Canadian sample was 25. The major likely difference between the two samples was that for the Hong Kong sample the majority were ethnic Chinese, while the university from which Hill and Willoughby appeared more diverse (with 59% claiming English as their language of origin, 16% French and 25% citing other languages).

Data Collection

Translation of the GTS into Chinese proceeded in several stages, and was the outcome of several waves of translation and back-translation involving two bilingual persons; the third author and an independent consultant from the Hong Kong trans community. Item content was not changed. However, an extra item (item 33, 'in nature there are two sexes and two sexes only') was inserted to supplement item 4 in the original instrument ('God made two sexes and two sexes only'). This was to accommodate local demographics. As many as 70% of Hong Kong people choose not to identify with any religion (figures from the King et al.

study, under review). We therefore felt that, for many respondents, a reference to God might not be as meaningful as one to nature. See [Appendix](#) for this item and the other GTS items.

The resulting Chinese version of the GTS was administered by the third author at the end of class time, with the permission of the instructors concerned and with the informed consent of the students. Questionnaire completion (anonymous) took around 20 min. As for Hill and Willoughby's original GTS, respondents were asked to rate their level of agreement with each of the statements from 1='strongly agree', through 'agree', 'somewhat agree', 'neutral', 'somewhat disagree', and 'disagree' to 7='strongly disagree'. Where items expressed attitudes unfavourable towards transpeople, the scoring was reversed. Consequently, high scores throughout indicated antipathy towards gender variance, gender identity variance and transpeople.

Results

Overall GTS Scores

As in the case of the Hill and Willoughby data, the Hong Kong data revealed wide variation within the sample in terms of levels of antipathy towards transpeople. We compared the mean levels in each location, removing our extra item (item 33) to do so, and thereby ensuring that the same 32 item instrument was being examined in the comparison. So corrected, the mean overall score for Hong Kong was 107.89 (SD 23.15), as compared to the corresponding mean of 100.4 (SD 37.7) for the Montreal sample. A *t*-test to compare these means produced a *t*-value of 4.28, significant beyond the $p < .05$ level. The Hong Kong sample therefore seemed more transphobic than the Montreal sample. In terms of item scores the mean for the Hong Kong sample was 3.37, compared to 3.14 for Montreal. It is important to note that both figures are towards the tolerance side of the scoring mid-range of 4.0. Mean levels of transphobia in both samples therefore appeared, in terms of the scoring range of the scale, quite low.

We then made comparisons between the two samples at the level of individual items. We were able to do so thanks to the generosity of the original authors of the GTS, who provided us with detailed Canadian item data not presented in their original report. We found significant differences on two items. The first was item 5 (support for a transwoman undergoing sex reassignment surgery). The mean for Hong Kong was 4.90, and for Montreal was 4.02 ($t=2.12$). The second was item 7 (disgust at men who cross-dress for sexual reasons). The mean for Hong Kong was 4.87, and for Montreal was 3.83 ($t=2.46$). Hong Kong respondents were therefore significantly more antipathetic towards

transpeople on these two items as compared to their Canadian counterparts.

Analyses were performed to examine the effects of participants' year of study and of participants' gender. No statistically significant effect was found for year of study. As for gender, Hill and Willoughby (2005, Study 1) reported significant gender differences on all three factors they identified for the GTS (genderism, transphobia and gender-bashing). Not wanting to assume a similar factor structure for the Chinese GTS, we examined a gender effect first of all using *overall* scores, and then individual scores. The mean overall score for men was 3.46 (SD .82) and for women 3.16 (SD .79). The observed difference was statistically significant ($t=2.65$, $p=.009$). In short, men appeared to be more transphobic than women in this study, as in Hill and Willoughby's study and others in the West and in Asia, reviewed earlier in this paper.

We then examined participants' gender differences at the level of individual items. We did so by way of the Mann–Whitney test, chosen because data for individual items were non-paired and non-parametric in distribution. On nine items the attitudes and beliefs displayed by men were significantly less tolerant than women (at $p<.01$). These were items 1 ('I have beat up men who act like sissies'), 2 ('I have behaved violently toward a woman because she was too masculine'), 6 ('I have teased a man because of his feminine appearance or behavior'), 12 ('I cannot understand why a woman would act masculine'), 13 ('I have teased a woman because of her masculine appearance or behavior'), 14 ('Children should play with toys appropriate to their own sex'), 18 ('If I found out that my lover was the other sex, I would get violent'), 20 ('I have behaved violently toward a man because he was too feminine'), and 32 ('If I encountered a male who wore high-heeled shoes, stockings and make-up, I would consider beating him up').

We also examined whether participants' attitudes and beliefs towards transpeople were influenced by the gender of the transperson. To do this we examined scores on the three pairs of items (items 2 and 20, 6 and 13, and 25 and 29) which were worded identically except for the gender of the transperson considered. The Wilcoxon-Signed Ranks Test was used, because the data in this case were paired and non-parametric in distribution. On all three pairs participants expressed a significantly less tolerant view ($p=.000$) towards gender variant males than to gender variant females.

Scale Characteristics: Construct Validity

Construct validity of the scale was investigated using factor analysis, a procedure used to ascertain the fundamental structure of a set of indicator items. Hill and Willoughby's original work identified three factors, and reported that all three scales in the GTS were significantly correlated with

each other; genderism and transphobia ($r=.84$), genderism and gender-bashing ($r=.73$) and transphobia and gender-bashing ($r=.83$). They later collapsed the genderism/transphobia scale, presenting their instrument as a two-factor scale.

The Hong Kong data for the 33 items was subjected to a principal axis factoring with oblimin rotation. The correlation matrix as a whole was considered factorable. However, there were three items which posed problems for the analysis. Item 8 ('Children should be encouraged to explore their masculinity and femininity') correlated at less than .3 with every other item. It was therefore removed (following guidelines suggested by Pedhazur and Schmelkin 1991). Item 26 ('I would go to a bar that was frequented by females who used to be males') did not load on any factor. Perhaps this was because in somewhat conservative Hong Kong it is uncommon for students to go into bars. In addition, openly transsexual people are not permitted to enter many of Hong Kong bars. This item was therefore removed. Finally, item 16 ('I would avoid talking to a woman if I knew she had a surgically created penis and testicles') did not load on any factor that made any contextual sense. Perhaps Hong Kong students were unlikely to encounter this situation and therefore had difficulty providing an informed answer that had any relevance to personal experience or beliefs. Accordingly this item was also removed.

The final analysis was conducted on 30 items. The results of the factor analysis are presented in Table 1 below. The Kaiser–Meyer–Olkin measure of sampling adequacy was .861, thereby providing support for the factorability of the correlation matrix (Tabachnik and Fidell 1996). A Bartlett's test of sphericity ($\chi^2=2531.774$, $p=.000$) provided further support.

Five factors were identified for the Chinese version of the GTS used with Hong Kong students. These factors explained a total of 53.96% of the overall variance (see Table 1). This factor solution contrasted with that of the original Hill and Willoughby (2005) research which identified a two factor solution accounting for 60% of the overall variance.

The five factors identified in the current study were as follows. Items in factor I were exclusively concerned with antipathy towards gender variant men, engaging in stereotypically cross-gendered behaviour whether by way of make-up and dress or general appearance or behaviour (e.g. 'A man who dresses as a woman is a pervert'). We therefore called it *Anti Sissy Prejudice*, preferring the word 'prejudice' to 'phobia' in line with reasoning elsewhere (King et al., under review). Items in factor II measured a violent antipathy extending to cross-gendered behaviour in both sexes (e.g. 'I have behaved violently toward a woman because she was too masculine'). We labelled it *Anti Trans Violence*.

Table 1 Chinese version of the GTS: loadings on five factors.

Factor	Loadings					
	Item	I	II	III	IV	V
Anti sissy prejudice	q22	.589				
	q28	.574				
	q7	.555				
	q21	.538				
	q17	.501				
	q31	.468				
	q11	.424				
	q10	.400				
Anti trans violence	q6	.365				
	q1		-.923			
	q2		-.793			
	q20		-.651			
Trans unnaturalness	q32		-.409			
	q5		.371	.227		
Trans immorality	q3	.392		.349		
	q33			.850		
	q27			.779		
	q4			.738		
	q23			.240	-.343	
	q24				-.576	
	q30				-.492	
Background genderism	q15			-.434	.417	
	q19			-.343	.227	
	q12				.669	
	q14				.552	
	q25				.491	
	q29				.472	
Eigenvalues	q13		-.390		.388	
	q9		-.390		.277	
	q18	.337			.223	
% variance		8.05	3.77	1.65	1.53	1.18
		26.83	12.57	5.51	5.12	3.93

Loadings >.20 reported—loadings in bold are deemed to make up the corresponding factor

Items in factor III related to certain beliefs about the nature of gender variance; specifically the extent to which it violates either a divine or natural order. The original GTS Item 4 ('God made two sexes and two only') and our additional Item 33 ('In nature there are two sexes and two only') both loaded well on this factor, therefore undermining the need for the latter (i.e. additional) item. Nevertheless, in deference to the fact that many of our respondents may have been atheist or agnostic, we named this factor *Trans Unnaturalness*. Only two items loaded onto factor IV. Both were concerned with the morality, both of the way transpeople present to others, and of surgery to alter their anatomy (e.g. 'Sex change operations are morally wrong'). We named this factor *Trans Immorality*.

Factor V represented a miscellany of items, in two senses. First, the miscellany was evident in the form in which

antipathy was experienced and expressed; embracing incomprehension, discomfort, teasing and intrusive questioning. Second, it was evident in the object of antipathy; towards both trans behaviour and identity, and in regard to men (e.g. 'Feminine men make me feel uncomfortable'), women (e.g. 'I cannot understand why a woman would act masculine') and children (e.g. 'Children should play with toys appropriate to their own sex'). This factor seemed in our view to represent the sort of generalised background genderism described by Hill and Willoughby as 'the negative evaluation of gender non-conformity or an incongruence between sex and gender' (Hill and Willoughby 2005, p. 534). We therefore named this factor *Background Genderism*.

In terms of item overlap, our Anti Sissy Prejudice and Background Genderism factors largely consisted of items tapping Hill and Willoughby's conflated Transphobia and Genderism factor. Our Trans Unnaturalness and Trans Immorality scales consisted entirely of those items. Our Anti Trans Violence items tapped some of those in Hill and Willoughby's Gender-bashing factor.

Scale Characteristics: Reliability and Discriminant Validity

Cronbach alpha coefficients were calculated to assess the internal consistency of the item sets loading on each factor. The coefficients are displayed in Table 2. It will be observed that none is presented for Trans Immorality as it was not considered appropriate to estimate alpha for a two-item factor (Pedhazur and Schmelkin 1991). The coefficients for the remaining four factors ranged from .779 for Trans Unnaturalness to .807 for Anti Sissy Prejudice. For each the reliability estimates exceeded the threshold of .60 usually regarded as being acceptable for research purposes (Nunnally 1978), thus indicating that the factors identified

Table 2 Chinese version of the GTS: alpha reliabilities, correlations and mean correlations.

Factor	No. of items	α alpha	1	2	3	4	5
1 Anti sissy prejudice	9	.807	1.00				
2 Anti trans violence	4	.789	.464 ^a	1.00			
3 Trans unnaturalness	6	.779	.399 ^a	.066	1.00		
4 Trans immorality	2	n/a	.427 ^a	.053	.522 ^a	1.00	
5 Background genderism	8	.793	.655 ^a	.495 ^a	.417 ^a	.465 ^a	1.00
Mean correlations			.398	.216	.281	.299	.404

^a Correlation is significant at the .01 level (two-tailed)

Table 3 Chinese version of the GTS: descriptives and confidence intervals.

Factor	Mean	SD	95% confidence interval	
			Lower	Upper
1 Anti sissy prejudice	3.55	1.04	3.41	3.69
2 Anti trans violence	1.88	1.05	1.74	2.03
3 Trans unnaturalness	4.18	1.20	4.02	4.35
4 Trans immorality	3.58	1.31	3.40	3.77
5 Background genderism	3.18	1.03	3.04	3.32

Means represent score range from 1 to 7, with higher scores indicating attitudes in the direction of transphobia.

from this Hong Kong sample of undergraduate students were uni-dimensional.

Test-retest reliabilities could not be examined within the constraints of this study, involving a single wave of data. Test-retest reliabilities are also absent from Hill and Willoughby's (2005) report.

Correlations for each of the five factors with all other factors are presented in Table 2. All these estimates are low (mean correlations .216–.404) demonstrating that although the factors were correlated they were also discriminatory (i.e. measuring different characteristics) and were unique uni-dimensional factors of the overall scale (Portney and Watkins 2000).

Levels of Transphobia as Indicated by Different Factor Scores

It is important to note once again that, viewed in terms of the possible scoring range, the attitudes of this sample were comparatively positive. The sample as a whole was only mildly transphobic, and more substantial levels of transphobia were only expressed by a minority. Mean item

scores for each factor are displayed in Table 3. With the exception of the Trans Unnaturalness factor (mean score 4.18), all mean scores were well below the mid-point of 4 for the score range 1–7. The lowest score was in relation to the Anti Trans Violence factor, suggesting an overall low propensity for transphobic violence within our sample.

Gender Differences as Evidenced by Factor Scores

Having earlier identified a participants' gender difference on overall scores as well as nine individual GTS items, we examined our five factor scores for a corresponding gender effect. Multivariate analysis of variance was used in order to simultaneously determine any significant interactions between gender and the five identified factors. There were significant multivariate effects, as determined by Wilks' Lambda ($F=.857, p=.000$). A closer examination of the between subject effects revealed main effects of gender upon both the Anti Trans Violence and Background Genderism factors (see Table 4). Women expressed significantly less violence against transpeople, as well as a significantly lower level of Background Genderism.

Discussion and Conclusion

We here concentrate on four aspects of our findings with the Chinese version of the GTS: factor structure, overall levels of transphobia, gender differences in terms of the gender of participants, and gender differences in terms of gender of the transpeople to whom GTS items referred.

The factor structure underlying the data from our sample was appreciably different from that underlying Hill and Willoughby's (2005) Montreal data. Our findings therefore imply that the factor structure underlying GTS data can vary across samples drawn from two different cultures. That the factor structure is apparently so different for Hong Kong (as compared with Canada) is perhaps not surprising

Table 4 Chinese version of the GTS: MANOVA analysis of gender v all factors.

Factor	Gender		Between subject effects	
	Men ($n=82$)	Women ($n=121$)	F	p
	Mean (SD)			
1 Anti sissy prejudice	3.70 (1.02)	3.45 (1.02)	3.14	.078
2 Anti trans violence	2.32 (1.24)	1.60 (.77)	25.79	.000
3 Trans unnaturalness	4.24 (1.19)	4.15 (1.20)	.252	.616
4 Trans immorality	3.54 (1.26)	3.62 (1.36)	.167	.683
5 Background genderism	3.49 (1.07)	2.97 (.95)	13.413	.000

Multivariate effects Wilks' Lambda=.857, $F=6.585, p=.000$. Note: means represent score range from 1 to 7, with higher scores indicating attitudes in the direction of transphobia

in view of the cultural factors outlined towards the start of this paper; a mix of Taoist-Confucianist, Neo-Confucianist, Christian, liberalist value systems, all within a male-dominated society in which sons are preferred over daughters (Cheung 1996; Das Gupta et al. 2003). In a culture of this sort it may be that gender non-conforming sons present a particular threat to Chinese family values. If so then it is therefore not entirely unexpected that Anti Sissy Prejudice (nine items together explaining nearly 27% of the overall variance in the data) was such an important strand within more general attitudes towards gender variance. Note too that the correlations between Anti Sissy Prejudice and the other factors were all positive and significant. Anti Sissy Prejudice in Hong Kong is linked to violent attitudes (Anti Trans Violence), as well as three sets of (themselves intercorrelated) beliefs. These are that gender variance (male and female) violates a natural order and is immoral (Trans Unnaturalness and Trans Immorality), as well as that gender variance in all its forms is distasteful and objectionable (Background Genderism).

The item scores for Anti Trans Violence were strikingly lower than for the other four factors identified, and indicated an overall unwillingness of Hong Kong respondents to countenance violent attacks upon the gender variant. This unwillingness perhaps reflects a broader rejection of violence in Hong Kong society as a whole. The rate of violent crime in Hong Kong is around 212 cases per 100,000 residents [extrapolated from 2006 figures (Hong Kong Government 2007)]. In passing, we note that the comparable figure for Montreal is higher by a factor of five, at around 1,065 (Gannon 2007, reporting 2005 figures).

Turning now to overall scores on the GTS, our findings suggest that Hong Kong undergraduate students were more antipathetic towards the gender variant than their counterparts in Montreal. It is worth considering some likely reasons for these differences. In some ways the two samples, one in Montreal and the other in Hong Kong, were similar. Hill and Willoughby's sample consisted of 'by and large, well-educated members of a cosmopolitan city (Montreal) well-renowned for its liberal attitudes towards sexuality and gender-issues' (op. cit., p.542). Our own sample consisted of similarly well-educated members of an internationally important and modern city well-integrated into the global commercial, financial and media communities.

A major likely difference is that, while the university from which Hill and Willoughby drew their sample was 'well-known for its racial and ethnic diversity' (p. 534) with 59% claiming English as their language of origin, 16% French and 25% other, our respondents were exclusively ethnic Chinese, living in a city that is overwhelmingly (98%) ethnic Chinese. Our respondents were likely influenced by Asian values and mores that included elements of

Taoism, Confucianism and Neo-Confucianism (Ng and Ma 2001). To these influences we would add Buddhism, noting that it is a religion with which many in Hong Kong identify (for example, around 8% of respondents in King et al. study, under review). These influences, each with strong ethical and moral traditions, impact upon matters of interpersonal relationships, family responsibilities and sexual conduct (Yu 1993; Ng and Ma 2001). Chinese culture places heavy responsibilities upon sons to marry (effectively bringing into the family a daughter-in-law), and to bring grandchildren into the family; especially a grandson (Das Gupta et al. 2003). A similar responsibility falls upon daughters to find a husband, join his family, and bear his children. Seen in this light, transpeople (especially the gender *identity* variant) present a challenge to this system of values, and, if they have transitioned, challenge it in a very public way indeed, undermining family 'face'. Note in this connection that a family member who engages in homosexual behaviour need not present this challenge, so long as he/she expresses his/her sexuality privately and meets obligations as spouse and parent.

Notwithstanding the above, it is important to bear in mind that, whatever the differences, both the Montreal and Hong Kong samples displayed overall scores towards the *lower* end of the GTS scoring range. It is likely that more negative attitudes would be found were the GTS used elsewhere, in other societies, or even in other sectors of Hong Kong society. Two recent studies of transphobia, neither using the GTS, are of interest in this connection. Winter et al. (under review) examined seven samples of undergraduates worldwide, and found levels of transphobia much higher than Hong Kong in provincial Malaysia (as well as in the mid-West USA). King et al. (under review) employed respondents from the general population of Hong Kong, and identified levels of transphobia apparently higher than those displayed by our undergraduates. Such findings put in mind Hill and Willoughby's remark in connection with their Montreal student sample, that the attitudes they found 'should be more positive toward transpeople than would be found in less liberal, less educated, and rural contexts' (op. cit., p. 542). Clearly the results of the current study should not be seen as representative of Asia, nor even of Hong Kong.

Turning next to gender differences, our findings suggest that, among Hong Kong undergraduates as among their Montreal counterparts, men were more transphobic than women. This was evident at the level of overall GTS scores, nine individual items and two factor scores. At the level of individual items, it was clear that men (as compared with women) were more disposed to violence and ridicule towards transpeople. Five of the nine items on which we observed gender differences made explicit reference to violence and physical force (indeed, only one

of the six GTS items referring to physical force and violence failed to yield a gender difference). Another two of the nine items came from the (two) GTS items that explicitly referred to teasing.

At the level of factor scores, the gender differences echoed findings elsewhere, using different instruments. As well as Hill and Willoughby (2005) there is the research of King et al. (under review), Landen and Innala (2000), Leitenberg and Slavin (1983), Winter (2006b), Winter et al. (2007), Winter et al. (under review), and Wren (2002). The research of Winter et al. (under review) is particularly striking in its demonstration of a gender difference in all seven countries studied (Hong Kong, the Philippines, Thailand, Singapore, Malaysia, USA and UK). Our own findings yielded gender effects for two of the factors identified; Background Genderism and Anti Trans Violence. We examine these two factors one by one.

Background Genderism is a generalised antipathy towards gender variance of any sort; an antipathy expressed in the GTS as incomprehension, discomfort, and propensity to tease and to ask intrusive questions, and targeted towards any sort of gender non-conformity, whether in terms of behaviour or identity, and whether in men, women or children. It involves a tendency to condemn ‘gender non-conformity or an incongruence between sex and gender’ [Hill and Willoughby’s (2005) own description of their Genderism factor, p. 534]. We saw in the introduction that homophobia and transphobia appear to co-occur (Hill and Willoughby 2005), and that each seems to be related to a broad range of attitudes and beliefs; many relating to sex and gender (see the review of relevant literature earlier in this paper). As arguably the major beneficiaries of these value systems (which we might broadly call genderism and heterosexism) men may have a greater investment than women in the maintenance of male and female conformity, and may be most threatened by non-conformity. As we have seen, this suggestion is supported by studies showing how fathers, much more than mothers, encourage gender-differentiation and seek gender-conformity in their children (Siegal 1987).

In view of the gender differences on items referring to violence and physical force, the gender difference on the Anti Trans Violence factor was unsurprising. The apparently stronger tendency among men (as compared with women) towards violence against gender variant persons may reflect a greater overall disposition on the part of men (again as compared with women) towards violence in society, in Hong Kong as elsewhere (Steffensmeier et al. 2006; UK Government Home Office 2007; US Department of Justice 2007). Notwithstanding, this greater propensity to violence does not seem to be reflected in actual violence against Hong Kong transpeople; in eight years of work with the trans community the first author of this paper has encountered no reports of such an incident.

We turn now to a discussion of the second gender effect in which we were interested; the effect of the gender of the transpeople to which GTS items refer. By analysing responses to three key pairs of similarly worded items, we found that participants’ antipathy towards gender variance was especially strong in relation to gender variant *boys* and *men* (as compared with gender variant *girls* and *women*). Indeed, this differential antipathy was sufficiently evident to yield a discrete factor, which we called Anti Sissy Prejudice. In the predominantly Chinese cultural context of Hong Kong, in which heterosexism, male dominance and a preference for sons still survives, this antipathy may stem from the investment that society has, not merely in maintaining a sexist and heterosexist social order, but in specifically ensuring that *boys* and *men* subscribe to this order.

We note that there was a tendency, just short of statistical significance, for the Anti Sissy Prejudice factor to be higher among male participants (as compared with female participants).

We speculate that (at least in Hong Kong) men may be not only the worst perpetrators of intolerance towards transpeople, but also the major victims. This line of thinking is supported by another recent Hong Kong study (King et al., under review) which examined attitudes in the general population (rather than among undergraduate students). Their findings confirm the existence of a markedly male antipathy towards male gender variance. Over half the male respondents (54.2%) indicated that ‘men who identify as women contradict the ethics of Chinese society’, compared to only 41% of the women.

Male ‘Anti Sissy Prejudice’ may not be an exclusively Chinese phenomenon. Western research reports suggest that it is men who are most often the perpetrators (e.g. Moran and Sharpe 2004, in Australia). Most transpeople worldwide who are murdered appear to be transwomen (Lombardi et al. 2001), and once again we can assume that, as for violent offences more generally (UK Government 2006), most of the perpetrators are men. The view of transwomen as gay men presenting as women (as what Bettcher 2007, calls ‘deceivers’ and ‘pretenders’) is probably important here, serving to make much of what appears to be transphobic violence actually homophobic. As Bettcher has pointed out, the view that transwomen engage in ‘sexual deception’ (p. 47) likely led to the death of at least one transwoman; Gwen Araujo, in California in 2002. The publication of Bailey’s (2003) book ‘The Man Who Would Be Queen’, in which he argues that many transwomen are gay men who become women to attract men (and others are men who so love women that they want to become what they love, deriving erotic pleasure from the thought of themselves as women) arguably serves

to sustain and encourage the view of the transwoman as sexual deceiver.

The view that Bailey presents (and Blanchard 1985, before him) is one in which gender identity derives from an underlying sexual preference, and is in some way sexually motivated. It is difficult to ascertain from our data how many of our respondents took this view of transwomen, nor how this view might affect their broader attitudes towards transwomen. However, two of the GTS items, each suggesting a link between sexuality and gender, provide a hint. They are item 7 ('Men who cross-dress for sexual pleasure disgust me', with which 67% agreed, and item 17 ('a man who dresses as a woman is a pervert') with which 44% agreed. It therefore appears from these figures that Hong Kong people commonly conceive of gender variance as sexually motivated. Other Hong Kong studies support this conclusion. Four out of ten respondents (43%) in King, Webster and Winter's study (under review) believed men who dress as women are perverted, and 17% of the university sample in Winter et al.'s (under review) study believed that transwomen live as they do to attract men. It is our view that these considerations of sexuality, as well as those of patriarchal Chinese society, may combine to produce the high levels of Anti Sissy Prejudice in our study, especially among males.

In summary, this study employing the GTS has revealed higher levels of antipathy towards transpeople in Hong Kong than in Montreal, substantially higher levels in men than in women (as in Montreal), higher levels towards gender variant men than towards gender variant women, and a different factor structure than in Montreal, with Anti Sissy Prejudice an important component. We suggest, along with Hill and Willoughby, that there is now a need to apply the GTS with samples from the general population. Our own work has shown how cautious we should be in assuming that the factors underlying a phenomenon (in this case, the fabric of ideas underpinning attitudes), remain invariant across samples drawn from different cultures. So too, within any one culture, it is likely that the factors underlying transphobia in the general population are quite different to those underlying transphobia in university students. In Hong Kong we already have an indication of this, albeit in a study using a different instrument to the one we used, in the work of King et al. (under review), who identified eight factors. With the GTS now an openly available instrument published in an international journal, and consequently likely to be used increasingly to study transphobia worldwide, we hope that more research will be done to examine the invariance (or otherwise) of the factor structure underlying the instrument. Until that research is done, we would urge circumspection in matters relating to any questions relating to factor structure for this instrument.

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Appendix. GTS items (original English language versions)

Original items:

1. I have beat up men who act like sissies.
2. I have behaved violently toward a woman because she was too masculine.
3. If I found out that my best friend was changing their sex, I would freak out.
4. God made two sexes and two sexes only.
5. If a friend wanted to have his penis removed in order to become a woman, I would openly support him.
6. I have teased a man because of his feminine appearance or behavior.
7. Men who cross-dress for sexual pleasure disgust me.
8. Children should be encouraged to explore their masculinity and femininity.
9. If I saw a man on the street that I thought was really a woman, I would ask him if he was a man or a woman.
10. Men who act like women should be ashamed of themselves.
11. Men who shave their legs are weird.
12. I cannot understand why a woman would act masculine.
13. I have teased a woman because of her masculine appearance or behavior.
14. Children should play with toys appropriate to their own sex.
15. Women who see themselves as men are abnormal.
16. I would avoid talking to a woman if I knew she had a surgically created penis and testicles.
17. A man who dresses as a woman is a pervert.
18. If I found out that my lover was the other sex, I would get violent.
19. Feminine boys should be cured of their problem.
20. I have behaved violently toward a man because he was too feminine.
21. Passive men are weak.
22. If a man wearing make-up and a dress, who also spoke in a high voice, approached my child, I would use physical force to stop him.
23. Individuals should be allowed to express their gender freely.
24. Sex change operations are morally wrong.
25. Feminine men make me feel uncomfortable.
26. I would go to a bar that was frequented by females who used to be males.

27. People are either men or women.
28. My friends and I have often joked about men who dress like women.
29. Masculine women make me feel uncomfortable.
30. It is morally wrong for a woman to present herself as a man in public.
31. It is all right to make fun of people who cross-dress.
32. If I encountered a male who wore high-heeled shoes, stockings and make-up, I would consider beating him up.

Extra item for Hong Kong version of scale:

33. In nature there are two sexes and two sexes only.

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