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The contribution of self-deceptive enhancement to display rules in the United States and Japan

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Abstract

Socially desirable responding was tested as a mediator of American and Japanese college student differences in display rules. Americans endorsed the expression of anger, contempt, disgust, fear, happiness, and surprise more than the Japanese. Americans also exhibited more self-deceptive enhancement than the Japanese, and self-deceptive enhancement partially mediated country differences on the endorsement of anger, disgust, happiness, and surprise, but not contempt and fear. These findings highlight the role of self-deceptive enhancement in contributing to expressive display rules and support the point of view that socially desirable responding is a reflection of one's personality and culture rather than a statistical nuisance.

Keywords

culture; display rules; individual differences; mediation; self-deceptive enhancement; socially desirable responding

Display rules are social norms learned early in childhood and concern the appropriateness of the expression of emotion in various social contexts (Ekman, Sorenson, & Friesen, 1969). Display rules show us how emotion expression is regulated within a culture, and thus gives us a glimpse into how that culture may function (Ekman *et al.*, 1969; Matsumoto, Yoo, Hirayama, & Petrova, 2005). Being aware of differences and similarities in these social norms in our increasingly global society can enhance an individual's interpretation of social situations and increase successful interaction with others. Thus it is important to delineate what factors contribute to display rules.

Cross-cultural differences and similarities in display rules have been well documented. The first study to suggest the existence of display rules demonstrated that Japanese participants masked displays of anger, disgust, and fear by smiling in the presence of an experimenter, while their American counterparts did not (Friesen, 1972). This study generated a body of research on display rules within the USA that focused on the role of age, gender, and adjustment in relation to display rules (Fujita, Harper, & Wiens, 1980; Gnepp & Hess, 1986; Malatesta & Haviland, 1982; Saarni, 1979; Taylor & Harris, 1984). Cross-cultural research did not gain momentum until two decades later in a study in which American and Japanese

participants judged the appropriateness of expressions of emotion in different social situations (Matsumoto, 1990). Since then, research on display rules has demonstrated that there are cross-cultural differences in endorsements of emotional expressions (Konwar & Ram, 2004; McCarthy, Lee, Itakura, & Muir, 2006; Stephan, Stephan, & de Vargas, 1996). Moreover, research has demonstrated the existence of display rule differences between the USA and Japan, with Americans endorsing the expression of emotion more than Japanese participants (Matsumoto, 1990; Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998; Matsumoto *et al.*, 2005).

The existence of country differences in display rules begs the question of what psychological elements may account for these differences, i.e. what variables unpack the differences. Two studies have demonstrated that individual-level individualism-collectivism and extraversion account for some of the country differences in display rules (Fok, Hui, Bond, Matsumoto, & Yoo, 2008; Matsumoto *et al.*, 1998), but little is known about the potential contribution of other variables.

In the current study, the role of socially desirable responding was examined in accounting for cross-cultural differences in display rules. Socially desirable responding refers to the tendency to present oneself in an overly favourable manner (Paulhus, 1984); it influences self-reports of values and attitudes, especially regarding sensitive topics (e.g. racial attitudes, political beliefs) (Lönnqvist, Paunonen, Tuulio-Henriksson, Lönnqvist, & Verkasalo, 2007). Socially desirable responding is further illuminated by Paulhus' (1984) two-component model. In this model, the distinction between self-deceptive enhancement and impression management concerns an individual's awareness of his or her overly positive self-portrayal. The person engaging in impression management is cognizant that he or she is self-enhancing, while the person engaging in self-deceptive enhancement is unaware of his or her overly positive self-presentation.

Culture has been associated with these two components in different ways. Individuals from the West score higher on self-deceptive enhancement than those in the East, while individuals from the East score higher on impression management than those in the West (Lalwani, Shavitt, & Johnson, 2006; Lalwani, Shrum, & Chiu, 2009; Li & Reb, 2009). Yet there are some mixed findings concerning Japan. In a study examining socially desirable responses between Canadian and Japanese university students in Canada, there were no differences found in mean levels of self-deceptive enhancement and impression management (Heine & Lehman, 1995). However, one study has shown that Americans score higher than Japanese on self-deceptive enhancement (Ewert & Galloway, 2009), and two studies have shown that Japanese score significantly higher than Americans on impression management (Bernardi, 2006; Ewert & Galloway, 2009).

Both self-deceptive enhancement and impression management are relevant to display rules because they may help explain the levels of expressivity endorsement within each culture. To endorse the expression of emotion, one must be amenable to dealing with the consequences of expressing them, as there is always a possibility of unexpected or unpleasant interpersonal outcomes (e.g. rejection when expressing sadness to an acquaintance). If one is high in impression management, and thus overtly concerned with

adhering to social norms, it is likely that he or she will endorse emotion expression less, in apprehension of a disruptive social interaction. On the other hand, if one is high in self-deceptive enhancement, and thus not explicitly concerned with conforming to social rules, he or she may endorse emotion expression more, comfortable with a range of interpersonal outcomes. Socially desirable responding is a trait that describes the extent to which one is motivated to conform to social norms, and thus may help unpackage country differences in display rules.

In the current study, the two-component model of socially desirable responding is tested as a mediator of Japanese–American differences in display rules. Consistent with previous findings, the following hypotheses are proposed:

- Hypothesis 1** Americans will endorse the expression of emotion more than Japanese.
- Hypothesis 2** Americans will exhibit higher self-deceptive enhancement than Japanese, but lower impression management than Japanese.
- Hypothesis 3** Individual differences in self-deceptive enhancement and impression management will mediate the differences found between the USA and Japan on the endorsement of emotional expressivity.

Method

Participants

The sample consisted of 316 university students who participated voluntarily or to fulfil course requirements. Only those participants who were born and raised in the USA or Japan were included to ensure the samples were representative of each country. Two-hundred and twenty-two participants were from San Francisco State University (157 females, mean age of 19.62) and reported their ethnicities as follows: 31.2% Asian American, 27.5% Caucasian, 23.9% bi- or multi-ethnic, 10.5% Latino, 6.4% African American, and 0.5% unclassifiable.¹ Ninety-four participants were from Nihon University and Musashino University (65 females, mean age of 19.48) and all reported their ethnicity as Japanese.

Procedure

In both countries, all participants completed a battery of paper-and-pencil questionnaires including a survey assessing display rules and a survey examining socially desirable responding along with a variety of other measures not relevant to the current study. All participants were instructed to take the questionnaires home and complete them within one week. The order of the questionnaires was counterbalanced to prevent order effects.

¹Additional analyses were run using only Caucasians, and then separate analyses omitting the three largest groups in our sample (Asian, Caucasian, multi-ethnic). All four analyses replicated the significant findings from the original analysis with either significant or marginally significant results.

Measures

Display rules—The Display Rule Assessment Inventory (DRAI; Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998) is a survey measure of display rule knowledge. The DRAI is comprised of a series of items concerning how one should express an emotion (anger, contempt, disgust, fear, happiness, sadness, and surprise) in a variety of situational contexts (e.g. with an interactant at home or at a restaurant). Participants were administered the abridged DRAI, which asked them to report how they should express seven emotions toward six interactants (alone, parent, older sibling, close friend, acquaintance, professor in his/her 50s) in public or private settings, yielding 84 survey items. Definitions and examples for each emotion label are provided. An example of an item on the DRAI is ‘What do you believe you should do if you are with your parent, at home by yourselves, and you feel the following emotions toward your parent?’ There are six nominal response categories corresponding to the modes of expression originally theorized by Ekman and Friesen (1975): ‘show more than you feel it’ (amplify), ‘express it as you feel it’ (express), ‘show less than you feel it’ (deamplify), ‘show it but with another expression’ (qualify), ‘hide your feelings by showing nothing’ (neutralize), and ‘hide your feelings by showing something else’ (mask). There is also a response alternative for ‘other/none of the above.’

The nominal data were transformed into scalar values representing one dimension of expressivity endorsement, derived from multidimensional scaling of all responses. Multidimensional scaling is a mathematical procedure that examines similarities and dissimilarities in data. The dimension derived from this analysis was established using DRAI data from 32 countries, and has been demonstrated to be cross-culturally equivalent (Matsumoto, Lin, Yoo, *et al.*, unpublished data). This scoring procedure represents the extent to which the individual endorses the expression of the emotion that is being felt (Expressivity of Target Emotion). The response categories were assigned the following values: ‘Hide your feelings by showing nothing’ → -0.708, ‘Hide your feelings by showing something else’ → -0.181, ‘Show less than you feel it’ → 0.003, ‘Show it but with another expression’ → 0.051, ‘Show more than you feel it’ → 0.256 and ‘Express it as you feel it’ → 0.579. For the American participants, Cronbach’s α s were 0.67, 0.83, 0.77, 0.76, 0.72, 0.81, 0.83, and 0.92 for anger, contempt, disgust, fear, happiness, sadness, surprise, and overall emotion respectively. For the Japanese participants, Cronbach’s α s were 0.77, 0.80, 0.76, 0.85, 0.81, 0.84, 0.86, and 0.96 respectively.

Socially desirable responding—The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1991) is a self-report measure that evaluates socially desirable responding as two-components: self-deceptive enhancement and impression management. It is theoretically based on models originally proposed by Damarin and Messick (1965), and Sackheim and Gur (1978), and later used by Paulhus (1984). The self-deceptive enhancement items relate to socially desirable responding when the person is not aware of it, and the impression management items are focused on claims of overt socially desirable behaviours. The BIDR consists of 40 items that ask individuals to rate how each statement applies to them with response categories on a seven-point scale ranging from 1 = not true to 7 = very true. Examples of items on the self-deceptive enhancement subscale are ‘I don’t care to know what other people think of me,’ and, ‘I am fully in control of my own fate.’

Examples of items on the impression management subscale are ‘I never swear,’ and, ‘I never cover up my mistakes.’ The BIDR is scored by reverse scoring negatively worded items and then adding one point to extreme scores of 6 and 7. Items are then combined to produce two scores: self-deceptive enhancement and impression management. For the American participants, Cronbach’s α s were 0.62, and 0.74 for self-deceptive enhancement and impression management respectively. For the Japanese participants, Cronbach’s α s were 0.64 and 0.69 for self-deceptive enhancement and impression management respectively.²

Establishing equivalence between countries—All measures were translated from English to Japanese and verified using back translation procedures. Structural equation modelling was used to ensure that the instruments in the study were metrically equivalent between the American and Japanese samples (Byrne, 2004; Li & Reb, 2009). Path coefficients were invariant for the relationships among impression management, self-deceptive enhancement, and for all the emotion scores with only one exception (the relationship between impression management and fear), but this relationship was not found to be meaningful in our main analyses.

Results

Cross-cultural differences in emotional expressivity endorsement

A five-way ANOVA was computed using country and participant sex as between-subjects factors, and emotion (anger, contempt, disgust, fear, happiness, sadness, and surprise), setting (public and private), and interactant (alone, parent, older sibling, acquaintance, and professor in 50s) as within-subjects factors. The country main effect was significant, $F(1, 221) = 42.76, p < 0.001, \eta_p^2 = 0.30$, indicating that mean expressivity endorsement scores were higher in the American sample than in the Japanese sample. This interpretation was qualified by a significant country $\times$ emotion interaction, $F(6, 1326) = 4.26, p < 0.001, \eta_p^2 = 0.02$. Simple effects analyses produced significant country differences for anger, contempt, disgust, fear, happiness and surprise, but not for sadness, with contempt having a larger effect relative to the other emotions. The American sample had higher scores than the Japanese sample for all significant emotions, supporting Hypothesis 1 (see Table 1). The country $\times$ gender interaction was not significant, $F(1, 221) = 2.65, ns, \eta_p^2 = 0.01$.

Cross-cultural differences in socially desirable responding

A two-way ANOVA was computed on self-deceptive enhancement using country and participant sex as between-subjects factors. The country main effect was significant, indicating that Americans had higher self-deceptive enhancement scores than the Japanese (see Table 1). There was no country $\times$ gender interaction, $F(1, 312) = 2.75, ns, \eta_p^2 = 0.01$. A two-way ANOVA was computed on impression management using country and participant gender as between-subjects factors. The country main effect was not significant (see Table 1). There was no country $\times$ gender interaction, $F(1, 312) = 1.58, ns, \eta_p^2 = 0.01$. Thus, Hypothesis 2 was partially supported.

²For the American participants, the correlation between the two subscales was $r = 0.12, ns$; for the Japanese participants, the correlation between the two subscales was $r = 0.23, p < 0.01$.

Testing self-deceptive enhancement as a mediator of country differences on display rules

To examine whether cross-cultural differences in emotional expressivity endorsement could be explained by self-deceptive enhancement, a hierarchical multiple regression was performed on the target emotions combined (Total Expressivity of Target Emotion), entering country on the first step and self-deceptive enhancement on the second (Baron & Kenny, 1986). The addition of self-deceptive enhancement significantly increased the amount of variance explained (see Table 2) and the regression coefficient for country decreased, but remained significant (see Table 2). Sobel tests of indirect effects showed that self-deceptive enhancement partially mediated country differences on Total Expressivity of Target Emotion (Preacher & Hayes, 2004) (see Table 2). The same analyses were then run separately for each emotion score, showing that self-deceptive enhancement significantly increased the amount of variance explained for expressivity of anger, disgust, happiness, and surprise, but not for contempt and fear (see Table 2). The regression coefficients for country decreased for each emotion score, but were still significant on the second step. Again, Sobel tests of indirect effects showed that self-deceptive enhancement partially mediated country differences for anger, disgust, happiness, and surprise (Preacher & Hayes, 2004) (see Table 2). The Sobel tests were not significant for contempt and fear. Because there were no significant country differences on impression management, it was not tested as a potential mediator.

Discussion

As predicted, Americans generally endorsed more expression of anger, contempt, disgust, fear, happiness, and surprise than their Japanese counterparts, replicating previous findings (Matsumoto *et al.*, 1998, 2005; Safdar *et al.*, 2009). Americans also engaged in more self-deceptive enhancement than Japanese participants, supporting previous findings (Ewert & Galloway, 2009). However, the Japanese did not differ from the American participants on impression management. This may have occurred because the measure is generally acontextual. If more context was specified, perhaps the Japanese would have exhibited higher scores, which was found to be the case in a study that employed a socially desirable responding measure specific to environmental attitudes (Ewert & Galloway, 2009). Nevertheless, the findings of the current study show that culture is associated with display rules and with an individual's tendency for self-deceptive enhancement.

Most importantly, self-deceptive enhancement partially mediated American–Japanese differences in display rules for anger, disgust, happiness, and surprise. These findings demonstrate that self-deceptive enhancement is related to the expressivity endorsement. This relationship may be explained by viewing an overly positive self-image as a buffer to the social consequences of expressing one's emotions. That is, a person high in self-deceptive enhancement might be more willing to endorse the expression of emotions in various social situations because he or she might be better able to manage the potentially negative consequences of expressing them.

Further, the contribution of self-deceptive enhancement to country differences in display rules was emotion specific. Two of the largest country differences we found were for the endorsement of contempt and fear, but self-deceptive enhancement did not contribute to

these differences. These findings further support the claim that the interpersonal meanings ascribed to each discrete emotion are different (Ekman, 1992). People may learn to manage anger, disgust, happiness, and surprise so well from such an early age that their management is unconscious and automatic, while the management of contempt and fear is not due to differences in the interpersonal nature of these emotions, and thus are not explained by self-deceptive enhancement. Specifically, it could be that self-deceptive enhancement is more likely to be present when considering the display of emotions that have more direct interpersonal functions. For example, fear can be seen as a more primal emotion, as it can often occur without social circumstance (e.g. being afraid of insects); contempt can be seen as more cognitive, as it requires that a judgement be made about the object of one's feelings (e.g. considering another person as unworthy). Perhaps it is this shared indirectness that makes both emotions less related to self-deceptive enhancement. Additionally, it could be that the difference in the endorsement of contempt may be partly due to the lexical issue of the unique meanings of contempt between the USA and Japan (Rosenberg & Ekman, 1995; Rozin, Lowery, Imada, & Haidt, 1999).

In conclusion, the current study found that country differences in display rules between the United States and Japan are partially explained by self-deceptive enhancement, a more 'honest' form of socially desirable responding in which the person genuinely believes in his or her overly positive self-presentation. Socially desirable responding has been included in a class of other response 'biases' (e.g. acquiescence, extreme responding) that have been long-debated as methodological artifacts or personal style (Smith, 2004). This study supports the viewing of socially desirable responding as meaningful reflections of one's personality and culture, rather than a statistical nuisance (Crowne & Marlowe, 1960; Smith, 2004).

The current study was not free of limitation. Self-report measures were used to assess both display rules and socially desirable responding. It is possible that there are some aspects of each construct that were not captured by this methodology. The current study also focused on one mode of expressivity endorsement. It could be that other modes, such as the extent that one is willing to modify expressions of emotion, could yield different findings. Nevertheless, findings from this study offer interesting possibilities for additional research. Future studies on this topic might include culture proxies to empirically examine what aspects of culture influence the relationship between socially desirable responding and display rules. Additionally, it is recommended that future studies examine socially desirable responding and culture in relation to other modes of expressivity endorsement. Lastly, the incorporation of more cultures into future research is encouraged to clarify the relationships between impression management and self-deceptive enhancement to display rules across cultures.

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Table 1
Descriptive statistics and F-tests between countries on DRAI emotion scores and BIDR subscales

Measure	Country	n	M	SD	F	df	η^2
Expressivity of target emotion: anger	USA	222	0.09	0.16	3.85*	1	0.08
	Japan	94	-0.03	0.23			
Expressivity of target emotion: contempt	USA	222	0.10	0.21	14.83***	1	0.19
	Japan	94	-0.14	0.25			
Expressivity of target emotion: disgust	USA	222	0.08	0.19	5.85*	1	0.10
	Japan	94	-0.07	0.24			
Expressivity of target emotion: fear	USA	222	0.07	0.19	8.49**	1	0.12
	Japan	94	-0.10	0.30			
Expressivity of target emotion: happiness	USA	222	0.45	0.11	6.42**	1	0.21
	Japan	94	0.29	0.19			
Expressivity of target emotion: sadness	USA	222	0.13	0.18	1.56	1	0.03
	Japan	94	0.06	0.29			
Expressivity of target emotion: surprise	USA	222	0.38	0.17	4.01*	1	0.08
	Japan	94	0.26	0.24			
Self-deceptive enhancement	USA	222	90.40	13.81	150.51***	1	0.33
	Japan	94	69.82	12.85			
Impression management	USA	222	76.15	17.62	0.02	1	0.00
	Japan	94	77.60	16.30			

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.001$.

Table 2
Results of mediation tests examining self-deceptive enhancement as a mediator of country differences on display rules

Total expressivity of target emotion score	Hierarchical regressions						Sobel tests of indirect effects		
	First step			Second step					
	B	R ²	b	R ²	R ²	R ²	Sobel	z	
Overall emotion	-0.15***	0.17***	-0.11***	0.20***	0.03**	0.03**	-0.04	-3.34***	
Anger	-0.12***	0.08***	-0.06*	0.13***	0.04**	0.04**	-0.06	-3.77***	
Contempt	-0.24***	0.19***	-0.21***	0.20***	0.01	0.01	-0.03	-1.60	
Disgust	-0.15***	0.10***	-0.10**	0.13***	0.03**	0.03**	-0.05	-2.91***	
Fear	-0.18***	0.12***	-0.14***	0.13***	0.01	0.01	-0.04	-1.83	
Happiness	-0.16***	0.21***	-0.12***	0.23***	0.02**	0.02**	-0.03	-2.66*	
Surprise	-0.15***	0.17***	-0.11**	0.11***	0.03*	0.03*	-0.05	-2.97***	

* $p < 0.05$,

**

$p < 0.01$,

$p < 0.001$.

Notes: Coefficients reported are for the effect of country, and are not standardized.