Individual differences in personal humor styles: Identification of prominent patterns and their associates

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ABSTRACT

Considerable recent research attention is evident in the humor and related literature concerning the topic of humor styles. The major focus to date has been on such styles considered individually rather than the combination of styles characteristic of any given person. Information about the latter topic can arguably advance understanding about humor styles and is examined in the present study. A cluster analysis of participants based on their self-ratings regarding Aggressive, Self-defeating, Affiliative, and Self-enhancing humor styles was performed. Four clusters of people were identified consisting of those who score: (1) above average on all of the styles, or (2) below average on all of the styles, or (3) above average on the positive styles (Affiliative and Self-enhancing), and below average on the negative styles (Aggressive and Self-defeating), or (4) above average on the negative styles and below average on the positive styles. Big Five personality and Self-esteem correlates of each cluster are reported and the theoretical, practical, and research implications of the findings are discussed.

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1. Introduction

This study concerns the humor use component of sense of humor, the specific aim being to identify and clarify the nature of distinct clusters of people classified by reference to their profiles on the Humor Styles Questionnaire (HSQ) (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). The HSQ provides measures of four styles, two characterized by Martin et al. as related positively to psychosocial health and well-being (Affiliative and Self-enhancing), and two (Aggressive and Self-defeating) which they describe as negatively related to those variables (p. 72).

Two classes of study concerning the HSQ styles are evident in the literature to date – examinations of correlations between the styles, and investigations of which other individual difference variables are correlated with each style. Martin et al. (2003) report that the two positive styles are positively correlated, as are the two negative ones. Each of the positive styles are also negatively correlated with depression and anxiety, and positively correlated with Self-esteem, Extraversion, Openness (Martin et al., 2003) and Agreeableness (Saroglou & Scariot, 2002). Both negative styles are negatively correlated with Agreeableness and Conscientiousness, as well as being positively correlated with Neuroticism, hostility, and aggression (Martin et al., 2003).

However, simple correlations between the styles cannot provide an accurate indication about the important topic of individual differences in style profiles – that is, the styles characteristic of distinct groups of people. Specification of such differences can potentially enhance understanding about the HSQ styles. For example, it is possible that similar scores on the same styles might not be motivated by the same variables for distinct groups of people. As one illustration, people who score above average on the two negative styles might show that pattern because they are lower in psychosocial health and well-being. However, other people who score above average on the two negative styles may do so because they are Extraverts. Klein and Kuiper (2006) indicate that both of the positive and both of the negative styles can assist a person in gaining acceptance in a group which is widely held to be important for Extraverts (see, for example, Donnellan, Oswald, Baird, & Lucas, 2006).

The present study aims to add to knowledge about the HSQ styles through examination of the psychological characteristics of the people associated with a distinct style pattern. Now, Martin et al. (2003) hypothesized that the HSQ scales will be related to the Big Five personality variables Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism, and to Self-esteem (pp. 51–54). Accordingly, those traits are examined here to assist in interpretation of the style patterns obtained. In terms of these variables, for instance, the abovementioned possibility would be supported by the observation that one group of people who score above average on each HSQ scale score above average on Extraversion, while a different group who score above average on just the negative styles score below average on such things as Self-esteem.

Identification of style patterns can be accomplished by cluster analysis which is appropriate to use where the aim is to categorize...
people who are similar in some regard (Diekhoff, 1992, pp. 361, 377). The widely used k-means cluster analysis (Quickcluster) is employed to that end in the present study. Application of that technique requires the researcher to specify the number of clusters to be generated and produces discrete groups that are usually easy to interpret. Large numbers of cases can be analyzed using Quickcluster which maximizes variability between clusters, and minimizes variability within clusters, which are requirements of a good cluster solution (Hill & Lewicki, 2007). The technique yields meaningful and useful results in research comparable to that undertaken here (for example, Galloway, 2002). However, the investigator will typically have to estimate how many clusters it is best to extract from the data. A degree of trial and error is therefore usually required in choosing the best cluster solution (see Landau & Everitt, 2004, p. 309), which should be done taking into account the interpretability and parsimony of the solutions considered (Diekhoff, 1992, pp. 368–369). There is no one “goodness of fit” test of a given cluster solution (Everitt, Landau, & Leese, 2001).

Existing theoretical perspectives on the functions of humor are suggestive about some of the humor style patterns that would make sense if obtained. These include patterns comprising above average or below average scores on each style (see comments on Extraversion above), as well as ones characterized by above average scores on the positive styles and below average scores on the negative ones, and vice versa (see Martin et al., 2003, pp. 51–53). Although the Big Five and Self-esteem will be appealed to for interpretation of the patterns of humor styles observed here, it is not suggested that these are the only variables that might motivate the patterns obtained. This issue is examined further in discussion of the present results.

2. Method

2.1. Materials and procedure

A survey pack was created consisting of: the International Personality Item Pool (IPIP) which provides measures of each of the Big Five personality constructs (Donnellan et al., 2006); the Rosenberg Self-Esteem Scale (Rosenberg, 1965); and the Humor Styles Questionnaire (Martin et al., 2003). Each of these measures show acceptable levels of reliability. An information statement as well as a demographics data collection sheet were also included in the survey pack. Participants completed and returned the surveys anonymously.

2.2. Participants

A convenience sample of 318 Australian participants (mean age = 36.1 years, SD = 14.7, range = 18–71) returned usable survey packs, which constitutes a response rate of around 65%. The sample comprises 181 females (mean age = 36.1 years, SD = 14.7, range = 18–71), 133 males (mean age = 36.2, SD = 14.7, range = 18–71), and four respondents who did not indicate gender. Approximately half of the total sample consists of undergraduate or postgraduate university students. The remainder of the participants were chosen from the general community through networks available to the researcher.

2.3. Data analysis

As indicated above, k-means cluster analysis (Quickcluster) was used to categorize respondents on the basis of their scores on each of the HSQ styles. Cronbach alphas and mean inter-item correlations were calculated to check the reliability of the abovementioned scales. Pearson correlations and χ² analysis were used to examine other relationships of interest. All statistical procedures were performed using SPSS 14.0 for Windows.

3. Results

3.1. Reliability checks

It is widely assumed that alpha values greater than .7 are required for acceptable reliability (Nunnally, 1978). The alpha values observed for the Big Five personality variables and for Self-esteem in this study (see Table 2) all exceed that value. Table 1 reports the alpha values for each of the humor style measures. The alphas for the Self-enhancing and the Self-defeating humor styles are very close to .70, but those for Aggressive and for Affiliative humor styles are around .60. However, Aron and Aron (2003, p. 607) claim that alphas of .6 or greater are acceptable. In fact, Schmitt (1996) suggests that even a scale with an alpha as low as around .5 may be useful if it has other desirable properties, including meaningful content with respect to the domain covered, and reasonable unidimensionality. In addition, Clark and Watson (1995, p. 316) suggest that the average inter-item correlation is a better measure than coefficient alpha of a scale’s internal consistency, and recommend values should fall within the range .15–.50. Mean inter-item correlations observed in the present study for each humor style scale are: Affiliative = .17, Aggressive = .16, Self-defeating = .21, Self-enhancing = .21. The lower alpha values observed for two of the humor scales were therefore not viewed as posing difficulties for this research.

3.2. Associates of the humor styles

The correlations between the HSQ styles, and between the styles and other individual difference variables, are reported in Tables 1 and 2 respectively. These are provided in order to enable comparison of the findings observed here with those reported in previous studies. This in turn allows a determination of whether the HSQ provides valid measures for the participants tested in the present study. Several of the associations between the humor styles, and between the styles and other individual difference measures, reflect those reported in previous research. Specifically, correlations between the humor styles for the total sample (see Table 1) mirror those reported by Martin et al. (2003). Table 2 reports the associations of the four HSQ styles with Self-esteem and the Big Five personality variables. The findings for the Affiliative and Self-defeating styles reflect those reported by Martin et al. (2003). For the Aggressive humor style, in addition to the significant associations observed by Martin et al. (2003), the present results also identified a significant positive correlation with Extraversion (an association also reported by Saroglou & Scariot, 2002, p. 49), and a significant negative correlation with Self-esteem. Self-enhancing humor style was observed to be associated with all but one (Openness) of the variables it was found to be associated with by Martin et al. The similarities between the patterns of associations observed here for the humor styles and those

<table>
<thead>
<tr>
<th>Humor styles</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliative</td>
<td>.62</td>
<td>.61</td>
<td>.64</td>
<td>.68</td>
</tr>
<tr>
<td>Aggressive</td>
<td>.21</td>
<td>.04</td>
<td>.09</td>
<td>.68</td>
</tr>
<tr>
<td>Self-enhancing</td>
<td>.43</td>
<td>.08</td>
<td>.53</td>
<td>.59</td>
</tr>
<tr>
<td>Self-defeating</td>
<td>.10</td>
<td>.36</td>
<td>.36</td>
<td>.36</td>
</tr>
</tbody>
</table>

Cronbach alphas for each scale are included on the diagonal and are all based on N = 318.

* The correlation is significant, p < .05.
obtained in other studies are consistent with the suggestion that the HSQ does provide a valid measure of humor style for the participants in this study.

3.3. The cluster analysis

As indicated above, k-means cluster analysis was used to identify categories of people characterized by distinct patterns of scores on the HSQ scales. Participants’ mean raw scores on each of the four humor styles and on each of the Big Five personality variables as well as Self-esteem were transformed into z scores to facilitate interpretation of the results. Several k-means cluster analyses were conducted, with a four-cluster solution judged to be the most appropriate. Specifically, as indicated below, each of the four clusters are easily interpretable within existing theoretical frameworks. The four-cluster solution is also more parsimonious, given that five and six cluster solutions which were also examined resulted in a replication of, respectively, one or two of the clusters in the four-cluster solution. As indicated above, interpretability and parsimony are criteria for deciding on the best cluster solution. The mean z scores on each humor style by cluster and the percentage of participants in each cluster was examined in order to assist interpretation of the patterns of styles identified (see Table 3). A significant chi square value ($\chi^2 = 8.4, df = 3, p < .05$) is associated with these numbers indicating differences between clusters regarding the expected and observed proportions of males and females in each. Specifically, Clusters 1 and 4 comprise a larger than expected proportion of males, and Clusters 2 and 3 contain a greater proportion of females than expected. These results are examined in more detail below.

4. Discussion

4.1. The nature of the clusters

The personality and gender-based profiles of each cluster of people identified here are suggestive about possible determinants of the style patterns observed. Specifically, the members of Cluster 1 (above average on each style) are outgoing and open to new experiences. They are also impulsive given that they scored below average on Agreeableness and Conscientiousness but are close to the mean on Self-esteem and Neuroticism. Members of Cluster 2 are above average on Openness and Extraversion, and below average on Conscientiousness and Agreeableness, but are close to the mean on Self-esteem and Neuroticism. Members of Cluster 4 are above average on each style, and Cluster 3 members are above average on Self-defeating and below average on Conscientiousness, Agreeableness. They are also below average on Neuroticism, and close to the mean on Conscientiousness and Neuroticism.

The number of males and females in each cluster was examined in order to assist interpretation of the patterns of styles identified (see Table 5). A significant chi square value ($\chi^2 = 8.4, df = 3, p < .05$) is associated with these numbers indicating differences between clusters regarding the expected and observed proportions of males and females in each. Specifically, Clusters 1 and 4 comprise a larger than expected proportion of males, and Clusters 2 and 3 contain a greater proportion of females than expected. These results are examined in more detail below.

### Table 2
Correlations of the humor styles with Self-esteem and Big Five personality variables.

<table>
<thead>
<tr>
<th>Humor styles</th>
<th>SE</th>
<th>O</th>
<th>E</th>
<th>A</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliative</td>
<td>.84</td>
<td>.70</td>
<td>.78</td>
<td>.82</td>
<td>.71</td>
</tr>
<tr>
<td>N's</td>
<td>305</td>
<td>306</td>
<td>310</td>
<td>309</td>
<td>310</td>
</tr>
<tr>
<td>Aggressive</td>
<td>.40</td>
<td>-.13</td>
<td>.68</td>
<td>-.27</td>
<td></td>
</tr>
<tr>
<td>N's</td>
<td>97</td>
<td>66</td>
<td>74</td>
<td>59</td>
<td></td>
</tr>
</tbody>
</table>

SE = Self-esteem; O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism.

### Table 4
Mean z scores by cluster for Self-esteem and Big Five personality variables.

<table>
<thead>
<tr>
<th>Clusters</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>-.01</td>
<td>-.12</td>
<td>.50</td>
<td>-.30</td>
</tr>
<tr>
<td>Openness</td>
<td>.23</td>
<td>.09</td>
<td>.01</td>
<td>-.27</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.33</td>
<td>.39</td>
<td>.27</td>
<td>-.11</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.43</td>
<td>-.35</td>
<td>.23</td>
<td>-.45</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.32</td>
<td>.05</td>
<td>.55</td>
<td>-.35</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.10</td>
<td>.02</td>
<td>.45</td>
<td>.12</td>
</tr>
</tbody>
</table>

* See Table 3 for description of clusters.

### Table 3
Observed and expected percentages of males and females in each cluster.

<table>
<thead>
<tr>
<th>Clusters</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females (N = 168)</td>
<td>93</td>
<td>61</td>
<td>73</td>
<td>56</td>
</tr>
<tr>
<td>Number in each cluster</td>
<td>49</td>
<td>22</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Expected% of males in each cluster = 43%</td>
<td>49%</td>
<td>67%</td>
<td>65%</td>
<td>49%</td>
</tr>
</tbody>
</table>
| Observed% of males in each cluster = 43% | 51% | 33% | 35% | 51% 

* Cluster 1 = above average on each style; Cluster 2 = below average on each style; Cluster 3 = above average on the positive styles, below average on the negative styles; Cluster 4 = above average on the positive styles, below average on the negative styles.
scored above average on Extraversion which is positively associated with sensation seeking (Eysenck & Zuckerman, 1978). Higher Impulsivity is also associated with liking of arousal (Acton, 2003), as is higher Openness (Arnett, 1994). Furthermore, as reported in Table 5, Cluster 1 contains a greater than expected proportion of males, males tending to like arousal more than do females (Galloway, Mitchell, Getz, Crouch, & Ong, 2008). Now, as indicated earlier in this paper, each humor style can facilitate social interaction which in turn is a source of arousal. Furthermore, arousal theories of humor propose that it involves an increase in, and then reduction of, arousal/tension (see Martin, 2007). Given this, the above average scores on each humor scale characteristic of Cluster 1 can be viewed as consistent with a desire of under-aroused individuals to increase their arousal levels.

On the other hand, the above average scores on Conscientiousness and below average scores on Extraversion associated with members of Cluster 2 are consistent with them being higher in base arousal (Revelle & Loftus, 1990). Cluster 2 also contains a greater than expected percentage of females, and females tend to like arousal less than do males (Galloway et al., 2008). The below average scores for members of Cluster 2 on each of the HSQ scales are therefore consistent with a desire to avoid increasing an already high base arousal.

The members of Cluster 3 (above average on the positive styles, below average on the negatives) can be portrayed as well-balanced, low in anxiety, and positive towards themselves and others. Such people enjoy higher status in groups and other interpersonal contexts (see Robins, Hendin, & Trzesniewski, 2001, p. 160), and are motivated to maintain or enhance positive feelings about themselves (Burton, Westen, & Kowalski, 2009). Given this, their above average scores on the positive humor scales are not surprising. The positive styles can reinforce their already positive relationships with those who afford them higher social status. This could involve use of more lighthearted humor content, such as satire, irony, and philosophical humor.

The people in Cluster 4 (above average on the negative styles, below average on the positives) can be described as not being open to new experiences as well as being negative towards themselves and others. Such people might use humor to defend against perceived threats to their self-image. Specifically, their use of aggressive humor might help such individuals deny to themselves and others that they harbor feelings of low self-worth.

An obvious issue for further research concerns whether the patterns of humor styles and their individual difference correlates observed here replicate for samples similar to the present one. Replication of the results would serve to increase confidence in the reliability of the patterns observed. Another important issue concerns whether the present patterns replicate in cultures different from the Australian one and, if not, which aspects of a given culture influence the style profiles of its members.

5. Suggestions for further research

5.1. Replication of the patterns of humor styles and their associates

Another issue for future research concerns the effects particular patterns of humor styles bring about. For instance, the aggressive style characteristic of people in Cluster 4 (who are not open to new experiences as well as being negative towards themselves and others) might reduce perceived threats to their self-image. However, such humor might also occasion a negative reaction towards the user from those it is directed at which might reinforce the user's lower self-image. The self-defeating style associated with Cluster 4 might also negatively influence self-image because it involves self-criticism and emotional repression (Martin et al., 2003). The below average scores on each of the HSQ scales associated with individuals who are restrained, highly focused and organized (Cluster 2) could in some contexts have the desired effect of lessening interactions with others. However, this could also give rise to anxiety-arousing negative reactions from other people. Examination of such issues would best be carried out using a longitudinal research design (see Galloway & Cropley, 1999).

Furthermore, the personality links identified here for the people associated with a particular humor style pattern also provide a basis for suggestions about some of the other variables it might be worth investigating in order to increase knowledge about the motivators of such patterns. For instance, each of the personality variables members of Clusters 1, 2, 3, and 4 score above or below the mean on are related to one or more of the variables locus of control, generalized self-efficacy, self-monitoring (Barrick, Parks, & Mount, 2005; Graziano & Ward, 1992; Judge, Erez, Bono, & Thoresen, 2002), and sensation seeking (Eysenck & Zuckerman, 1978). Of course, it is an empirical question for further research whether above or below average scores on the personality traits examined in this study are associated with higher or lower mean scores on other variables the former are correlated with individually. The observation that such is the case for some or all of the abovementioned variables will result in greater understanding about the motivators of style patterns and could be useful regarding such things as how to address problems associated with a particular style profile.

For instance, as indicated above, the style pattern characteristic of Cluster 4 could occasion detrimental effects for members of that cluster. Now, relationships reported in the abovementioned studies raise the possibility that members of Cluster 4 might be below average on self-monitoring and generalized self-efficacy, and more
external locus of control. Lower self-monitors appear to be less able than are higher self-monitors to use feedback from others as a basis to manage their own behaviour (Lammers, 1991). People who are lower in generalized self-efficacy tend to feel that they cannot perform well in various situations, and those characterized as more external locus of control are more likely to believe that other people and events are primarily responsible for the positive and negative outcomes of their behaviour (Judge et al., 2002). If those features do indeed characterize people who score above average on the negative styles and below average on the positives then assisting them to adopt more adaptive attitudes and behaviours might reduce their propensity to use negative humor styles when interacting with others. Relevant to that aim is the observation that people who are higher in external locus of control are more likely than are internals to change their attitudes when presented with a compelling message (Judge et al., 2002).

As also noted above, people who score below average on each HSQ scale (Cluster 2 in this study) could occasion a negative reaction from other people in some situations. The abovementioned research raises the possibility that people with the personality profile identified here for the members of Cluster 2 might be low self-monitors. If that turns out to be the case, then assisting them to take into account the feedback from others about their behaviour might help them to be more aware of and avoid the negative effects of their style profile.

6. Conclusions

The present study has increased knowledge about the nature of the HSQ humor styles beyond what can be known about them through examination of simple correlations between individual styles and other variables by identifying the distinct style patterns that characterize different people and some personality traits which appear to motivate such patterns. A key finding of this research is that simple correlations are in many cases uninformative about how the humor styles and personality will be related for different people. Further productive research on this topic should examine the replicability of the style profiles identified here in different cultures as well as which other personality and individual difference variables motivate distinct humor style profiles. Such information could in turn have practical applications regarding such things as how best to address difficulties associated with particular style patterns.

References