

The Humor Styles Questionnaire: a critique of scale construct validity and recommendations regarding individual differences in style profiles

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Abstract

This paper examines the construct validity of the Humor Styles Questionnaire (HSQ) – that is, whether scores on the scale adequately reflect adaptive or maladaptive humor use which is causally related to psychosocial well-being, and considers how research on distinct groups of people defined in terms of their style profiles can clarify the nature of the styles. A number of concerns about scale content are raised, including that coverage of relevant issues and wording of some scale items are problematic; rating scales used to assess humor use require revision; the extent of influence of non-humor components of the items is unclear; and the items associated with any style do not accurately indicate its motivation. Findings concerning style profiles indicate the same style can perform different functions for different people (relationship/stimulation seeking, or self-defense) and also differ from those typically observed in studies of HSQ convergent, divergent, and criterion validity. Further research should take into account the methodological issues discussed and focus on the style profiles and humor content and structure preferences of humor users *and* their audiences. Reasons to view the styles as predictive of but not causally related to psychosocial well-being are also provided.

Keywords: [HSQ construct validity](#); [humor and psychological well-being](#); [humor style profiles](#)

1 Introduction

Sense of humor is an individual difference construct which is of research interest in many academic disciplines as well as being the subject of popular media attention. People's sense of humor includes features of humor liked and used, ability to create and comprehend humor, propensity to interpret various everyday experiences including one's own behavior as humorous, memory for situations which can evoke humor, and frequency of humor production ([Ruch 1998](#)).

One aspect of sense of humor which has attracted a great deal of research attention concerns the relationship of humor use to psychosocial well-being. [Martin et al. \(2003\)](#) noted that such a connection is expected but that empirical evidence supporting it was weak possibly because the instruments used up to that time to assess sense of humor do not distinguish potentially adaptive from maladaptive humor use and that one kind of use *in the absence of the other* might be related to positive or negative well-being. In order to address that issue Martin et al. developed the Humor Styles Questionnaire (HSQ) which is based on a model of humor use derived from a review of theoretical and clinical literature about the relationship between humor and well-being. Two motives for humor use – enhancement of the self and enhancement of one's relationships with others, and two ways of manifesting each motive – benign (adaptive) or detrimental (maladaptive) to self or others – were suggested and provide the basis for the styles proposed. In particular, self-enhancement can be attempted through a positive (self-enhancing) humor style or a negative (aggressive) style and relationship enhancement can involve a style which is positive (affiliative) or negative (self-defeating) (see [Martin et al. 2003](#): 52–54). Each of the four styles is indexed by one of the four eight item self-report scales corresponding to it in the HSQ. As stated by [Martin et al. \(2003 p. 51\)](#) “The HSQ is not viewed as a comprehensive measure of all components of sense of humor ... but rather it focuses on the interpersonal and intrapsychic functions that humor is made to serve by individuals in their everyday lives and particularly those functions that are considered most relevant to psychosocial well-being.”

This paper examines the construct validity of the HSQ – that is, whether scores on the scale adequately reflect adaptive or maladaptive humor use for self or relationship

enhancement which is causally related to psychosocial well-being (Martin et al. 2003: 51). Although some researchers use the term construct validity to refer just to test convergent and divergent validity – see for example, Heintz and Ruch (2015: 614), according to Urbina (2004: 158, 162) current thinking about construct validity is that it should be viewed as one all-inclusive concept which encompasses test content, patterns of convergence and divergence characteristic of test scores, and relationships of test scores to criteria the test was designed to assess or predict. Accordingly, all of those features will be examined in regard to the HSQ's construct validity and several issues requiring further examination are identified. In addition, it is suggested that findings concerning distinct groups of people differentiated from each other in terms of their profiles on the HSQ styles provide a more accurate indication about several aspects of the styles than does analysis of just single HSQ styles and various suggestions about how research on style profiles can productively proceed are provided.

2 HSQ construct validity

2.1 HSQ content

A test's content validity refers to its coverage of and relevance to the constructs it was designed to index. Ideally, test content will appear in the intended way to those taking the test – that is, the test will have face validity (Urbina 2004: 168). However, several questions can be raised regarding the appropriateness of HSQ content which are considered in the remainder of this section.

2.1.1 Which motivations for humor use are indexed by the HSQ?

The alleged motivations for the HSQ styles are described in Martin et al. (2003: 51–53). Now, although for some people affiliative and self-defeating styles might be motivated by a desire for relationship enhancement, and the self-enhancing and aggressive styles could reflect a desire for self-bolstering as they suggest, it is possible that for others those styles reflect different motivations. Specifically, the affiliative style could be motivated by a desire for maintenance/enhancement of a positive self-concept – attempting to

maintain or bolster one's positive mental health by being positive to others which hopefully increases the likelihood they will also be positive to oneself or at least not negative; the aggressive style might reflect a desire to bond with one's valued associates by attacking "out-group" members; the self-defeating style might be motivated by a desire to deny to oneself and others that there are psychosocial problems which in turn could perform a self-enhancing function, and the self-enhancing style could be useful for increasing one's attractiveness to social groups whose acceptance one desires (see [Galloway 2010](#); [Martin et al. 2003](#)). [Galloway \(2010\)](#) has examined these possibilities empirically as discussed in [Section 2.2](#). The results of that study are consistent with the abovementioned possibilities. Specifically, for some people a given style seems to be motivated by a desire for relationship enhancement whereas for others the same style appears to reflect a self-enhancement motivation.

2.1.2 Is the HSQ relevant to all of the proposed features of the styles?

[Heintz and Ruch \(2015\)](#) indicate that some features of the definitions or descriptions of three of the styles are not mentioned in the HSQ operationalizations of them. For example, items in the affiliative scale make no mention of aspects of friendly teasing; the self-enhancing scale does not include mention of the benign aspect concerning others the style is supposed to be characterized by; and the aggressive scale does not refer to use of such humor to enhance oneself. Heintz and Ruch's investigation of this issue is discussed in [Section 2.2](#).

2.1.3 Does Item Response Theory analysis support the adequacy of HSQ content?

As indicated by [Urbina \(2004: pp. 238–242\)](#) item response theory provides an alternative to classical test theory for the development of new tests and evaluation of existing tests (see [Cappelleri et al. 2014: 654–661](#) for a detailed description of the features of IRT and requirements for such analysis). [Silvia and Rodriguez \(2020\)](#) have used Item Response

Theory (IRT) to examine HSQ content and have made several suggestions for further research on the scale. Specifically, they propose that examination of the HSQ should:

1. examine the relative merits of using a three-, four- and five-point rating scale.
2. aim to make difficulty and readability of scale items and number of reversed items per scale more comparable and avoid simple negation wording for reversed items.
3. revise or delete less informative scale items (see pp. 12–13).

2.2 Patterns of convergence and divergence characteristic of scores on the HSQ styles

One aspect of the construct validity of a test concerns whether test scores show the expected positive or negative relationships with other constructs they should be related to (convergence) and absence of a relationship with constructs they should not be related to (divergence) ([Urbina 2004](#): 171). Aspects of the HSQ examined regarding these issues are as follows.

2.2.1 Internal consistency of style items

Measures of scale reliability as well as factor analysis of the items conducted by [Martin et al. \(2003\)](#) indicate that style internal consistency is satisfactory. Specifically, they found that reliabilities (indexed by Cronbach alpha) of the items associated with a given style were acceptable (ranging from 0.77 to 0.81). A principal components factor analysis of the 32 HSQ items indicated that a four factor solution was best with all items loading above 0.40 (with most above 0.50) on the factor they were supposed to be associated with and less than 0.25 (most below 0.10) on the other factors. The four factor model was also tested using a confirmatory factor analysis and was found to provide a good fit to the data. In addition, Item Response Theory analysis by [Silvia and Rodriguez \(2020: 7–8\)](#) regarding reliability and dimensionality of the HSQ scales also supports their acceptability.

However, [Reff \(2006\)](#) factor analyzed a revised version of the HSQ designed to overcome difficulties he claimed characterized the content of the original version – specifically, that the situations asked about are “vague and general” (p. 37) and in need of a more specific characterization (p. 38). To address this issue Reff constructed items to index the styles that mention a specific situation as well as a humorous response to it. The factor analysis of participants’ ratings of Reff’s situation-response version of the HSQ identified three not four styles – the two negative styles aggressive and self-defeating and just one positive style comprising the alleged affiliative and self-enhancing items. However, a possible reason for the failure to identify the two positive styles proposed in the original HSQ is that all of Reff’s revised affiliative and self-enhancing items mention negative life events and a humorous response to them. The use of humor to cope is one of the characteristics proposed by [Martin et al. \(2003: 53\)](#) for the self-enhancing style. Given this, the positive style identified in Reff’s study might really relate to self-enhancement and his findings do not provide strong evidence against the four styles included in the original HSQ.

2.2.2 Style intercorrelations

The test-retest reliabilities identified by Martin et al. for each style administered on two separate occasions separated by one week were all significant and 0.80 or above (p. 60) which indicates that the test scores are stable which is expected if the HSQ indexes trait rather than state features of humor use. However, several of the correlations between the different styles were significant. Research by [Galloway \(2010\)](#) on individual differences in people’s *profiles* on all of the HSQ styles also indicates that the styles are related. Specifically, Galloway identified four distinct style profiles: (1) above average on all styles, (2) below average on all styles, (3) above average on the positive styles and below average on the negative styles, and (4) above average on the negative styles and below average on the positive ones. These results can be seen as being consistent with Martin et al.’s view that the distinction between positive and negative uses of humor is one of degree and not a dichotomy and that the *same* humor style can perform different functions (pp. 52–53).

2.2.3 Relationships of the HSQ styles to other measures of sense of humor

Associations of HSQ styles to various established sense of humor measures were examined by [Martin et al. \(2003: 63–65\)](#). The positive correlations observed for the positive HSQ styles with the other humor-related scales in general support the appropriateness of those styles – they are related to other measures of allegedly the same thing. The divergence of the aggressive and self-defeating styles from some other humor scales indicated by nonsignificant correlations can also be seen as supporting the contention that, as they were designed to do, the HSQ negative styles index different aspects of sense of humor from the features assessed in those other scales.

[Ruch and Heintz \(2013\)](#) also observed nonsignificant correlations of the HSQ aggressive and self-defeating styles to other measures of humor (the Sense of Humor Scale – [McGhee 1999](#), the Short Measure of Adult Playfulness – [Proyer 2012](#), and the Coping Humor Scale – [Martin and Lefcourt 1983](#)). These humor measures were significantly related to the affiliative and self-enhancing styles. However, they also examined another version of the HSQ which kept reference to humor but excluded mention of the context of humor use (the Humor HSQ – see [Ruch and Heintz 2013: 21–22](#) for the items used) for each of the four styles. The Humor HSQ scales for the affiliative and self-enhancing styles were significantly related to all of the other humor measures. However, contrary to [Martin et al.’s \(2003\)](#) claim that the HSQ indexes negative aspects of humor not assessed by other humor scales it was observed that, with the exception of the Coping Humor Scale, the Humor HSQ scales for the aggressive and self-defeating styles *were* significantly related to the other humor measures examined. [Ruch and Heintz \(2013\)](#) argued that these results “challenge the novelty and unfavourableness of the humor components of the aggressive and self-defeating humor styles” (p. 19).

2.2.4 Associations of the styles with socially desirable response bias

Socially desirable response bias (SDR) refers to the tendency of some people to portray themselves in a manner they deem more socially/politically desirable or acceptable. Two

classes of such bias have been identified – impression management (consciously misrepresenting one’s views in order to impress others), and self-deceptive positivity (an honest but overly positive self-presentation) (Paulhus 1991: 21).

Martin et al. (2003) used the Marlowe-Crowne Social Desirability Scale (MCSD) (Crowne and Marlowe 1960) to examine whether SDR is associated with the HSQ styles. It was observed that the affiliative, self-enhancing, and self-defeating styles were not significantly related to scores on the MCSD but scores on the aggressive style were – lower scores on that style were associated with higher SDR. However, as Martin et al. point out the correlation between scores on the aggressive style and the MCSD is not unexpected because both concern propensity to admit to negatives about oneself – that is, the two scales are measuring the same thing (p. 57).

However, the MCSD indexes impression management (Paulhus 1991: 29) but there are grounds to expect that the positive styles might be related to self-deceptive positivity. Specifically, self-esteem is positively related to those styles (Galloway 2010) and to self-deceptive positivity (Ewert and Galloway 2009). This type of SDR can be controlled using the Paulhus Balanced Inventory of Desirable Responding (BIDR)

(Paulhus 1991: 37). Additionally, a more detailed examination of impression management can be undertaken by reference to faking good/faking bad (Anastasi and Urbina 1997: 374–376). Although faking good should be positively related to positive impression management which does not appear to be a problem for the HSQ styles, the propensity of some people to portray themselves in a negative way (which in regard to the HSQ would involve dishonest high self-ratings on the negative styles and low ratings on the positive ones) needs to be considered.

2.2.5 Relationships of the HSQ styles to their target constructs

Heintz and Ruch (2015) investigated whether the indexes of the four styles provided by the HSQ are associated in the expected ways with the features supposed to characterize each one. Specifically, they examined the relationship between HSQ scores and the

motivations [Martin et al. \(2003\)](#) attributed to the styles – their definitions, as well as the descriptions of each style they provided – their expected behavioral manifestations. In regard to convergent validity, the HSQ index of the self-defeating style was highly correlated with its definition and description. However, although the HSQ measures of the other three styles were highly correlated with their descriptions, they were not as strongly related to their definitions (p. 619). Regarding the divergent validity of scores on the HSQ in regard to their definitions and descriptions the aggressive and self-defeating styles were generally satisfactory, but the affiliative and self-enhancing styles were difficult to distinguish from each other (p. 620).

However, [Martin \(2015\)](#) has questioned the relevance of Heintz and Ruch's findings to HSQ convergent and divergent validity. Specifically, he raises the methodological concerns that: Heintz and Ruch's study used only one measurement approach; the psychometric properties of the items used to index the motivations and expected manifestations assumed to be associated with the HSQ styles are problematic; some of the correlations observed might have been low because they were based on items that lack quantifiers and include technical terms and ask respondents to analyze their motivations for humor use which add to item difficulty. [Martin \(2015\)](#) also points out that the failure of a measurement instrument to conform completely to its original conceptualization does not necessarily mean it is invalid, and that conceptualizations of constructs typically do change as a result of research on them.

In response to Martin's methodological concerns, [Heintz and Ruch \(2016: 126–128\)](#) point out that their results are relevant to questions about the convergent and divergent validity of the HSQ. Specifically, although problematic psychometric properties of the style definitions and descriptions can affect the size of their correlations with the HSQ styles the qualitative features of those interrelationships are more important and raise concerns about HSQ convergent and divergent validity, and the presence or absence of quantifiers did not appear to influence the size of the correlations obtained. Furthermore, they argued that even if technical terms and possible motives for humor use were to be omitted it is unlikely qualitatively different patterns of intercorrelations would be

observed. In fact, no significant differences were found in the size of the correlations of the HSQ measures to items which contained such mention and those that did not. Heintz and Ruch maintain that differences in the wording or the psychometric properties of the definitions and descriptions of the styles cannot account for the low convergence and mismatches of some of them to the HSQ scale they should be associated with conceptually (p. 128).

Regarding Martin's comments that deviation of the HSQ from its original conceptualization does not necessarily invalidate it Heintz and Ruch point out that nevertheless the patterns of correlations indicate that the convergent and divergent validity of the HSQ are problematic. They also suggest that a reconceptualization of constructs underlying the HSQ might necessitate adjustment of the scale designed to measure them and that in any event there is a need to "develop formal models and eventually a theory of the humor styles" (p. 129). Clearly, such changes should be reflected in an up-dated version of the HSQ which needs to be examined regarding whether it better reflects what the HSQ was designed to index.

2.2.6 The role of humor in associations characteristic of the HSQ

[Ruch and Heintz \(2013\)](#) have raised concerns that the associations observed between HSQ styles and psychosocial well-being might not be attributable to the humor use referred to in the HSQ indexes of the styles. Specifically, in their first study they observed significant medium to large simple correlations of the affiliative, self-enhancing, and self-defeating styles with several well-being constructs. However, when personality (indexed by the Big-5) was controlled the strength of those relationships reduced to negligible or small. Ruch and Heintz suggested that the context components mentioned in many of the HSQ items (such as the social setting of humor use, intention for such use, or moods characteristic of the humor user) might overlap with personality which could be the reason why controlling the effects of personality resulted in a reduction of the strength of the HSQ's association with well-being (p. 8). That possibility was examined through use of a non-humorous version of the HSQ (the Context HSQ – [Ruch and Heintz 2013](#): 21–22 report the items used) which keeps the contexts of humor

use mentioned in the original HSQ but which does not refer to humor. When the effects of the Context HSQ were controlled the strength of the correlations characteristic of the HSQ's associations with well-being reduced to small. Ruch and Heintz concluded that the associations of the HSQ styles to psychosocial well-being are inflated by inclusion in the HSQ items of the contexts of humor use.

2.3 Criterion validity of the HSQ

A test's criterion validity comprises its concurrent validity (associations of test scores with states of affairs the test was designed to identify which is assessed based on test and criterion scores obtained at the same time) and its predictive validity (relationships of test scores with future criteria the test was designed to predict) (Anastasi and Urbina 1997: 118–119). The criteria which have been most frequently examined regarding the HSQ are everyday humor behavior and psychosocial well-being as described in what follows.

2.3.1 HSQ styles and everyday humor use

The association between self-ratings of a given HSQ style and whether that style is used in everyday life provides an index of the test's ability correctly to identify real-life use of that style (the test's sensitivity) and the style's relationship to different HSQ styles in everyday humor use indexes the test's ability to differentiate one style from different ones (the test's specificity). Martin et al. (2003) investigated this by correlating people's self-ratings on each HSQ style with their partner's ratings of their styles. The correlations between the two ratings for each style were all positive and significant.

Further investigations of HSQ associations with everyday humor behavior have yielded similar findings. For instance, Findlay and Jones (2005) investigated the agreement between people's self-ratings of their HSQ styles and their partner's and friend's ratings of them on the styles and found "moderate agreement between the three judgments" (p. 204). Cann et al. (2011) investigated the agreement between self-reports and partner-reports for the HSQ styles and found small to medium strength associations for each scale. Zeigler-Hill et al. (2013) investigated the self-peer agreement of the HSQ ratings

and found small (for self-enhancing) to medium relationships (for the affiliative, aggressive, and self-defeating styles). [Heintz \(2019\)](#) found medium sized correlations between self-ratings and others' ratings for each style.

2.3.2 HSQ styles and psychosocial well-being

One aspect of psychosocial well-being which has been examined in regard to the HSQ styles is personality. For example, [Martin et al. \(2003: 68–70\)](#) examined associations of the individual HSQ styles to the Big 5 personality constructs openness, conscientiousness, extraversion, agreeableness, and neuroticism ([Digman 1990](#)) as well as positively and negatively valued features of masculinity and femininity. The affiliative and self-enhancing styles were positively related to extraversion, openness, and positive masculinity and were negatively correlated with negative femininity. The affiliative style was also positively correlated with positive femininity and the self-enhancing style was also negatively correlated with neuroticism and positively correlated with agreeableness. The aggressive and self-defeating styles were both positively correlated with neuroticism and negative masculinity and negatively correlated with agreeableness, conscientiousness, and positive femininity. Other findings of the HSQ's associations with the Big 5 (for instance, [Brown et al. 2019](#); [Galloway 2010](#); [Mendiburo-Sequel et al. 2015](#); [Plessen et al. 2020](#); [Ruch and Heintz 2013, 2017](#)) are generally consistent with Martin et al.'s results for those personality constructs.

Other personality correlates of the HSQ have also been examined. For instance, [Veselka et al. \(2010\)](#) investigated correlations between the HSQ humor styles and the Dark Triad traits of personality. Psychopathy and Machiavellianism were positively correlated with the aggressive and self-defeating humor styles, whereas Narcissism was positively correlated with the affiliative and self-enhancing styles.

[Zeigler-Hill et al. \(2016\)](#) examined the associations between the pathological personality traits assessed by the Personality Inventory for the DSM-5 (PID-5) and the HSQ humor styles. Negative affectivity and detachment were negatively associated with the affiliative and self-enhancing styles. Antagonism was positively associated with the aggressive

humor style but negatively associated with the affiliative style. Disinhibition was positively associated with the aggressive and self-defeating styles, and psychoticism was positively associated with the self-defeating style. [Meyer et al. \(2017\)](#) observed that borderline personality disorder traits were negatively correlated with the self-enhancing style and positively correlated with the self-defeating style, but were not significantly correlated with the affiliative and aggressive styles. [Schermer et al. \(2013\)](#) found that the general factor of personality correlated positively with the affiliative and self-enhancing styles and negatively with the aggressive and self-defeating styles.

Associations between the HSQ styles and other features of psychosocial well-being have also been investigated. Specifically, [Martin et al. \(2003\)](#) examined correlations of the HSQ styles with depression, hostility, anxiety, self-esteem, aggression, optimism, general well-being, psychological and bodily symptoms, social intimacy and social support. In general, scores on the positive styles (affiliative and self-enhancing) are positively correlated with the positive and negatively correlated with the negative well-being indexes, and scores on the negative styles (aggressive and self-defeating) are positively correlated with the negative and negatively correlated with the positive constructs (pp. 65–66).

[Nezlek et al. \(2020\)](#) found that the daily use of affiliative and self-enhancing humor was positively related to daily positive events and negatively related to daily negative events. The affiliative and self-enhancing styles were also observed to be positively related to positively valent measures of well-being (e.g., self-esteem), and were negatively related to negatively valent measures of well-being (e.g., rumination). In contrast, the use of self-defeating humor was negatively related to positive well-being and positively related to negative well-being. The use of aggressive humor was unrelated to well-being.

The incremental validity of the HSQ has also been examined by [Martin et al. \(2003: 67–68\)](#). Incremental validity provides another source of evidence about a test's criterion validity ([Urbina 2004: 191](#)). The HSQ styles were associated with a significant increase in variance explained in self-esteem, depression, anxiety, optimism, and general well-being compared to other tests of sense of humor.

However, a profiles analysis of the HSQ indicates that such relationships are not the case for everyone. Specifically, as described in [Section 2.2.2](#) above, [Galloway \(2010\)](#) identified four distinct style clusters. Associations of each cluster to Big 5 personality constructs indicate that the same HSQ style is associated for some people but not for others with the constructs it is expected to be related to given [Martin et al.'s \(2003\)](#) original conceptualization of the HSQ styles. Specifically, above average scores on just the affiliative and self-enhancing styles were observed to be positively correlated with scores on extraversion, agreeableness, and conscientiousness and negatively related to neuroticism. Above average scores on only the negative styles were negatively correlated with scores on openness, extraversion, and agreeableness. However, people who are above average on all the styles are below average on conscientiousness and agreeableness and above average on openness and extraversion (p. 565).

[Martin et al. \(2003\)](#) observed that scores on the [Rosenberg \(1965\)](#) self-esteem scale are positively related to both positive styles and negatively associated with the self-defeating style. Consistent with this [Galloway \(2010\)](#) found that people who are above average on just the positive styles have above average scores on that self-esteem scale and people who score above average on only the negative styles score below average on the scale. However, for people who are above average on the positive and the negative styles there is no relationship with that measure of self-esteem (this result was replicated by [Galloway 2020](#)).

Martin et al. also reported positive correlations between scores on the [Ryff \(1989\)](#) index of well-being and the positive HSQ styles and a negative correlation between that measure and the self-defeating style. However, in a profiles-based study of the associations of HSQ styles to scores on the Ryff well-being index, [Sirigatti et al. \(2016\)](#) found that people who are above average on just the positive styles score higher on that measure compared to those who are above average on the positive as well as the negative styles. Furthermore, Martin et al. reported that the affiliative and self-enhancing styles are negatively correlated with scores on the State-Trait Anxiety Inventory (STAI) ([Spielberger et al. 1969](#)) and the Centre for Epidemiological Study Depression Scale

(CES-D) ([Radloff 1977](#)) and the self-defeating style is positively correlated with those measures. Now, the data collected for [Galloway's \(2020\)](#) profiles-based examination of the HSQ also included responses to the STAI and the CES-D scales. Both indexes were negatively related to membership in the cluster of people who were above average on just the positive styles and positively related to membership in the cluster of those who were above average on only the negative styles but were not related to membership in the cluster characterized by above average scores on all the styles.

3 General discussion and further research requirements

This critique has highlighted several concerns about HSQ construct validity which provide a basis for suggestions about further research on the scale as detailed in what follows.

3.1 Motivations for the HSQ styles

3.1.1 Profile analysis indicates style motivations

As argued above, it is only through examination of people's profiles on all of the HSQ styles that their motivation for humor use can be correctly identified. Profiles analysis indicates a self-defense motivation for the clusters of people who are above average on just the positive styles or above average on only the negative styles. Now, as indicated by [Bowins \(2004\)](#), many defense mechanisms can be viewed as performing a cognitive distortion function. Further, [Erdogan et al. \(2022\)](#) report that higher self-esteem is associated with the use of "mature" defense mechanisms whereas people characterized by lower self-esteem tend to use "immature" defenses. Propensity to use positive humor is also included in the widely used and researched Defense Style Questionnaire (DSQ) ([Andrews et al. 1993](#)) as a "mature" defense mechanism and has been reported by [Thygesen et al. \(2008\)](#) to load significantly on a factor which they referred to as an "adaptive" defense mechanism.

Given this, above average use of only the positive humor styles can be seen as an attempt to defend maturely the higher self-esteem characteristic of such people through positive cognitive distortion – seeing the world through “rose colored glasses” (see also the comments on self-deceptive positivity in [Section 2.2.4](#) above). This enables such people to experience positive reinforcement for their high self-concept and reduces the likelihood that they will experience cognitive dissonance – that is, a difference between that view of themselves and life experiences.

However, for people who are above average on only the negative styles the indication is that they deal with their low self-esteem in an immature way by engaging in negative cognitive distortion through attacking others who are perceived to be threats as well as sending themselves up to create the impression to themselves and others that they do not have feelings of low self-worth. Such people can be seen as motivated by a desire for negative reinforcement – removal of something which is unpleasant to them.

Furthermore, [Cramer \(2000\)](#) discusses various constructs expected to be related to defense mechanisms including those examined in cognitive, social, and developmental psychology. Appeal to these could also be useful in developing broader theoretical perspectives about the HSQ style profiles characteristic of people who are above average on just the positive styles or only the negative styles.

In contrast to those clusters of people individuals who are above average or below average on all the styles appear to be motivated respectively by a higher or lower desire for stimulation/interaction with others. For the former, receiving stimulation can be viewed as positively reinforcing and for the latter avoiding increased stimulation would be negatively reinforcing. Higher and lower stimulation seeking has been the subject of various conceptual analyses to do with sensation seeking and extraversion (for example, [Apter 1984](#); [Arnett 1994](#)) which can be appealed to in order to explain the origins of these profiles.

An interesting question for further research concerns whether the same clusters as those obtained using just the HSQ styles are obtained when cluster analysis is conducted on the

HSQ styles together with other styles such as the ones examined by [Heintz and Ruch \(2019\)](#).

3.1.2 Re-labeling the HSQ styles

As indicated by [Heintz and Ruch \(2015: 612\)](#) although the labels “aggressive” and “self-defeating” for the negative styles reflect how humor is used (negative to others or negative to self respectively), the terms “affiliative” and “self-enhancing” refer to the alleged *motivations* of the styles. However, the abovementioned analyses in terms of style profiles indicate that the primary motivations for the so-called affiliative and self-enhancing styles are not affiliation nor self-enhancement respectively for everyone. Given this, these styles would be better re-named also to reflect the humor use they are supposed to be characterized by – respectively, positive about others and positive about oneself.

3.1.3 Style characteristics and features of the audience

A characterization of the HSQ styles by reference to their motivations or valence – that is, respectively, self/relationship enhancement and positive/negative about self or others, does not cover all aspects of humor used. Specifically, if “humor style” is viewed as referring to a feature of humor which distinguishes it from some other instances of humor then humor structure (incongruity resolved versus incongruity not resolved) and humor content can be included as features of humor style (in fact, [Heintz and Ruch 2019](#) suggest nine humor styles based on the structure or content of humor). Now, it is well-established that there are substantial individual differences in liking of humor structure (see for example [Galloway 2009](#); [Hehl and Ruch 1985](#)). Given this, the nature of the audience that humor of a given structure is directed to needs to be taken into account in assessing the association of HSQ styles with those outcomes.

Similarly, the humor style profiles characteristic of the audience exposed to humor (indicative of positivity and/or negativity about self or others) might also affect their responses to a given humor content. For instance, a person motivated by a desire for

relationship enhancement might use all of the HSQ styles in interaction with those he/she wishes to impress. However, audience members who are below average on the negative styles are not expected to appreciate such styles and they will probably respond negatively to their use by others. Similarly, a person who, for instance, is motivated by self-defense through use of self-defeating humor might really be encouraging, not avoiding, negativity from those who dislike that style. Some preliminary work on the theme of the effects of matches/mismatches between humor profiles of humor users and their audiences has been conducted by [Tsai et al. \(2023\)](#) who report that positive marital satisfaction is best predicted when the humor style profiles of the relationship partners match.

3.2 The strength of humor's effects on well-being

The research considered here indicates that controlling the effects of personality which has usually been examined by reference to the Big 5 personality inventory reduces the typically medium strength of association of HSQ styles to psychosocial well-being to small or negligible. The Big 5 arguably provides a non-humor index of positivity/negativity about self or others. Specifically, higher or lower scores on openness, extraversion, and agreeableness indicate higher or lower positivity respectively about others. Negativity about self can be indicated by higher scores on neuroticism and lower scores on conscientiousness, whereas lower neuroticism and higher conscientiousness scores show a more positive view about oneself. If, as argued above, the HSQ styles are also about positivity or negativity about self or others (determined by asking about humor use) then it is not surprising that removing the effect of such attitudes through controlling personality reduces associations of the HSQ styles to well-being. Whether non-humor indexes of positivity or negativity about self or others are a better predictor of psychosocial well-being than humor-based indicators of those attitudes requires further empirical examination.

3.3 The causal status of HSQ styles

[Martin et al. \(2003\)](#) suggest that the HSQ humor styles are *causally related* to psychosocial well-being (p. 51) – that is, they cause and/or are caused by well-being, and that as typically used in examinations of causal connections longitudinal designs and experimental methodology are appropriate for investigations of such relationships (p. 72). However, although those research designs and that methodology can reveal whether or not changes in one thing are associated with changes in another, co-variation is not enough to support the view that two covariates are causally related. For instance, two apparently different constructs will be significantly correlated if they are both really about the *same thing*. Now, as already indicated, the extent of endorsement of each HSQ style can be viewed as indicating propensity to show (through humor use) positivity or negativity about self or others. As illustrated above, this is also what the Big 5 personality constructs are about. Positivity/negativity about self is also what several other indexes of psychosocial well-being widely used in research on the HSQ concern. These include the abovementioned CES-D and the STAI instruments, and the Rosenberg self-esteem scale. Given this, the claim that a humor style is causally related to such indexes of well-being amounts to the tautologous assertion that propensity to be positive or negative about self or others causes propensity to be positive or negative about self or others.

On the other hand, covariations between the HSQ styles and variables that are clearly different from them such as business, marital satisfaction, teaching, and counseling outcomes, among many other features of everyday activities might not be causal because the covariation is really attributable to the possible influence of another variable which is causally related to both of them – that is, a common cause Z of X and Y results in a correlation being observed between X and Y which themselves are not causally related. In addition, some associations between variables X and Y might be totally mediated by the effects of another variable Z ; X and Y covary not because X causes Y but because X causes Z which in turn causes Y (see [Baron and Kenny 1986](#)). This poses

threats to a study's internal validity – that is, whether the results are in fact attributable to what appears to be the case.

However, even if plausible confounds are controlled and total mediation effects are ruled out, appeal to covariation is still not sufficient to establish causation. Specifically, many things covary and what is required from proponents of a causal interpretation for a given covariation is a justification for claiming the connection is causal (Cheng 1997). Many attempts to identify what distinguishes causally related covariates from non-causally related ones are evident in the philosophy and psychology literature (see White 1990 for a comprehensive review). There is no agreement about how to identify which covariates are causally related and which ones are not and often what people decide are causally related events are judged as being so on the basis of *subjective biases* about the sorts of things that can be causes (White 1990: 11–13).

However, the difficulties which characterize causal interpretations of the HSQ styles' associations do not invalidate their potential utility as *predictors* of psychosocial constructs and other outcomes. In fact, the temptation to view a relationship between two events as causal could sometimes be based on the fact that one is a significant predictor of the other. The strength and direction of such predictive relationships (one way or bidirectional) can be examined using the procedures employed, for example, by Sowislo and Orth (2013) and Tsukawaki et al. (2022). Given the abovementioned arguments in favor of the use of profiles rather than single styles analysis of the HSQ, the ability of membership in a given HSQ style cluster to predict outcomes is what should be examined.

4 Conclusions

The HSQ is widely employed in examination of associations between humor use and psychosocial well-being. The present critique indicates how research on the scale can productively proceed. Such analysis should provide a clearer indication of the strength of predictive associations characteristic of the HSQ as well as the part played by humor in such relationships.

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