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Humor Style and Motor Skills: Understanding Vulnerability to Bullying

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Abstract

The purpose of this study was to examine the role of humor style and motor skills in vulnerability to bullying. 729 adults responded to the Humor Style Questionnaire (HSQ) and items retrospectively addressing their motor skills and bullying experiences during childhood. Consistent with recent research, poorer motor skills were associated with a greater extent of having been bullied. An association between stronger motor skills and affiliative humor was found, lending support to a shared biological basis theory underlying social and motor competency processes. Most importantly, being bullied was associated with higher self-defeating humor and lower affiliative humor. This supports earlier theoretical work by Klein and Kuiper (2006) and highlights the role that humor styles play in social interactions that can promote positive peer acceptance and wellbeing.

Keywords: bullying, HSQ, humor styles, motor skills, peer acceptance

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Introduction

Bullying is a prevalent and worldwide phenomenon. Across European and North American countries prevalence rates among school children range from approximately 5% to 30% (Currie et al., 2012). In Sweden almost 30% of adults report having been bullied at some stage during school (Bejerot, Plenty, Humble, & Humble, 2013). Bullying refers to repetitive actions involving intimidation, aggression or harassment against another person that are characterised by a power imbalance (Olweus, 1993, 1994). These behaviours can be direct or indirect, physical or verbal (Salmivalli, Huttunen, & Lagerspetz, 1997) and may be carried out by one or more persons (Olweus, 1992). Bullying can have serious and long-term negative consequences for the targeted child's health and wellbeing (Arseneault, Bowes, & Shakoor, 2010; Copeland, Wolke, Angold, & Costello, 2013; Kumpulainen, Räsänen, & Puura, 2001; Varhama & Björkqvist, 2005). To help understand how this harmful and complex problem can be prevented, we ask why some individuals are more vulnerable to bullying than others.

Children perceived as unusual may be rejected by other children (Juvonen, 1991), as the most frequent reason given by youth for someone being bullied is that 'they didn't fit in' (Hoover, Oliver, & Hazler, 1992; Hoover, Oliver,

& Thomson, 1993). Consistent with this, deficiencies in social competence are common amongst bullied children (Fox & Boulton, 2005; Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Olweus, 1992; Perren & Alsaker, 2006; Varhama & Björkqvist, 2005). Having physical features signalling difference are also more commonly observed amongst bullied children than other children. For instance, physical cues such as being overweight (Lumeng, Forrest, Appugliese, Kaciroti, Corwyn, & Bradley, 2010) or belonging to an ethnic minority (Hjern, Rajmil, Bergström, Berlin, Gustafsson, & Modin, 2013) are acknowledged risk factors. A growing body of evidence also points to below average motor skills and an increased likelihood of bullying (Bejerot, Edgar, & Humble, 2011; Bejerot & Humble, 2007, 2013; Bejerot et al., 2013). Movements that are poorly integrated or motor responses not accurately tuned to the social situation may be interpreted by others as socially inept or 'awkward'. Interestingly, perceptions of social incompetence and atypical physical features are related. Bierman, Smoot, and Aumiller (1993) found that peer-ratings of physical atypicality (e.g., handicaps and oddness in behavior) and social insensitivity formed a common factor on which nonaggressive rejected children scored particularly high. Evolutionary mechanisms have been suggested to play a role in explaining why children with certain characteristics may be targeted rather than others (Volk, Camilleri, Dane, & Marini, 2012). Bullies are often psychologically and physically stronger than victims (Juvonen, Graham, & Schuster, 2003) and bullying actions demonstrate a desire for social influence and power. Thus, individuals that present 'differently' or as being more fragile and submissive, whether socially or physically, may be at increased risk for bullying by others who strive for dominance (Bierman, Smoot, & Aumiller, 1993).

Social competence involves a variety of skills that assist in managing social interactions in a functional way (Cavell, 1990; Cavell, Meehan, & Fiala, 2003) and a key social strategy is to use humor. The appropriate use of humor helps foster social acceptance by facilitating positive interactions and promoting relationship development (Klein & Kuiper, 2006; Yip & Martin, 2006), thereby contributing to emotional health and wellbeing (Martin, 2007).

The Humor Style Questionnaire (HSQ) is a self-rated scale designed to describe the humor style an individual tends to use (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). It examines four styles: self-enhancing, affiliative self-defeating and aggressive. The self-enhancing style represents a generally humorous outlook and tendency to apply a humorous perspective during adverse situations, as well as taking others' perspectives. This humor style minimises negative emotions while retaining a realistic view of a potentially unpleasant situation (Martin et al., 2003). The affiliative humor style tends to apply jokes, witty banter and funny comments to entertain others and enhance relationships. Although it may involve self-depreciating humor, this is done while also maintaining self-acceptance. The self-defeating humor style aims to promote interpersonal affiliation but at one's own expense, denying one's emotional needs (Fabrizi & Pollio, 1987; Martin et al., 2003). The aggressive humor style functions to enhance one's self-image at the expense of others, often in front of an audience.

Both the self-enhancing and affiliative styles are generally 'adaptive' approaches that use humor in a tolerant and accepting manner both towards oneself and others. They are both associated with greater positive mood, self-esteem and relationship building (Cann, Norman, Welbourne, & Calhoun, 2008; Kuiper, Grimshaw, Leite, & Kirsh, 2004). However, affiliative has stronger links with social self-esteem, while self-enhancing is more relevant to reduced anxiety and negative affect (Kuiper et al., 2004). These two positive humor styles have been shown to be positively associated with greater interpersonal competence in general (Yip & Martin, 2006). In contrast, the self-defeating and aggressive styles present generally 'maladaptive' approaches by using humor in a derogatory manner, either at one's own or someone else's expense (Klein & Kuiper, 2006) and are negatively associated with socially adaptive behaviour. Both are associated with neuroticism and relationship dissatisfaction, while the

former promotes ridicule and is more common among individuals who feel lonely (Fitts, Sebby, & Zlokovich, 2009) and socially uncertain (Kuiper & McHale, 2009), the latter tends to alienate people (Martin et al., 2003).

Klein and Kuiper (2006) argue for mutually reinforcing interactions between humor styles and bullying dynamics. They suggest that affiliative humor should align with peer acceptance and thus be negatively associated with bullying. This may be explained through two complementary mechanisms: (a) children who skilfully use affiliative humor are more likely to be popular and are therefore at a lower risk of victimisation and (b) socially excluded children have less opportunity to develop such humor skills. In contrast, self-defeating humor is likely to be positively associated with being bullied because targeted children may have lower self-esteem and learn to allow others to laugh at their expense. Furthermore, "victims of bullying may lack the abilities to effectively use a variety of humor styles, and thus rely primarily on a self-defeating humor style" (p. 398). Thus, a tendency to use affiliative humor styles and avoid self-defeating humor may promote social interaction skills, presumably reducing the risk of bullying.

Positive humor styles, particularly affiliative humor, requires good timing abilities related to tone of voice, prosody, facial expression, gestures, eye glance and turn-taking during conversation, etc. Similar to other forms of successful social interaction, positive humor involves the application of sensorimotor integration (Velasques et al., 2011). The cerebellum is a region of the brain that is important for gross motor skills, but also contributes to sensorimotor coordination, exactness, accurate timing, and also calibrating sensorimotor information from other brain areas (Ivry, Spencer, Zelaznik, & Diedrichsen, 2002; Spencer, Ivry, & Zelaznik, 2005). It is thought that deficiencies in social skills may be related to impairments in these fine-tuned cerebellar functions (Rogers et al., 2013). Accordingly, links between poor gross motor skills and poor social skills have been observed in clinical populations (Reiersen, Constantino, & Todd, 2008; Valera et al., 2010; Zelaznik et al., 2012). For example, almost all children with autism spectrum disorder demonstrate both poor motor skills and poor social skills. Autistic children also show poor humor competence (Asperger, 1991; Weiss et al., 2013). Amongst the non-clinical adult population, autistic traits are associated with weaker adaptive humor tendencies (Eriksson, 2013; Rawlings, 2013). As positive humor is linked with social competence, we propose that in a nonclinical adult population a shared biological basis between social and motor skills may be represented by poor motor skills and the low use of positive humor.

The Current Study

By understanding the risk factors for bullying, we can promote wellbeing through enhanced efforts to prevent this harmful behaviour. Within the broad risk factors of atypicality and social incompetence, our study focuses on motor skills and humor styles. Based upon Klein and Kuiper's (2006) suggestions, we expect different humor styles to show distinct patterns with peer acceptance, as represented by bullying. Although it has been suggested that self-defeating humor styles may increase the likelihood of bullying and affiliative humor may decrease the likelihood (Klein & Kuiper, 2006), no prior empirical research has investigated this link. This is therefore a key aim of the current study. A second aim is to shed more light on the recently identified association between being bullied and poor motor skills (Bejerot & Humble, 2013; Bejerot et al., 2013). The third aim is to theoretically investigate the proposed biological link between motor and social skills in a nonclinical population by using adaptive humor as a proxy for social skills. It will consider if poorer motor skills are associated with less socially 'adaptive' humor (i.e., affiliative and self-enhancing). Analyses will be conducted on women and men separately so that the extent of any gender differences can be observed. Additionally, as this is the first application of the HSQ in a Swedish population, the basic psychometric properties of this scale will also briefly be examined.

The following four hypotheses will be examined:

H1: Stronger motor skills are expected to be negatively associated with being bullied.

H2: Stronger motor skills are expected to be positively associated with adaptive humor.

H3: A greater tendency to use affiliative humor will be negatively associated with experience of being bullied.

H4: A greater tendency to use self-defeating humor will be positively associated with experience of being bullied.

Method

Participants and Procedure

Participants comprised of 729 Swedish health care workers who attended a one-day training course during 2011. The final sample with complete data (n = 626, 86% of original sample) consisted of 498 women (68.3%) and 97 men (13.3%) (31 cases were missing gender information), with an age range of 18 to 69 years (mean age = 46 years). During the day, questionnaires were distributed and participants were invited to participate in an anonymous questionnaire. They were told that the study addressed coping approaches and that participation was voluntary. Questionnaires were completed at a time of participants' choosing and collected at the end of the day. In appreciation of their contribution, they were offered the chance to win a book gift voucher. Under Swedish law, formal ethical approval is not required for research methods using anonymous self-rated questionnaires (Riksdagen, law 2003:460).

Measures

The 'Humor Styles Questionnaire' (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003) was translated to Swedish for this study. The instrument's author, Rod Martin approved the re-translation back to English. The HSQ comprises of 32 statements intended to represent four styles of humor: aggressive (e.g., 'If someone makes a mistake, I will often tease them about it'), self-defeating (e.g., 'I let people laugh at me or make fun at my expense more than I should'), self-enhancing (e.g., 'My humorous outlook on life helps me to not get too upset or depressed about things) and affiliative (e.g., 'I laugh and joke a lot with my closest friends'), with eight items for each subscale. Participants indicate to what extent they agree or disagree with each statement along a seven-point Likert scale (1 = strongly disagree, 7 = agree completely). Scores for each subscale were calculated by summing participants' responses (after reverse-coding some items according to the HSQ coding scheme). Missing responses were replaced by mean replacement using items within the same subscale. Cases missing three or more responses within a subscale were removed from further analysis. The HSQ has previously shown good validity and psychometric properties amongst North American adolescents and young adults (For example, Eriksson, 2013; Erickson & Feldstein, 2007; Frewen, Brinker, Martin, & Dozois, 2008; Hampes, 2010; Hodson, MacInnis, & Rush, 2010).

Participants indicated their age and gender. Two items also addressed their motor skills and experiences of being bullied during their school years. Response options were along the same seven-point scale as the HSQ items ranging from *strongly disagree* to *agree completely*.

1. *Experience of being bullied:* 'I was bullied by other children in school, i.e., I was exposed, repeatedly over time, to negative actions by one or more persons during my school days'.
2. *Motor skills:* 'I was considered good at physical education in school, i.e., regarding motor smoothness, coordination and ball skills'.

Results

Descriptive Statistics

The HSQ scale reliabilities and correlations are presented in Table 1. Strong internal reliability was observed for all scales. The two positive styles (affiliative and self-enhancing) were most strongly correlated with each other and the two negative styles (aggressive and self-defeating) were most strongly correlated with each other, consistent with correlation patterns observed in previous research using the HSQ (Fitts et al., 2009; Kuiper et al., 2004; Martin et al., 2003). Male and female showed a generally similar pattern of correlations. As shown in Table 2, while no gender differences were observed in affiliative and self-enhancing humor scores, men scored higher than women on both aggressive and self-defeating humor, as well as on self-reported motor skills and experience of being bullied (marginally significant).

Table 1

Cronbach's Alphas and Correlations Amongst the Humor Subscale

Subscale	Affiliative	Self-Enhancing	Aggressive	Self-Defeating
Affiliative	**.77**	.34***	.10*	.20***
Self-Enhancing	.40***	**.74**	.06	.17***
Aggressive	.07	-.02	**.63**	.38***
Self-Defeating	.08	.15	.41***	**.78**

Note. Cronbach's alphas presented on the diagonal; Female correlations in the upper triangle; Male correlations in the lower triangle.
**p < .01. ***p < .001.

Table 2

Descriptive Statistics by Gender

Measure	Gender	Mean	SD	p
Affiliative[a]	Female	43.0	7.1	.19
	Male	44.0	6.0	
Self-Enhancing[a]	Female	34.5	7.6	.09
	Male	36.0	7.1	
Aggressive[a]	Female	22.9	6.6	<.001
	Male	26.0	7.5	
Self-Defeating[a]	Female	23.4	8.1	<.001
	Male	26.0	8.4	
Bullied[b]	Female	2.3	1.9	.02
	Male	2.6	1.9	
Motor skills[b]	Female	4.4	2.1	.007
	Male	5.0	2.0	

Note. 498 females and 97 males.
[a]t-tests. [b]Mann-Whitney U tests.

Associations Between Humor Style, Motor Skills and Bullying

As predicted, a negative correlation was observed between motor skills and being bullied, r_S = -.23, p < .001. This was observed for both men (r_S = -.23) and women (r_S = -.26) separately. Table 3 presents correlations of motor skills and being bullied with the four humor styles. Overall, those who reported stronger motor skills also tended to score higher on affiliative and self-enhancing humor. However, when considering only women, motor skills were significantly associated with all four humor styles. Greater affiliative and self-enhancing humor were both associated with better motor skills, whereas higher aggressive and self-defeating humor were associated with poorer motor skills. Amongst males, no significant correlations between motor skills and the humor styles were observed, although there was a weak trend for higher aggressive humor to be associated with better motor skills. For both genders, a greater experience of being bullied was associated with lower affiliative humor and greater self-defeating humor.

Table 3

Correlations for Good Motor Skills and Being Bullied With HSQ

Sample		Affiliative	Self-Enhancing	Aggressive	Self-Defeating
All	Motor Skills	.13**	.11**	-.06	-.06
	Bullied	-.12**	.03	.10*	.22***
Female	Motor Skills	.14**	.12**	-.11*	-.09*
	Bullied	-.12**	.01	.11*	.26***
Male	Motor Skills	.09	-.01	.19†	.07
	Bullied	-.17†	.08	.03	.12

Note. 498 females and 97 males

†p < .1. *p < .05. **p < .01. ***p < .001. Spearman correlations.

Table 4 presents results from a multivariate regression predicting being bullied from motor skills and humor styles. Being bullied was uniquely predicted by weaker motor skills, lower affiliative, as well as greater self-defeating humor, and to a lesser extent self-enhancing humor. The gender specific analyses however, showed some key differences. While motor skills, self-defeating humor and affiliative humor predicted being bullied amongst females, affiliative humor was the only significant predictor of having being bullied amongst males.

Table 4

Multivariate Regression Predicting Being Bullied

Risk factor	All	Female	Male
Motor Skills	-.20***	-.23***	-.17
Affiliative Humor	-.16***	-.14**	-.26*
Self-Enhancing Humor	.10*	.09	.18
Aggressive Humor	-.01	-.03	.05
Self-Defeating Humor	.19***	.21***	.10
R^2	.10	.11	.11

*p < .05. **p < .01. ***p < .001. Standardized coefficients presented. p-values are based on 5,000 bootstrap samples.

Discussion

This study examined the role of humor styles and motor skills in understanding vulnerability to bullying. Poorer motor skills were associated with weaker adaptive humor. As expected, greater self-defeating humor and lower affiliative humor, as well as poorer motor skills significantly predicted having been bullied. However, self-enhancing and aggressive humor showed few associations with being bullied.

A greater tendency to use maladaptive humor, particularly self-defeating humor was associated with having been bullied. Thus, the findings are consistent with Klein and Kuiper's (2006) suggestion that bullied children and adolescents are likely to use self-defeating humor to a greater extent than children who are not bullied. Greater use of this humor approach also aligns with previous observations of greater submissive and avoidance behavior amongst bullied individuals (Fox & Boulton, 2005; Perren & Alsaker, 2006). Using self-defeating humor to promote relationships with others, risks promoting a negative self-image and increasing perceived vulnerability among peers (Klein & Kuiper, 2006). Furthermore, potentially negative outcomes of this humor style may be compounded because individuals who tend to use self-defeating humor, may have a lower propensity to use adaptive humor styles (Fitts et al., 2009). Individuals may benefit from understanding how reducing the use of self-defeating humor can promote both self-respect and inter-personal respect. Bullied women in the current study also showed a slightly greater tendency to use aggressive humor than non-bullied women. Although aggressive humor may represent an attempt towards adaptive humor, or to defend oneself, it may exacerbate a victim's vulnerability, by contributing to further social alienation (Fitts et al., 2009). As maladaptive humor styles are more common among males than females (Martin et al., 2003), females that present an aggressive humor style signal atypical behavior, which is regarded as being perceived as 'different'. According to evolutionary processes this atypical gender-typed behaviour may be perceived as being 'different' or 'weak' by peers seeking social dominance. Furthermore, aggressive humor is probably more relevant to characterising bully-victims, rather than victims of bullying, as this humor style can work to lower another individual's status within a group (Klein & Kuiper, 2006). Another gender difference of note was of a weak trend for males between greater motor skills and aggressive humor, whereas the opposite pattern was observed for females. This is consistent with previous research finding that superior motor skills are associated with being a bully in boys, but not in girls (Jansen, Veenstra, Ormel, Verhulst, & Reijneveld, 2011).

Consistent with expectations, the tendency to use affiliative humor was greater amongst individuals with lower levels of bullying. This humor style is associated with taking the initiative in relationship building and also managing social conflict (Martin et al., 2003). Individuals with this tendency are more likely to involve themselves in social contexts that promote functional interpersonal relationships (Yip & Martin, 2006). Thus, learning to apply this type of skill, particularly in combination with the minimization of maladaptive humor (i.e., self-defeating humor) (Klein & Kuiper, 2006; Martin et al., 2003) could be very useful for individuals at risk of social exclusion (Klein & Kuiper, 2006). Unexpectedly, self-enhancing humor showed weak positive associations with being bullied. It should be noted that unlike self-enhancing humor, the proposed mechanisms underlying the link between affiliative humor and bullying are based on social interaction. In this sense, being bullied may not impede the development of self-enhancing humor and it is possible that socially exclusion may actually provide individuals with more opportunities to develop self-enhancing humor.

This study also indirectly tested a proposed biological basis underlying social and motor deficits. As strong motor skills were positively associated with adaptive humor, the findings lend theoretical support to this proposal. A

range of fine-tuned motor skills (e.g., timing and facial expression) are required in adaptive humor and these presumably stem from cerebellar functions. This is the same brain region that performs gross and fine motor functions. These results extend previous research reporting links between poor gross motor skills and poor social skills amongst clinical populations (Reiersen, Constantino, & Todd, 2008; Valera et al., 2010; Zelaznik et al., 2012) to non-clinical adult populations and demonstrate the complex skill processes required for adaptive humor.

We do not argue that it is the poor use of humor or motor skills *per se* that causes bullying. Rather, we suggest that individuals with limited use of affiliative humor, and greater use of self-defeating humor may be generally perceived as less socially competent than others. As the type of humor style an individual tends to use is related to broader social competence and communication abilities (Martin et al., 2003), it may reflect a general perception of 'being' different, which makes certain individuals more vulnerable to bullying than others. Similarly, poor motor skills can represent atypical physical features that signal difference and perhaps fragility. Poorly timed or coordinated motor responses may be perceived by others (even at an unconscious level) as social awkwardness or 'oddness', reducing their likeability and therefore lead to an increased risk of being bullying.

This was the first study to apply the HSQ within a Swedish population. Furthermore, it involved a large (mostly female) adult sample who were not university students and supported previous research showing good reliability and validity of the HSQ four scales (Martin et al., 2003; Kazarian & Martin, 2004; Saroglou & Scariot, 2002). However, the findings must be interpreted with consideration of the sample's gender imbalance, and are thus more applicable to women. Although some patterns specific to men (such as a trend between stronger motor skills and more aggressive humor) were observed, most findings for bullying were in a similar direction to those for women, albeit non-significant, presumably due to sample size limitations. A larger sample with greater statistical power is needed to replicate and validate these gender specific findings. Furthermore, as the current study used retrospective measures of bullying, the causal pathway between humor styles and vulnerability to bullying was not tested. It is likely that the relationship between humor and bullying is bidirectional, as bullying can also perpetuate social difficulties (Hodges & Perry, 1999). Since the development of social skills, including the use of humor, is fostered by a safe and positive climate (Klein & Kuiper, 2006), victimised individuals may develop further difficulties in developing broader and appropriate humor skills (i.e., affiliative humor).

This study investigated risk factors for bullying stemming from physical atypicality and social incompetence. It was the first study to investigate humor styles and bullying and in doing so demonstrated an increased likelihood of having been bullied with greater use of self-defeating humor and lower affiliative humor. The findings also support a growing body of literature indicating a link between poor motor skills and an increased risk of bullying. Furthermore, the shared biological basis hypothesis regarding social competency and motor skills was supported. Individuals tend to use a range of humor styles (Klein & Kuiper, 2006) and so self-defeating and aggressive humor may be used on occasion. However a greater tendency towards affiliative humor is more closely associated with social acceptance. Thus, the current findings highlight the role that humor styles can play in promoting wellbeing through adaptive social interaction.

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Competing Interests

The authors have declared that no competing interests exist.

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