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Exploring the Workplace Bullying Construct: An Evidence-Based Approach

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Abstract

Negative interpersonal behaviour at work has been researched as 'bullying' in Europe, and explored under wider headings in the USA (e.g. 'counter-productive', 'antisocial' or 'deviant'). The first aim of this paper is progress the concept of bullying by identifying and validating the latent variables that constitute bullying. Confirmatory factor analysis and structural equation modelling of two large UK data sets were used to test different construct models (from the literature) against each another. Four behaviour groupings were found to provide best fit i.e. personal attack, task attack, verbal attack as well as stigmatization (isolation). Testing disconfirmed the crude stereotype of bullying at work as being characterized by verbal abuse; instead, verbal attack was the least reported of the constructs. The literatures' model suggesting the sequence of bullying attacks was also tested and support was found for the earlier stages of task attack being followed by personal attack. However, it was found that this was typically followed by stigmatism (isolation) which is in contrast to the verbal abuse stage suggested in the literature.

The second aim was to interpret the constructs found in terms of actionable knowledge for the practitioner. For the practitioner, it revealed the need to stress the subtle forms of bullying rather than the stereotypical yelling and shouting in identifying bullying in the workplace. In addition, a case is made that anyone reporting bullying behaviours should be considered at risk whether or not they have self labelled themselves as bullied as this provides a window of opportunity for intervention before an individual is damaged by their experience of being bullied.

EXPLORING THE WORKPLACE BULLYING CONSTRUCT: AN EVIDENCE -BASED APPROACH

Introduction

There is a growing urgency for academics to contribute to the understanding of bullying behaviours at work. Recent corporate failures such as Enron and Arthur Andersen are dramatic examples of the result of 'bad' behaviour at work. This paper focuses on a more common type of negative behaviour namely that of workplace bullying. For readers new to this topic, 'bullying' might be associated with children in a playground, but a growing body of literature has found similar facets of interpersonal humiliation, aggression and destructive psychological manipulation in the workplace (Hoel, Rayner & Cooper 1999; O'Leary-Kelly et al 1996; Duffy Ganster & Pagon, 2002). Bullying is about negative interpersonal behaviour in interpersonal work relationships. It is not about isolated incidents between strangers, but is placed in the context of a relationship where the players have a past and a future together in the workplace.

A recent observable development in the area is that of field convergence where academics use the work of others to inform and broaden the debates (e.g. Glomb & Liao 2002). In a recent review of US literature, Keashly and Jagatic (2003) used overarching concepts of negative behaviour such as 'counterproductive', 'deviant' and 'antisocial'. These were entwined with strategies such as tit-for-tat , aggression, and conflict (summarised by author in Keashly and Jagatic, 2003). Therefore, one aim of this paper is to take the concept of bullying at work and produce a model that defines and validates the bullying construct so as to allow other research contributions to be placed within a framework and work towards enhancing our actionable knowledge in the area.

The main vehicle of the paper is the use statistical modelling to interrogate databases of bullying behaviours at work. Recent analysis of an associated topic, sexual harassment at work, originally inspired this paper (Fitzgerald et al, 1999) where statistical analysis contributed to modelling of the construct of sexual harassment. The work into bullying and

related topics is still at a descriptive rather than analytical stage, so to progress the field stronger analytical approaches must be utilized that can move toward defining and understanding its constructs. Several 'models' have been put forward to describe the various types of behaviour that constitute bullying at work, but few have attempted to create 'actionable knowledge' through evidence-based analysis of alternatives. This paper identifies and validates the bullying construct by using data from two previous studies (UNISON, 1997; 2000) to test alternative models so as to identify models which have best fit and testing their construct validity. The paper reviews and describes the current notions of the dynamics within workplace bullying, critically sums up research that examines these, and then completes the analysis. The discussion will take these results and relate them to actionable knowledge and future research.

Literature Background

Research on bullying at work is dominated by the positivist paradigm with some noteworthy exceptions (e.g. Liefooghe & MacKenzie Davey, 2003). Evidence is overwhelmingly based on self-report using questionnaires. A definition of 'bullying' is usually provided for respondents either in a covering letter or in the questionnaire itself. Respondents are often asked directly whether or not they are currently being bullied (Yes/No). In addition, questionnaires ask the frequency of various negative acts experienced by respondents within a given period of time such as the last six months (e.g. Rayner, 1997; Hoel & Cooper, 2000) or the last year (e.g. Quine, 1999).

Considerable debate has focused on how to 'count' those who are bullied (e.g. Einarsen, Hoel, Zapf & Cooper, 2003; Rayner, Hoel & Cooper, 2002) and these will be summarized here. As bullying is thought to be about repeated actions, some persistency of experience of negative acts over the last six months (at least) has been used by researchers. There is debate as to whether only those who label themselves as bullied should be counted. However there are strong counter arguments, Rayner (1999a) found that only half those who experience weekly negative 'bullying' behaviours over a six month period also labelled themselves as bullied. Also Hoel & Cooper (2000) found that those who did not label (but

did experience behaviours) experienced similar negative health effects to those who did label themselves as bullied. This reflects research in the sexual harassment area where the importance placed on self labelling has diminished in favour of analysing individual behaviours experience of being sexually harassed (Fitzgerald, Mageley, Drasgow & Waldo, 1999).

The 'behaviours' that make up the bullying construct are now at the centre of our enquiry. The authors have found little disagreement between writers in the field of bullying at work on what bullying behaviour components should be included in the area. This may be because the original work done by Heinz Leymann (1990; 1996) was thorough and used a large number of reports of critical incidents to generate items for the LIPT (Leymann Inventory of Personal Terrorization). Many researchers still use the LIPT as a source of questions (e.g. Zapf et al, 1996) and often combine these with the Negative Acts Questionnaire (NAQ) used by Norwegian researchers (Einarsen & Raknes, 1997). The differences between the two measures lie more in the scales used and label descriptions, rather than any major difference in the lists of behaviours themselves.

Thus bullying at work can be evidenced from reported behaviours, which span a wide range of actual strategies experienced. European and Australasian researchers have tended to group these by what is attacked and several taxonomies have appeared, some by content analysis (e.g. Rayner & Hoel, 1997), and others using statistical techniques such as exploratory factor analysis (e.g. Zapf, 1996). In contrast, US researchers have concentrated on how attacks are made. This is well evidenced in Keashly and Jagatic (2003). Researchers have used these classifications in order to ensure that the domain of behaviours was fully covered in an instrument. However, as the field progresses the authors believe that the content of behaviour groupings is a central question as they will be pivotal in any attempts that take us closer to knowledge for actionable prevention. Those who are bullied experience a range of negative acts that can be best be thought of as a pattern or set of bullying behaviours that are persistently experienced. If we are to model and understand these 'patterns' of bullying behaviours (Keashly & Jagatic, 2003), the

content of the subunits or latent variables that constitute bullying at work must be identified and their construct validity confirmed.

All the empirical research of bullying that we have found uses exploratory factor analysis with principal component factor analysis to determine underlying bullying factors. By its nature, this approach brings out the differences between survey populations rather than confirming any similarities. This presented the authors with an opportunity to use a confirmatory factor analysis approach. In this way, we planned to test the validity of a bullying model that is based on commonalities in the previous research (Bjorkqvist, 1992; Einarsen and Raknes, 1997; Leymann, 1990,1996; Niedl, 1995; Vartia, 1993; and Zapf, et al, 1996) and thus consolidate the work that others have done in exploring the bullying construct.

Previous work exposed two main themes that are relevant to this paper. First, while some authors have found behaviour factors using exploratory factor analysis (e.g. Zapf, Knorz & Kulla, 1996), others have not (Rayner, 1999b). It can be argued that where factor analyses have been used they display component loadings that are rather low. Thus, the existence of the latent variables themselves seemed worthy of investigation. The second theme that emerged from the literature were attempts to model how latent variables might interact, which brings us to the concept of patterning mentioned previously.

Einarsen postulates a sequence of conflict escalation (Einarsen, 1999) using Glasl's 1994 model (which is described in full in Einarsen, Hoel, Zapf & Cooper, 2003). This model, longitudinal and based on conflict, is not ideal for testing with cross-sectional data, but some patterns are suggested. The first step of 'Attempts to cooperate and incidental slips into tension' (Einarsen, Hoel Zapf & Cooper 2003:p20) implies the existence of problems of a personal and professional nature with some emotional reaction. The second stage of 'Polarisation and debating style' (ibid) implies a stronger emotional reaction and verbal aggression. The third stage 'Interaction through deeds, not words' implies a breakdown in communication and possible isolation of the target of bullying. Thus, the authors

summarized that the literature would expect incremental patterns of bullying behaviours to be present in the data.

A key aspect of bullying is its subjective nature. In common with other stressors at work, its definition rests partly on the recipient's reaction (strain) to the bullying behaviours experienced (Lazarus & Folkman, 1984). The authors also wanted to include some measure of 'reaction' to the behaviours within the hypotheses. Research by Munson et al (2001) into the effects of sexual harassment on 28,000 men and women in the military suggests that emotional reaction is the strongest effect of harassment when compared to others such as psychological well being, health, or organizational commitment. Fortunately the survey data available to the authors had measured the emotional effects of bullying through eleven simple questions on emotional reaction to the whole experience (i.e. this followed the question regarding behaviours experienced and asked (1997) 'What emotional reactions have you had to this treatment') requesting respondents to rate eleven emotional aspects that had been derived from content analysis of published anecdotal reports of bullying (i.e. Adams, 1992). The scale used was a five point Likert scale ranging from 'Not at all' (0) to 'A great deal' (4). This approach provided the opportunity for the inclusion within our model of a variable that measures an important effect of bullying. The literature was uninformative in specifying models for emotional reactions to bullying to test, except that as the bullying progressed, so the overall emotional reaction appears to be greater (e.g. Adams, 1992). This would fit well with Glasl's model of conflict escalation that we described earlier (Einersen, Hoel, Zapf & Cooper, 2003). .

The authors therefore developed three initial propositions from the literature.

P1 Bullying exists as discrete but oblique latent variables that can be identified in a significant proportion of the working population.

P2 The bullying latent variables will relate to one another in progressive incremental patterns as indicated by Einarsen (1999).

P3 The model of the relationship between the bullying latent variables and the emotional reaction to them, will be replicable in a different organizational setting.

Two reasonably large datasets were available for interrogation from previous studies (UNISON, 1997, 2000). The propositions could be explored using those datasets with subsequent confirmatory factor analysis and structural equation modelling. The procedure is detailed below.

Methodology

Survey Population

This research re-analyzed the results of two major questionnaire surveys of members of the UK's largest trade union UNISON. UNISON has over 1 million members who work mainly in the public sector. The first survey (UNISON, 1997) was sent to a random sample of 5000 members with usable returns of 761 of which 56 per cent were civic workers, 26 percent health workers, with most of the remainder being either education or utility company workers. UNISON confirmed that the returns reflected the membership distribution in terms of sector. The second survey (UNISON, 2000) was sent to a random sample of 4000 members in the police section of UNISON (UNISON members are civilian workers) and elicited 690 usable responses of which 234 were clerical and 285 specialist workers.

The UNISON Police survey (2000) was used to test alternative models while the UNISON whole population survey was used to validate the models. This method allowed us to see whether broad conclusions could be drawn on the nature of bullying behaviour at work, and the emotional reaction to it. In the findings, we will refer to the whole population survey as the General survey (1997) and use the title Police for the police civilian workers (2000).

The survey instrument used a list of fourteen items that were checked to cover the taxonomy that had been developed from a previous literature search (Rayner & Hoel, 1997). These were: threat to professional status (g*iven meaningless tasks, malicious rumours, intimidation, persistent criticism*); threat to personal standing (*belittling*

remarks, public humiliation, being shouted at, verbal abuse or threat, physical threats); isolation (*ignored by others, cut off from others*), overwork (*set unrealistic targets, excessive work monitorin*g); and destabilization (w*ithholding information*). Arguably some items could fall into more than one category, depending on the context – for example 'withholding information' has been seen here as destabilizing as often the recipient is simply unsure as to whether they have all the information available (Adams, 1992), but it might be better linked to an undermining of professional credibility or of personal standing. Equally other behaviours could be seen as destabilizing. As mentioned earlier, these taxonomies have been used to check the coverage of items rather than link specific items to specific categories. Feedback since the original surveys were administered revealed that 'intimidation' is an item that is too ambiguous to use. For example it might be taken to indicate the behaviours one experiences (s/he is using an intimidating manner), or one's reaction to them (I felt intimidated by that behaviour) – two interpretations; the difference between which is of importance to this study. Therefore this item was dropped from the analysis. Respondents were asked to reflect on their experience at work in the last six months and check a scale of frequency of experience for each item. The (5-point) frequency scale ranged from daily (4) through to less than monthly and never (0).

Evaluation of alternative bullying behaviour measurement models

The latent variables in our bullying behaviour measurement model are based on a synthesis of the findings of previous exploratory research. Although there were detailed differences between the studies summarized in the literature review, the factors found by previous researchers through exploratory factor analysis (EFA) share some common features.

Firstly, in all the research 'isolating behaviours' are found as a distinct factor. In our model, two such items were grouped under a latent variable described as Isolation. (Note a full list of the items and the latent variables can be found in Table 3). Secondly, all the research finds behaviours that share commonalities with the stereotype of overt school bullying i.e. verbal abuse and physical threats etc. In our model, we measured this with three items under the label Verbal Attack, since physical attacks are rare (Rayner, 1997).

Beyond these two specific groupings (Isolation and verbal aggression), researchers use a variety of items to describe how attacks might be made, and European researchers tend towards groupings based on that which is attacked rather than the aggression strategies themselves. This approach helped in establishing further factor labels, which brought together previous research. The third and fourth factors were therefore related to attack on work (task attack) and personal attack respectively. All researchers had used items that related to psychological harassment connected to the task, although in some research the factors are broader e.g. "attack by organizational measures" (Zapf et al, 1996). Since this paper looks at the interpersonal nature of bullying, rather than that type of bullying which might be seen as organizational (Leifooghe and MacKenzie Davey, 2003) it was appropriate to take a narrow view of this third task related factor. Consequently we grouped four suitable task-related items under a latent variable called Task Attack. Finally, a common theme emerged with items such as "personal derogation", "attacking the personal sphere" etc. All these relate to the victims personal life and to behaviours that undermine the victims' confidence or personal standing. In our model, we measure this with four items under a latent variable called Personal Attack. We describe this model as the "4 factor model".

In contrast to the researchers mentioned above, Bjorkqvist's early work (1992) found a model using exploratory factor analysis that he described as Strategies based on 'rational reasoning' versus those based on 'social manipulation'. We assigned items based on this model to provide a rival model that we describe as the "2 Factor Bjorkqvist model". In this model, Task Attack items were taken and set against the other items.

To provide an additional rival model we built a three-factor model based on an exploratory factor analysis of the Police survey using the Principle component method using direct Oblimin rotation. We describe this model as the "3 Factor EFA Police model".

To evaluate different potential bullying behaviour models within the three rival models described above, a series of nested models were created and tested using confirmatory factor analysis (AMOS version 4.01, Arbukle, 1999). The analysis used the maximum

likelihood method and utilized the full information maximization estimation method (FIML) to estimate missing values. (See Wothke (2000) for the arguments for FIML's statistical efficiency compared to alternative methods.)

The models tested were:

(a) A uni-dimensional model that assumes that there is only one latent variable that covers all the bullying behaviours

(b) An orthogonal model that assumes that the latent variables are distinct, unrelated constructs (for two, three, and four factor models)

(c) An oblique model that assumes that the latent variables are distinct constructs but are related to one another (for two, three, and four factor models).

The results of testing the two-factor model and three-factor model against the four-factor model described above are shown in Table 1.

Table 1 Fit indices for alternative bullying measurement models: Police

	Uni-dimensional			*Oblique*			*Orthogonal*		
Model	X^2	*df*	*ECVI*	X^2	*df*	*ECVI*	X^2	*df*	*ECVI*
2 Factor Bjorkqvist	998	67	1.557	776	64	1.126	1255	65	1.934
3 Factor EFA Police	414	67	0.709	355	62	0.637	1026	66	1.600
4 Factor (literature)	1068	69	1.65	303	59	0.571	1345	66	2.060

What emerges clearly from these tests on the Police survey is the superiority of the Oblique models over the alternative Orthogonal and uni-dimensional ones. In addition, in Table 1 it can be seen that all the fit indices converge in suggesting the superiority of the model hypothesizing the four factor oblique model. Comparison with the other models shows that the four factor oblique model provides a better fit to the Police data than does a model hypothesizing a three-factor model [X^2 difference (3 df) = 52, $p < 0.01$], or a two-factor model [X^2 difference (5 df) = 473, $p < 0.01$]. The four-factor oblique model also scores much lower than its rivals do on the ECVI, which is a composite measure of badness of fit,

so the lower scores confirm this model choice. Therefore, the four-factor model was selected for more detailed testing of its construct validity

The procedure for assessing the construct validity of the oblique four-factor behaviour measurement model is based on the following sequence of tests:

(a) The model fits better than rival specifications in tests of absolute fit.
(b) The model provides a good absolute and comparative fit to the data.
(c) Whether (a) can be replicated in another population.
(d) Whether (b) can be replicated in another population

Results for testing the four factor bullying behaviour model

Construct validity.

As can be seen in Table 2, the fit indices for the Police and the General survey all converge in suggesting the superiority of the model hypothesizing the four factor oblique model. Comparison with the other models shows that the four factor oblique model provides a better fit to the Police data than does a model hypothesizing a four-factor orthogonal model [X^2 difference (7 df) = 1042, $p < 0.01$], or uni-dimensional model [X^2 difference (10 df) = 765, $p < 0.01$]. This is confirmed by the four factor oblique model scoring much lower than its rivals do on the ECVI, which is a composite measure of badness of fit. Examination of the indices of model fit for the four factor oblique model shows that they are inside the bounds that indicate a good fit to the data [RMSEA < 0.1, NFI and CFI > 0.9]. Therefore, we can conclude that the four factor oblique model is valid for the Police survey population.

Table 2 Fit indices for four factor bullying measurement models.

(Note Method is Maximum Likelihood with ML estimation of missing values)

Fit indices for bullying behaviour measurement models: Police survey

	Model	X^2	*df*	X^2/df	*FMIN*	*RMSEA*	*ECVI*	*NFI*	*CFI*	*PNFI*
1	Unidimensional	1068	69	15.5	1.55	.145	1.65	.818	.828	.621
2	4 Factor Oblique	303	59	5.14	.440	.077	.571	.948	.958	.615
3	4 Factor Orthogonal	1345	66	20.4	1.95	.168	2.06	.771	.779	.559

Fit indices for bullying behaviour measurement models: General survey

	Model	X^2	*df*	X^2/df	*FMIN*	*RMSEA*	*ECVI*	*NFI*	*CFI*	*PNFI*
1	Unidimensional	1134	69	16.4	1.49	.143	1.585	.809	.818	.613
2	4 Factor Oblique	334	56	5.67	.440	.078	.558	.944	.953	.612
3	4 Factor Orthogonal	1390	66	21.1	1.83	.163	1.93	.766	.774	.556

However, can it be replicated in another population? The results of testing the models on the General survey confirm that the four factor oblique model has a superior fit than its rivals and also has a good absolute fit to the data (see also Table 2). The four factor oblique model thus satisfies the four criteria for construct validity.

Table 3 Standardized parameters for the four factor oblique model: Police survey

Bullying factors & acts	*Regression Weight*	R^2
Task attack [0.77]		
Withholding information	0.82	0.68
Excessive monitoring	0.66	0.44
Set unrealistic tasks	0.60	0.36
Given meaningless tasks	0.65	0.43
Personal attack [0.84]		
Belittling remarks	0.86	0.74
Persistent criticism	0.83	0.69
Public humiliation	0.74	0.55
Malicious rumours	0.61	0.37
Isolation [0.80]		
Ignored by others	0.83	0.69
Cut off from others	0.82	0.68
Verbal attack [0.66]		
Being shouted at	0.76	0.57
Verbal abuse	0.80	0.63
Physical threats	0.42	0.18

The standardized results for the Police data are shown in Table 3. The numbers in the regression weights column can be interpreted in the same way as beta regression weights in regression analysis and the numbers in the R^2 column are squared multiple correlations all of which are statistically significant at the $p < 0.01$ level. To illustrate how Table 3 can be interpreted, let us examine the latent variable Task Attack and the observed variable "excessive work monitoring". The standardized regression weight is 0.66, which indicates a predicted change of 0.66 of a standard deviation in the observed variable if there was a variation of one standard deviation from the mean in the latent variable Task Attack. The squared multiple correlation for the "excessive work monitoring" variable is 0.44, which indicates that 44 per cent of the change in the excessive work monitoring variable can be explained by changes in the latent variable Task Attack.

Overall the squared multiple correlation and standardized regression weights suggest that all but one of the observed variables are strong to moderate measures of the underlying latent variables. The exception is the variable that measures "physical threats" as this only explains 18 per cent of the latent variable Verbal Attack. As we will see later this is due to the very low incidence of this type of bullying.

Table 4 Inter-factor correlations
(Police survey correlations above the diagonal. General survey correlations below the diagonal)

Factor	*Task Attack*	*Personal Attack*	*Isolation*	*Verbal Attack*
Task Attack	1.00	0.73	0.68	0.56
Personal Attack	0.77	1.00	0.71	0.82
Isolation	0.57	0.66	1.00	0.59
Verbal Attack	0.65	0.83	0.57	1.00

The correlations between the Police latent variables are shown in Table 4 and are in the range 0.56 to 0.82, which indicates that they are moderate to strongly associated as a set of related constructs. Looking at these correlations, we can say with confidence that all of the individual latent variables are closely related but not so closely that they do not have discriminant validity. In other words, the detail measurement within the model confirms that it is a true oblique model. This conclusion is confirmed by the results for the General survey that can be found in Table 5 and below the diagonal in Table 4.

Table 5 Standardized parameters for the four factor oblique model: General survey

Bullying factors	*Regression Weight*	R^2
Task attack [0.77]		
Withholding information	0.71	0.50
Excessive monitoring	0.74	0.54
Set unrealistic tasks	0.72	0.52
Given meaningless tasks	0.73	0.54
Personal attack [0.84]		
Belittling remarks	0.80	0.64
Persistent criticism	0.85	0.72
Public humiliation	0.69	0.48
Malicious rumours	0.61	0.37
Isolation [0.80]		
Ignored by others	0.81	0.65
Cut off from others	0.79	0.63
Verbal attack [0.66]		
Being shouted at	0.68	0.46
Verbal abuse	0.81	0.66
Physical threats	0.49	0.24

Overall, therefore we can conclude that Task Attack, Personal Attack, Verbal Attack and Isolation exist as discrete but oblique constructs that describe bullying behaviour in a better way than the other models tested.

Bullying items and factors

To explore the relative impact of the bullying factors (latent variables), composite scales for each factor were calculated. Reliability testing of the internal consistency of the components of the additive scales for the Police data using Cronbach's alpha resulted in coefficients of 0.77 Task Attack, 0.84 Personal Attack, 0.80 Isolation, and 0.66 Verbal Attack. Using the minimum level of 0.7 suggested by Nunnaly (1978) all the scales can be viewed as reliable, excepting Verbal Attack, which is marginal.

Table 6: Mean scores for bullying acts and factors: Police survey

	All cases (690)		*Bullied cases (439)*	
Bullying factors & acts	*Mean*	*SD*	*Mean*	*SD*
Task attack [0.77]	**2.52**	**3.51**	**3.96**	**3.70**
Withholding information	0.94	1.36	1.48	1.45
Excessive monitoring	0.63	1.18	0.99	1.34
Set unrealistic tasks	0.52	1.07	0.82	1.25
Given meaningless tasks	0.42	0.90	0.67	1.05
Personal attack [0.84]	**1.99**	**3.17**	**3.13**	**3.50**
Belittling remarks	0.76	1.16	1.20	1.26
Persistent criticism	0.52	1.03	0.82	1.19
Public humiliation	0.38	0.82	0.60	0.96
Malicious rumours	0.33	0.83	0.51	0.99
Isolation [0.80]	**1.03**	**2.02**	**1.62**	**2.33**
Ignored by others	0.64	1.21	1.00	1.39
Cut off from others	0.40	0.99	0.62	1.19
Verbal attack [0.66]	**0.60**	**1.44**	**0.94**	**1.72**
Being shouted at	0.30	0.78	0.47	0.93
Verbal abuse	0.26	0.67	0.41	0.83
Physical threats	0.04	0.30	0.06	0.36
All Bullying acts	**6.14**	**8.37**	**9.65**	**8.74**

Factor reliability is shown in brackets [ ]

Table 6 presents the means for the scales by descending order for the 690 respondents to the Police survey and the 439 respondents who reported being victims of bullying acts (those having experienced one or more bullying act weekly).

Task Attack can be seen as the most common bullying factor followed by Personal Attack and then Isolation. Of a much lower order than the others is Verbal Attack. This is noteworthy since the bullying acts under Verbal Attack are those that are associated with the common stereotype of bullying at work – they would typify examples in awareness raising. What clearly stands out is the discreet and indirect nature of the more frequent bullying behaviours found here, which clearly differentiates this workplace bullying behaviour from the bullying stereotypes where open and direct bullying acts are expected that would be typified by Verbal Attack. The very low mean for physical threats (0.04 on a scale of 5) compared to any other bullying behaviour category further confirms this observation.

The bullied cases (439) represent 64 per cent of the cases, which indicates the widespread occurrence of the experience of workplace bullying behaviour. However, the means of the

bullied cases indicate that on average most bullying acts occur infrequently for many of the cases (the scale was out of four). In contrast, the large standard deviations suggest that a sizable minority do experience bullying acts on a more frequent basis.

Table 7: Mean scores for bullying acts and factors: General survey

	All cases (761)		*Bullied cases (493)*	
Bullying factors & acts	*Mean*	*SD*	*Mean*	*SD*
Task attack [0.79]	**2.40**	**3.46**	**3.71**	**3.69**
Withholding information	0.79	1.21	1.21	1.32
Excessive monitoring	0.50	1.06	0.76	1.23
Set unrealistic tasks	0.64	1.13	0.99	1.28
Given meaningless tasks	0.48	1.00	0.74	1.17
Personal attack [0.81]	**1.62**	**2.82**	**2.50**	**3.18**
Belittling remarks	0.59	1.02	0.92	1.15
Persistent criticism	0.49	1.00	0.75	1.16
Public humiliation	0.28	0.73	0.43	0.87
Malicious rumours	0.26	0.75	0.41	0.90
Isolation [0.76]	**0.79**	**1.67**	**1.22**	**1.94**
Ignored by others	0.47	0.99	0.73	1.15
Cut off from others	0.32	0.86	0.49	1.03
Verbal attack [0.64]	**0.48**	**1.32**	**0.74**	**1.57**
Being shouted at	0.25	0.69	0.39	0.83
Verbal abuse	0.20	0.65	0.31	0.79
Physical threats	0.03	0.30	0.05	0.37
All Bullying acts	**5.29**	**7.63**	**8.17**	**8.14**

Factor reliability is shown in brackets [ ]

Examination of the findings for the General survey (see Table 7) shows a remarkably similar pattern of experience to that of the respondents in the Police survey. Although the means are slightly lower than those found in the Police data, a similar proportion (65%) of the cases report bullying acts. What is striking is that the rank order of the factors and the bullying acts within them are identical to those found in the Police survey. The findings clearly indicate that although, as we see here, the level of bullying may vary between organizations, the nature of workplace bullying has not be found to be influenced by organization type.

Demographic affects

To assess whether bullying and its factors were associated with demographic differences between respondents, we examined the correlation of gender, age, ethnic origin and years worked for the organization with all bullying acts scale and each of the bullying factors.

In the police survey the only significant association for the all-bullying acts scale was a very weak negative one with age (-0.078, p >0.01), which is mainly explained by the weak negative correlation of age with Personal Attack (-0.118 p >0.01). Also, found for Personal Attack was a very weak association with years with the organization (-0.068, p >0.01). This contrasts with Einarsen and Raknes (1997) who found significantly more older workers reported bullying.

In the General survey a similar pattern was found of age being correlated with the all-bullying acts scale (-0.153, p >0.01). However, unlike the Police survey most of the individual factors were found to have an association with age (Personal attack -0.138, p >0.01, Task attack -0.111, p >0.01 and Isolation -0.153 p >0.01). This finding again contradicts the Einarsen et al data from Norway (ibid). In addition ethnic origin had a very weak influence on Task Attack (-0.078, p >0.01), however as numbers of non-white participants were small, this finding should be interpreted with care. 'Years worked' for the organization had a weak negative association with Isolation (-0.109, p >0.01).

Overall, it would seem that a respondent's gender or years worked for an organization have very little influence on whether they experience bullying at work. However, older respondents were slightly less likely to experience bullying behaviour than younger ones in these British surveys. This contradicts Scandinavian data – clearly a potential for future cross-cultural exploration. Unfortunately, the low number of non-white participants means that no conclusions can be drawn regarding ethnicity.

Results regarding Patterns of bullying

So far, we have examined the bullying items and factors as if the behaviours are experienced individually. However, this is unrepresentative of the experience of those being bullied since most respondents report multiple bullying acts, so using averages or means provides no information on the patterns of bullying that are experienced. To do this we need to calculate combined percentages, in which the term refers not to any accumulation of individuals but rather to the procedure of assigning individuals to categories based on the pattern of behaviours they report. A convincing discourse on the superiority of this method over others can be found in Fitzgerald, et al, 1999. Thus, if an individual reported experiencing "withholding of information" and also being the victim of "malicious rumours", that person would be assigned to a combined category of Task and Personal Attack, rather than being counted separately for each category. This procedure that we have employed in creating Table 8 and 9 not only yields less inflated estimates of the number of individuals who have experienced bullying acts but also a more comprehensive (and thus more accurate) picture of the correspondents actual experience of being bullied.

Table 8 Combined percentages for bullying patterns and acts: Police survey

T = task P = personal I = Isolation V = verbal

Neg' Acts	%	T	P	I	V		
TPVI	13.3	13.3	13.3	13.3	13.3		
TPI	8.1	8.1	8.1	8.1			
TPV	5.4	5.4	5.4		5.4		
TP	9.3	9.3	9.3				
TI	4.7	4.7		4.7			
PI	2.0		2.0	2.0			
T	9.5	9.5					
P	5.6		5.6				
I	1.0			1.0			
V	1.7				1.7		
Summary	60.6	50.3	43.7	29.1	20.4	=	95.1%
Misc' acts*	3.1	1.0	2.0	1.6	3.1	=	4.9%
All acts	63.7	51.3	45.7	30.7	23.5	=	100%
None	36.3						

Key to Negative Acts:
TPVI = task , personal, verbal and Isolation combined, TP = task and personal combined etc.
* Combined negative acts that are less than 2%

Tables 8 and 9 show the pattern of experience (i.e. joint frequencies) of the bullying factors reported by the Police and the General survey respondents respectively. These indicate that the majority of respondents had experienced patterns of bullying behaviour rather than one type of bullying behaviour. For clarity in these tables, only the patterns that are found in two or more percent of the correspondents are detailed. These patterns of bullying that are rarely found are combined in the tables under the title of 'miscellaneous acts'. Little explanatory power is lost by the omission of these rarer patterns since the main patterns shown in the table, represent 95% of all patterns in the Police survey and 93% in the General survey.

As can be seen in Table 8, Patterns that include Task attack represent the majority of patterns experienced. 13.3% per cent of the Police correspondence experience a pattern that includes all the bullying factors (TPVI) in combination. Task with Personal (TP) Attack is experienced by 9.3% of correspondents, while 8.1% experience it in combination with Isolation (TPI), and 5.4%, with Verbal Attack (TPV). While less common patterns are Task Attack with Isolation (TS, 4.7%) and Personal Attack with Isolation (PI, 2.0%). If one examines the columns in the table labelled T, P, I, and V it can be seen that each bullying factor is usually found in combination with others rather than alone. Indeed only a minority of correspondents experience only one bullying factor. The most common of these is Task Attack (9.5%) followed by Personal Attack (5.6%) and Verbal Attack (1.7%). It is notable that Isolation is almost always one of several factors in a pattern.

Looking at the bullying patterns overall it is clear that by far the most common patterns of bullying involve both Task Attack and Personal Attack while patterns involving Verbal Attack and Isolation are rare unless Task or Verbal attack are also involved. Looked at another way, there is a sequence of patterns that starts with Task Attack alone (9.5%), Task with Personal Attack (9.3%), Task with Personal Attack and Isolation (8.1%) followed by the addition of Verbal Attack to the other three factors (13.3%). This sequence represents a combined percentage of 40.2% out of the total 63.7% for all patterns. However, before we

can draw any general conclusions about these patterns we will need to see whether they are reflected in the General survey population.

Table 9 Combined percentages for bullying patterns and acts: General survey

T = task P = personal I = Isolation V = verbal

Neg' Acts	%	T	P	I	V		
TPVI	10.0	10.0	10.0	10.0	10.0		
TPI	8.7	8.7	8.7	8.7			
TPV	5.6	5.6	5.6		5.6		
TP	10.8	10.8	10.8				
TI	4.0	4.0		4.0			
PI	2.1		2.1	2.1			
T	12.2	12.2					
P	4.7		4.7				
I	2.2			2.2			
V	0.8			0.8			
Summary	61.1	51.3	41.9	27.0	16.4	=	94.1%
Misc' acts*	3.8	1.7	2.0	1.0	3.8	=	5.9%
All acts	64.9	53.0	43.9	28.0	20.2	=	100%
None	35.1						

Key to Negative Acts:
TPVI = task , personal, verbal and Isolation combined, TP = task and personal combined etc
* Combined negative acts that are less than 2%

Comparing the findings for the General survey in Table 9 with those for the Police survey in Table 8 shows that the patterns of bullying experiences is very similar. Once again it is clear that by far the most common patterns of bullying involve both Task Attack and Personal Attack while patterns involving Verbal Attack and Isolation are rare unless Task or Verbal Attack are also involved. Also, the sequence of patterns is very similar, Task Attack alone (12.2%), Task with Personal Attack (10.8%), Task with Personal Attack and Isolation (8.7%) followed by the addition of Verbal Attack to the other three factors (10%). This sequence represents a combined percentage of 41.7% out of the total 61.1% which is very close to the Police survey.

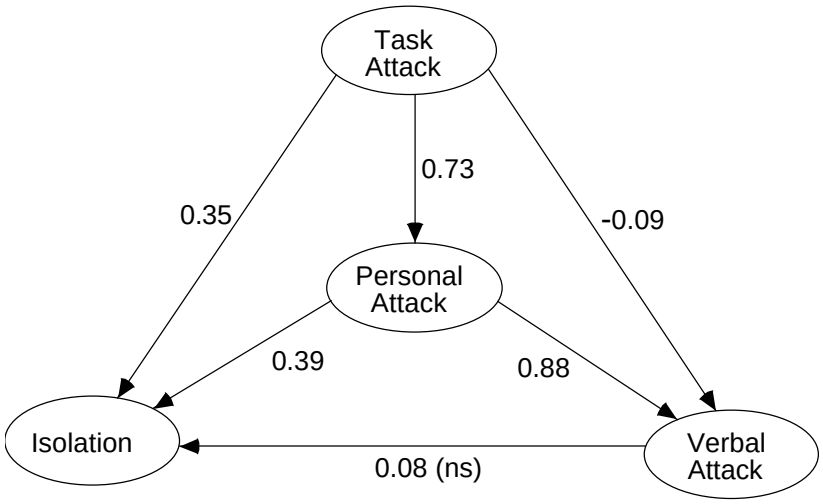
The very similar patterns of experience in the two surveys suggest that there are grounds to generalize that some patterns of bullying are more likely than others. Most bullying will involve both Task and Personal Attack with this extended to include Isolation and/or Verbal

Attack in a number of cases. In comparison, little bullying will involve Verbal Attack and/or Isolation unless Task and or Personal Attack are also present.

Modelling Patterns of bullying

We created a path diagram equivalent to the Oblique model that was validated earlier, i.e. with paths between all four factors. Task attack as the exogenous (source) variable since it was the most common form of bullying individually and in combination.

Figure 1
Bullying Patterns Oblique Model
Police survey
Cmin = 303 Df = 59 Ecvi = 0.571
Rmsea = 0.077 Nfi = 0.948 Cfi = 0.958



The Oblique (all paths) structural equation model and the standardized results for the Police data are shown in Figure 1. The model's data reinforces the findings for bullying patterns that were described earlier. Isolation is linked to both Task (Standardized regression weight 0.35, $p < 0.01$) and Personal attack (0.39, $p < 0.01$) but not to Verbal attack (0.08, $p = 0.35$). Verbal attack is strongly linked with Personal attack (0.88, $p < 0.01$) but not to Task attack (-0.09, $p = 0.18$) or Isolation (0.08 $p = 0.35$). Finally, Task and Personal attack are strongly linked (0.73, $p < 0.01$) and are the core links in the triad patterns.

Using this knowledge of the patterns of bullying behaviour, we created three variant Bullying models as a series of nested models within the Oblique model by removing some of the weaker paths as follows:

1. Main patterns model, remove non-significant paths between Task–Verbal and Verbal–Isolation.
2. Core patterns model, same as Main but also remove the next weakest path that remains (between Task–Isolation)
3. Theory model, remove paths between Task–Verbal and Task–Isolation

The theory model reflects the sequence of phases suggested by Einarsen (1999) of subtle aggression (Task and Personal Attack) being followed by open aggression (Verbal Attack) followed by stigmatism (Isolation) in the early phases of a bullying conflict.

These models were then evaluated against one another using AMOS, following the same procedure that we described earlier for measurement model testing.

Table 10 Fit indices for bullying patterns models

Model	X^2	*df*	*ECVI*	*RMSEA*	*NFI*	*CFI*
Police						
Oblique	303	59	0.571	0.077	0.948	0.958
Theory Patterns	390	62	0.688	0.088	0.934	0.943
Main Patterns*	306	61	0.569	0.076	0.948	0.958
Core Patterns	334	62	0.606	0.080	0.943	0.953
General						
Oblique	334	59	0.558	0.078	.944	0.953
Theory Patterns**	372	62	0.600	0.081	0.937	0.947
Main Patterns***	335	61	0.554	0.077	0.944	0.953
Core Patterns	338	62	0.556	0.077	0.943	0.953

Comparison with Oblique Model:
* X^2 difference (2df) = 2.57, p=0.277
** X^2 difference (2df) = 0.652, p=0.722
*** X^2 difference (3df) = 4.23, p=0.237

As can be seen in Table 10, most of the fit indices for the Police converge in suggesting a slight superiority of the model hypothesizing the main patterns model over the oblique model [X^2 difference (2 df) = 2.57, $p > 0.25$]. This is confirmed by the lower ECVI for the

main patterns model of 0.569 compared to the oblique model (ECVI, 0.571). The core patterns and theory patterns both show inferior results to the oblique model, and so were rejected at this point. Examination of the indices of model fit for the main patterns model shows that they are inside the bounds that indicate a good fit to the data [RMSEA < .1, NFI and CFI >.9]. Therefore, we can conclude that the main paths model is valid for the Police survey population. However, will it replicated in the General survey?

The results of testing the bullying pattern models on the General survey are also shown in Table 10. Again, the main patterns model has a slight superiority over the oblique model [X^2 difference (2 df) = 0.62, p > 0.50; ECVI, 0.554]. It also has a good absolute fit to the data. But in the case of the General survey, the core patterns model is an acceptable rival for the oblique model [X^2 difference (3 df) = 4.23, p >0.10; ECVI, 0.556]. However, it is inferior to the main paths model. So overall, we can confirm that the main patterns model satisfies the criteria for model superiority and validity over its rival models.

The content of the bullied experience found in the main patterns model confirms that found in the combined percentages analysis for the two surveys. The good fit of the model indicates that we can generalize the more likely occurrence of some patterns of bullying behaviours over others. Specifically, our data indicates that most bullying will involve both Task and Personal Attack with this extended to include Isolation and/or Verbal attack in a number of cases. In comparison, little bullying will involve Verbal attack unless Personal attack is also present.

It is notable that the Theory patterns model of Einarsen (1999) has the least good fit to the data in both surveys on all the measured criteria. The first two phases suggested by Einarsen (1999) are confirmed by the path model but we find that Isolation is not linked to Verbal attack but to the earlier phases of Task and Personal Attack. Therefore, the place of Verbal Attack as a precursor to Isolation in Einarsen's phases is found to be unsupported in both surveys. Our findings suggest that that Isolation and Verbal Attack are more likely to be parallel phases that follow Task and Personal Attack. However, Verbal Attack is much less frequent. It is usually found only in combination with Personal Attack.

Emotional reaction measurement model

Next, we examine the emotional reaction to bullying. To evaluate different potential models that included emotional reaction, a series of nested models were tested using confirmatory factor analysis. The models tested consisted of a uni-dimensional model that assumes that there is only one latent variable which covers all the emotional reactions, an orthogonal model that splits the emotional items randomly into two latent variables and finally an oblique model with the same split into two latent variables.

Table 11

Fit indices for Emotional Reaction measurement models: Police survey

Note: Method is Maximum Likelihood with ML estimation of missing values

	Model	X^2	*df*	X^2/df	*FMIN*	*RMSEA*	*ECVI*	*NFI*	*CFI*	*PNFI*
1	Unidimensional	349	44	7.93	.507	.100	.602	.951	.961	.637
2*	2 Factor Oblique	341	43	7.93	.495	.100	.594	.956	.961	.623
3	2 Factor Orthogonal	1227	44	27.9	1.78	.198	1.877	.842	.847	.562

*Correlation 0.98 between factors. Therefore model is rejected for insufficient difference.

Fit indices for Emotional Reaction measurement models: General survey

	Model	X^2	*df*	X^2/df	*FMIN*	*RMSEA*	*ECVI*	*NFI*	*CFI*	*PNFI*
1	Unidimensional	311	44	7.07	.409	.089	.496	.951	.957	.634
2*	2 Factor Oblique	290	43	6.74	.381	.087	.471	.954	.960	.622
3	2 Factor Orthogonal	825	44	18.75	1.086	.153	1.17	.869	.875	.580

*Correlation 0.94 between factors. Therefore model is rejected for insufficient difference.

The construct validity of the models was tested using the procedure described earlier. The fit indices for the researcher-generated rival emotional reaction models are shown in Table 11. In the Police survey, it was found that the best-fit statistics are on the two factor oblique model. However, the inter factor correlation was calculated as 0.98, which is consistent with a uni-dimensional rather than an oblique model. Therefore, this model

must be rejected for insufficient discriminant validity. The uni-dimensional model is seen to have a similar fit to the rejected oblique model and a superior fit to the orthogonal model, so it is the uni-dimensional model that is accepted as valid for the Police survey. This is confirmed by the almost identical pattern of results found in the General survey.

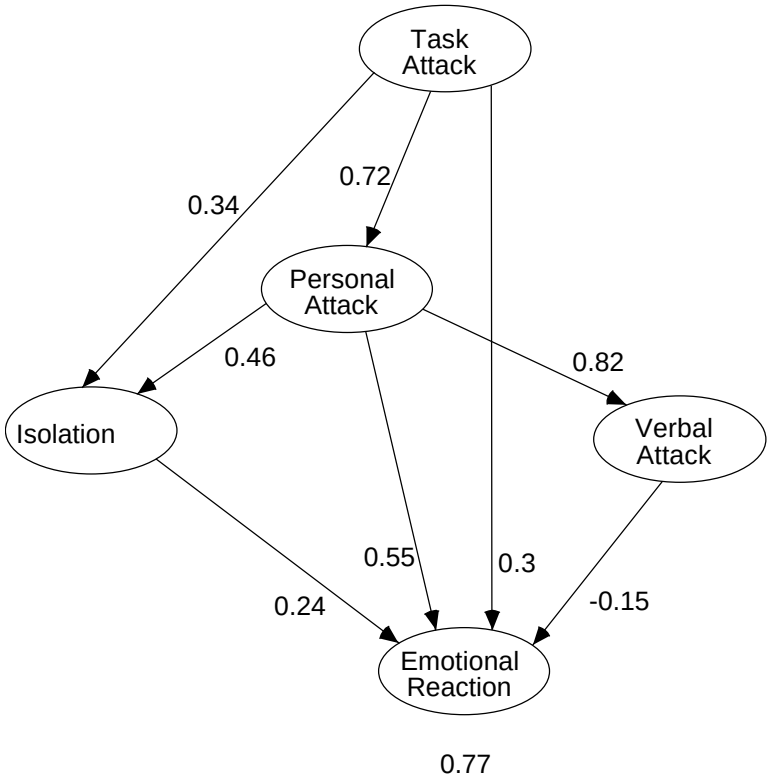
In addition both the surveys show statistically significant and strong regression weights for all the observed variables in the scale, Police: 0.66 to 0.85, $p < 0.01$; General: 0.62 to 0.76, $p < 0.01$. Calculation of the emotional reaction scale's internal reliability gave a Cronbach's alpha of 0.95 both for the Police and the General survey, which is indicative of strong internal reliability. We can thus confirm that Emotional Reaction can be seen as a single dimension with a scale that meets the criteria for construct validity.

Emotional reaction and bullying patterns

Figure 2 shows the standardized results for the Police survey when the emotional reaction variable is added to the Main Patterns Bullying model. The fit indices indicate that the model remains a good fit (RMSEA = 0.078, NFI = 0.916 and CFI = 0.931).

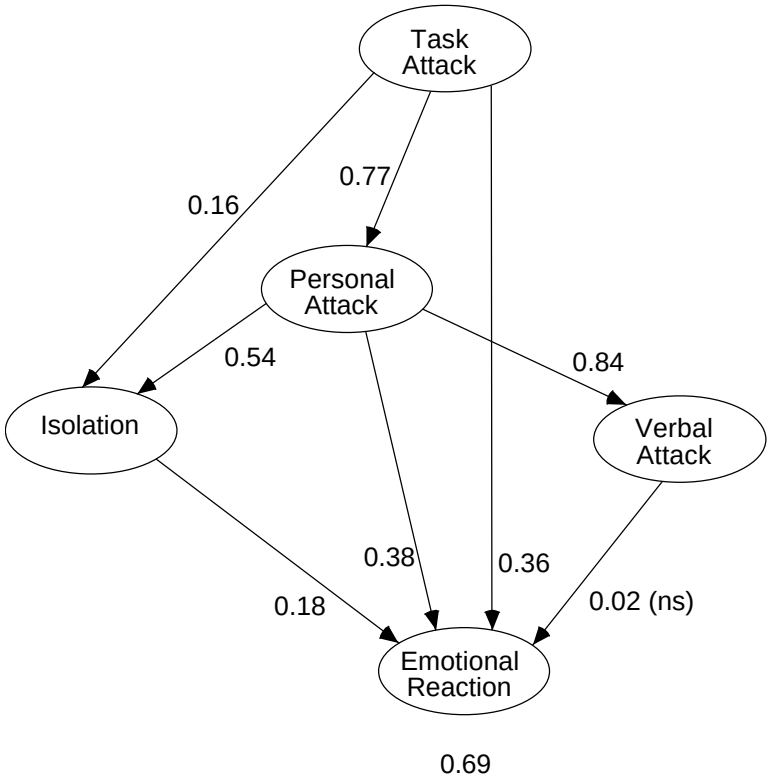
Personal Attack has the strongest effect on Emotional Reaction (with a regression weight of 0.55), followed by Task Attack (0.30) and Isolation (0.24). In contrast, Verbal Attack is seen to have a weak negative effect on Emotional Reaction (-0.15), which is indicative of a poor or unstable predictive variable. This proposition was tested by removing the path between Verbal Attack and Emotional Reaction, which revealed a marginal change in the model fit (X^2 difference (3df) = 6.10, $p > 0.10$). Overall, the combined effect of the bullying patterns explains 77 per cent of the variation in Emotional Reaction found amongst Police respondents.

Figure 2
Reaction to Bullying
Police survey
Cmin = 1256 Df = 244
Rmsea = 0 .078 Nfi = 0 .916 Cfi = 0.931



The findings from the Police survey were then validated by testing the model on the General survey. The results shown in Figure 3 confirm that Personal Attack is the strongest predictor of Emotional Reaction (0.38), followed by Task Attack (0.36) and Isolation (0.18). Verbal Attack is again found to have a very weak and statistically insignificant effect on Emotional Reaction (0.02, p = 0.84), which confirms its' status as a poor predictor of Emotional Reaction. Overall the regression weights are not as strong as those for the Police survey and they explain a slightly lower proportion (69%) of the General respondents Emotional Reaction to bullying.

Figure 3
Reaction to Bullying
General survey
Cmin = 1103 Df = 244
Rmsea = 0 .068 Nfi = 0 .916 Cfi = 0.933



To examine the stability of the model parameters across the samples, we contrasted the structural parameters estimated for the Police survey (see Figure 2) and the General survey (see Figure 3) using AMOS's capacity for multi-sample analysis. We found no significant differences in the structural parameters obtained by freely estimating the model in both samples (X2 (494) = 2378.66) and those obtained by constraining the structural parameters in the General sample to equal those in the Police sample (X2 (497) = 2380.13). Overall the results of an X2 difference of only 1.47, for three additional degrees of freedom ($p > 0.50$). This shows a strong cross-survey validation of the bullying latent variables and their relationships.

Given that we have established that there are only small variations in the model's structural parameters between the two surveys we can say with confidence that the bullying behaviours model and the patterns between the latent bullying factors of Task, Personal, Verbal Attack and Isolation are valid and reliable constructs. We can therefore conclude

that the lower level of emotional reaction found in the General survey of 69% compared to the 77% found in the Police can be explained by the overall lower level of bullying behaviours reported in the General survey compared to the Police one.

Discussion of results

We will first summarize our findings from the statistical analysis by revisiting the three research propositions

P1 Bullying exists as discrete but oblique latent variables that can be identified in a significant proportion of the working population.

Our findings strongly support this proposition. An oblique model with four factors, Task Attack, Personal Attack, Isolation and Verbal Attack was found to be superior to other credible measurement models of bullying. Our confirmatory factor analysis found that this four factor oblique model that is based on commonalities in the previous research (Einarsen and Raknes, 1997; Leymann, 1996; Niedl, 1995; Vartia, 1993; and Zapf, et al, 1996) met all the criteria for construct validity.

P2 The bullying latent variables will relate to one another in progressive incremental patterns as indicated by Einarsen (1999).

We have found partial evidence to support the patterns of bullying described by Einarsen. Einarsen's patterns have the least good fit to the data in both surveys on all the measured criteria. The first two phases suggested by Einarsen are confirmed by the path model but we found that Isolation is not linked to Verbal attack but to the earlier phases of Task and Personal Attack. Therefore the place of Verbal Attack as a precursor to Isolation in Einarsen's adaptation of Glasl's (1982) phases is found to be unsupported in by both surveys.

Instead our findings suggest that that Isolation and Verbal attack are parallel phases that follow Task and Personal Attack. However, Verbal Attack is much less frequent and usually found only in combination with Personal Attack. These findings echo the patterns (but not

the content) of Van de Vliert et al (1995) that looked at conflict resolution methods *in parallel*. Their work revealed a level of complexity that is rarely found in research studies and is closer to real life, showing that many participants used a combination of conflict resolution approaches. It is possible that a similar pattern has been exposed in this study, which would not be surprising. In our study the use of combined percentages has allowed the authors to reveal the combinations of experiences reported by people experiencing bullying behaviour at work, and these patterns are different from those predicted by the scant theory bases that exist in the field.

P3 The model of the relationship between the bullying latent variables and the emotional reaction to them, will be replicable in a different organizational setting.

Strong evidence has been found to support this proposition. A single construct of emotional reaction was found in one setting, and replicated in a second setting. Our findings indicate that Personal Attack has the strongest effect on Emotional Reaction, followed by Task Attack and Isolation. In contrast Verbal Attack appears to have little effect on Emotional Reaction in its own right, which suggests that it may be viewed as an extension of Personal Attack rather than a substantive factor (latent variable) when considering Emotional Reaction.

A strong cross-survey validation of the bullying latent variables and their relationships was established. Testing the stability of the model parameters across the samples found no significant differences. A result that shows that the oblique relationship between the four bullying latent variables and the emotional reaction to them is replicable in a different organizational setting. Overall, the combined effect of the bullying patterns explains 77 per cent of the variation in Emotional Reaction found amongst Police respondents and 69 per cent in the General survey, the differences which can be explained by the lower levels of bullying found in the General survey.

Having reviewed the findings the discussion will now progress to examining what 'actionable knowledge' can be gained for the practitioner from the analysis. The statistical analysis has been a logical progression through a series of confirmatory tests using real data

that provides strong evidence for defined groupings and patterns of workplace bullying behaviour. Thus providing information that can be used to inform a widespread workplace-based problem. This problem urgently needs actionable knowledge (Rayner, 1998) as practitioners in the area are restricted to using use their own experiences (which may be unrepresentative, mis-interpreted or subjectively filtered for example) unless they have access to others' data or experience. In order to facilitate such actionable knowledge, the findings will now be discussed with the practitioner in mind.

Generating a valid set of variables that make up the bullying construct is useful actionable knowledge in itself. The authors have found that, rather than struggling with the 'what is attacked' versus 'how it is attacked' divide found in previous work, combining the two approaches has resulted in a coherent and small group of factors. Potential bullying strategies (how attacks are made on either the task or on someone's personal aspects) are endless, as shown in workplace policy definitions (e.g. IDS, 1999). For actors who have not been involved in such incidents before, labelling might be difficult as has been shown in sexual harassment (O'Leary-Kelly, Paetzold & Griffin, 2000). Thus the overarching latent variables of Task Attack, Personal Attack, Isolation and Verbal Attack can be useful to others to use as credible and evidence-based features of what constitutes bullying behaviour. Although some bullying actions are tangible and easily recognisable such as those covered by the Verbal Attack factor, the analysis shows that these bullying behaviours are rare compared to the much more widespread bullying acts under the Task Attack, Personal Attack and Isolation factors. These bullying acts which are aimed at undermining the work and personal standing of the victim are subtle and indirect but create significant emotional stress for the victim.

Verbal aggression has tended to be the example used to demonstrate the 'bullying at work' concept – the 'classic' example being the yelling and shouting boss. The movie "Swimming with Sharks" has an extraordinary performance by Kevin Spacey as a bullying boss who, loudly and repeatedly, tells his assistant "You have no brain! You are nothing!" amongst (many) other demeaning verbal abuses. This is a straightforward way to undertake awareness training (e.g. Ishmael, 1999). However, the actionable knowledge demands that

trainers must beware of using this without some caveat, as our data shows that verbal abuse has the lowest reporting incidence of the four factors. Contrary to popular texts, Verbal Attack is thus not typical of bullying reports.

One aim of this study was to provide a framework into which other academics could add their knowledge and research findings. Hopefully the four-factor approach has delivered that aim. The model exampled in Figure 2 can be used by specialist researchers who focus in narrow and specialist aspects that have the potential of contributing to understanding bullying at work. The model could be used as a schema if dynamic approaches were being contributed or, more simply, to provide a context in which the behaviours they have chosen to study can be placed. Through this, we would hope that further work can be created from which clearer categorizations might develop.

Verbal Attack is worthy of some further discussion as the statistical results were surprising to the authors both in their relationship to personal attack and also emotional reaction. The only strong association between Verbal Attack and other factors is with Personal Attack. It is logical that Verbal Attack is not associated with Isolation (it might be seen as the antithesis of isolation?). Why it is not associated with Task Attack is unknown to these researchers. Anecdotal data holds many examples of reports of targets of bullying being verbally abused *about their work*. Possibly people find the experience of Verbal Attack as inherently personal in nature and that the deeper connections take precedence, are remembered selectively and then personal aspects of their bullying experience are subsequently reported. This argument has led to us consider the path on the diagram in Figure 2 as being Verbal Attack contributing to Personal Attack. There are, however, many links in this postulated chain and undoubtedly this is an area worthy of further investigation in order to provide more evidence-based suggestions. It is useful for practitioners to know that where verbal abuse does occur, it is likely to be taken as 'personal' even though it may be overtly directed to the task. Clearly richer evidence (ideally observation) could test this much more effectively.

Given the strong and positive association between Verbal Attack and Personal Attack, it is surprising to find that there is little linkage between Verbal Attack and Emotional Reaction. The low incidence of Verbal Attack is the most likely explanation for this.

It is likely that emotional response is very much part of the stress/strain reaction from those who experience bullying behaviours (Lazarus & Folkman, 1984). That respondents' reports of emotional reactions appear to group into one factor simplifies the approach we can take. Keashly raised the point that we assume bullying attacks are destructive (1998), and some evidence has supported this (e.g. Rayner, 1999b). This study provides a strong contribution to the evidence that gives credence to the linkage of distress with the experience of bullying behaviours at work.

Given the role that negative emotional reaction has as a key source of strain in harassment, the practitioner will want to try to find strategies to avoid strain if possible. A strong relationship between Personal Attack and Emotional Reaction is revealed in the results of this study and, per se, Verbal Attack (see Figure 2). Thus Personal and Verbal Attack are aspects of high risk for emotional reaction, thus strain, and potentially the damaging side of workplace bullying. The association between respondents' Emotional Reaction and the other two factors (Task Attack and Isolation) whilst substantial, is only around half of that for Personal Attack in the Police survey. In addition, Isolation rarely occurs on its own, unlike Task Attack.

Could there be a lower risk from damage to individuals at work if they are subjected just to Task Attack? Due to the strong linkage between Task and Personal Attack it would appear that this is not the case. We have suggested that a 'typical' pattern might start with attacks to the task, which then become attacks on a more personal basis and possibly (but less likely) verbal abuse or isolating tactics. The key here is the strong link between Task and Personal Attack – do attacks on the task, when repeated, start to feel like a personal attack and thus those types of behaviours are mentioned by respondents? Or do the bullies actually develop their tactics starting with the task and expanding to personal attacks? Without doubt this is an area worthy of further investigation. If either type of progression

were to be common, then the employer would have a window of opportunity for intervention before someone was damaged – i.e. at the start of attacks on the task, but before these had progressed to personal attacks (or perhaps being perceived as personal attacks).

This last point indicates a fundamental limitation to this and similar studies – that our data is from subjective and unsubstantiated accounts. How do we know that we are receiving reports of genuine differences in the way someone is treated or that these are shifts in respondents' interpretation of how they are treated at work? Other methodological strategies would be useful (e.g. observations) to provide triangulating evidence for some of the patterns that have been suggested as a result of this analysis. However creating actionable knowledge is not a one-way street from the academic to the practitioner. In the UK we have learnt a considerable amount from practitioners working with situations that are 'bullying'. Their clear message to academics is that the question of whether or not a staff member is justified in their claims of bullying behaviour is actually the second stage in a process. The first stage is that the staff member must be taken seriously because they think they have been attacked. This validates the use of subjective accounts as having inherent value, and differentiates this type of enquiry from a legal perspective. However, academic researchers who employ methodologies such as cross sectional surveys must always be aware that they are working with subjective accounts, and to use care when considering the 'real' from the 'perceived'.

Two further limitations to the study are also of importance. While the initial sample sizes for both studies seemed substantial, our analysis has found that for the behaviours that are less common (such as those within Verbal Attack) a larger sample would have been helpful to make further investigation of the smaller sub-categories worthwhile. Finally the studies were both conducted in the UK. It has been shown that some of the findings contradict data from other countries, and this has been interpreted by the authors as worthy of cross-cultural comparison. Without doubt the field would benefit from more cross-cultural studies. In this way we could discover where there are areas of cross cultural similarity and

difference, and then non-cultural study differences could be better identified and explored.

Conclusions

The analysis in this paper presents the first systematic examination of data collected related to the experience of bullying behaviour at work using structural equation methods of modelling. One aspect of bullying at work is the wide range of behaviours that are covered within the term, and the authors have provided a beginning for the analysis of such data into sub variables so that patterns can be better understood. While previous studies using exploratory factor analysis have found weak groupings of categories, our re-analysis of two data sets have revealed robust variables; Task Attack, Personal Attack, Isolation, and Verbal attack. Subsequent modelling has shown that, contrary to current theory within the literature on bullying at work, a sequence of initial attack on Task or Personal basis is typical and that this might be followed by Isolation. The analysis has shown that Verbal attack is less common and generally connected to Personal Attack over Task Attack.

When examining the emotional reactions reported by those who experienced bullying behaviours, the strongest reactions were related to Personal Attack. In addition Task Attack was highly associated with Personal Attack, although the nature of the association in reality was unknown, and is worthy of further investigation.

Providing insight into some of the dynamics of emotional reaction was seen as useful for the practitioner, as this is an area of risk for stress. Further contributions to actionable knowledge were suggested by means of a discussion of intervention opportunities before Task Attack became Personal Attack, and also the need to treat Verbal Attack carefully. The latter point was made partly because Verbal Attack is not commonplace, thus it should only have a small place in awareness-raising sessions at work, but also because Verbal Attack seems to have loose associations with other factors.

A model was provided which showed some of the patterns found and discussed. It is hoped that others working in tangential areas can use this model to locate their own contributions

to the field. Limitations to the study were summarized as related to the uncorroborated subjective nature of the reports on which the study was based, small sample size when looking at less common categories of behaviours, and the need for a better understanding of the cross-cultural aspects of this topic of study.

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