

Assessment of Recall of Threat and Submissiveness in Childhood: Development of a New Scale and its Relationship with Depression, Social Comparison and Shame

P. Gilbert,* M. S-P. Cheung, T. Grandfield, F. Campey and C. Irons

Mental Health Research Unit, Kingsway Hospital, Derby, UK

Research on the link between recall of early parenting and psychopathology has focused on recall of *parental behaviours* such as neglect, rejection, low warmth and overprotection. This study investigates recall of the *personal feelings* of perceived threat and subordination in childhood. A short, new self-report scale was developed, called the Early Life Experiences Scale (ELES) and given to 225 undergraduate students. Analysis revealed three factors: a factor for *threat*, a factor related to *submissiveness* and a factor related to feeling (*un*)valued. All participants completed measures of recall of parental behaviour and depression; 119 also completed a shame scale, and 106 completed a social comparison scale. Both the recall of parental behaviour measure and the ELES correlated significantly with depression, social comparison and shame. However, a standard multiple regression analysis found that only the submissive factor of the ELES predicted depression. Copyright © 2003 John Wiley & Sons, Ltd.

INTRODUCTION

A well-established finding in psychopathology research is that recall of aversive early experiences is

associated with a range of psychological problems in adulthood, especially mood disorders (Parker, 1983; Perris, 1994; Richter, Richter, Eisemann, Seering, & Bartsch, 1994; Rutter *et al.*, 1997). There is also increasing evidence that negative experiences (e.g. parental unresponsiveness, shaming and abuse) are associated with various stress responses (Perry, Pollard, Blakley, Baker, & Vigilante, 1995) and

*Correspondence to: Professor P. Gilbert, Mental Health Research Unit, Kingsway Hospital, Derby DE22 3LZ, UK.
E-mail: p.gilbert@derby.ac.uk

that chronic stress in childhood can significantly affect psychobiological maturation (Schore, 2001). Abused people are vulnerable to depression (Hart, Gunnar, & Cicchetti, 1996), can exhibit increased hypothalamic–pituitary–adrenal axis (HPA) activation and poorer recovery from stress than non-abused people (Heim *et al.*, 2000), and show abnormalities and shrinkages in areas of the brain such as the amygdala, hippocampus and orbital frontal cortex (Teicher, 2002). Parental behaviour has been seen as the major source of such childhood stress.

There have been a number of measuring instruments, derived from attachment theory (Bowlby, 1980; Gerlsma, Arrindell, & Emmelkamp, 1991), that ask people to recall parental behaviour in childhood. Factor analytic studies of one self-report scale on parental behaviour (s-EMBU scale) found three main factors: emotional warmth, over-protection and rejection. These factors are significantly associated with various psychological problems (Richter, Eisemann, & Richter, 1991; Rojo-Moreno, Livianos-Aldana, Cervera-Martinez, & Dominguez-Carabantes, 1999; Tiggeman, Winefield, Goldney, & Winefield, 1992). Indeed, many studies have found that low parental warmth and high control are associated with various neurotic disorders (Feldman & Gotlib, 1993; Gerlsma, Emmelkamp, & Arrindell, 1990) psychotic disorders (Onstad, Skre, Torgersen, & Kringlen, 1993) and depression (Mackinnon, Henderson, & Andrews, 1992).

To date many of the 'recall of parental rearing' instruments, that explore the association between early parenting and subsequent pathology, have focused on recall of *parental behaviour*, rather than *personal feelings and behaviours*. It is possible, however that people can recall parental behaviour in a certain way but have different feelings about it. For example, patients may say 'my parents loved and cared about me but I did not feel loved'. Alternatively, a person may feel threatened in a relationship but not feel subordinate or act submissively. This study therefore set out to explore recall of a particular set of personal feelings and behaviours. Clearly, there are many themes that could be selected, such as recall of feeling loved, secure, unwanted, ignored, special and such like. However, we chose to focus on themes related to social rank theory (Gilbert, 1992, 2001; Gilbert, Allan, Brough, Melley, & Miles, 2002). This theory suggests that child-parent relationships are also power relationships. Whereas attachment theory tends to focus

on the 'absence' of warmth or parental intrusiveness/control, rank theory focuses more on down rank threats and submissive behaviour. Hence, children who are frightened of their parents and feel forced into *unwanted* or *involuntary* subordinate positions may adopt various submissive and 'low rank' defensive behaviours. Fear-based submissive defences are associated with inhibited assertive behaviour, backing down if challenged, appeasing others, poor initiation behaviour or 'taking a lead' in social encounters and lowered positive affect (Gilbert, 2000a; Gilbert *et al.*, 2002). A child that has to be overly attentive to threats (rather than be able to rely on parents for safety, emotional regulation and secure attachment) may be more vulnerable to depression (Gilbert, 1993; Sloman & Atkinson, 2000).

Another reason to focus on themes of threat and submissive behaviour is that subordination and down rank threats are known to be highly stressful with many physiological effects. There is much evidence that in primate groups the lower subordinate positions are associated with heightened activation of the HPA (Sapolsky, 1989, 1994), changes in serotonin metabolism (Raleigh, McGuire, Brammer, & Yuwiler, 1984) and effects on dopamine, especially D₂ receptors. For example, Grant *et al.* (1998) found lower D₂ receptors among subordinate monkeys, hypothesizing that the stress of subordination produced a downregulation of D₂ receptors in monkeys. Shively (1998) found that social subordination is associated with poorer regulation of the HPA system. As noted above, poor HPA regulation in humans is also associated with vulnerability to psychopathology. One source of this may be a child's experience of being threatened and needing to use submissive defensives. Like some subordinates in primate groups, or women subjected to domestic threats or violence, children can be (and feel) trapped, and unable to escape from 'frightening' others (parents). Entrapment in aversive environments has been linked to depression (Gilbert & Allan, 1998; Gilbert *et al.*, 2002). Moreover, some parents can perceive their children as subordinates who need controlling, are less likely to reason with them, and use threat as a means of control (Patterson, 1988).

Hence, rather than feeling secure or safe, children can grow up in environments where they are stressed and fearful, and treated as subordinates by their parents. Such early relating styles will impact on stress responses (Perry *et al.*, 1995), affect physiological processes (Schore, 2001) and influence self-other schema (e.g. to see self as

inferior to others, thinking that others look down on the self, and tendencies to behave submissively). This fearful subordinate/submissive style has been found to link highly to depression (Allan & Gilbert, 1997; Gilbert & Allan, 1998; Gilbert *et al.*, 2002), social anxiety and shame (Gilbert, 2000b).

To test this hypothesis we sought to explore recall of feeling frightened of one's parents and having to behave in subordinate ways in one's family; that is to investigate general affect memories and defensive behaviours from early life. However, we could find no self-report scale(s) that allowed for measurement for adult recall of the levels of how frightened/threatened they felt as a child. Similarly, we could find no scale(s) measuring recall of subordination and submission to parents. Hence, a first step in this research was to develop a short questionnaire that asks directly about recall of feelings of threat/fear and subordination in the family.

METHOD

Participants

A total of 225 undergraduates (171 women, 54 men) completed a battery of self-report measures. The age range was 18 to 53 years (mean = 24.53 years, SD = 7.33 years). Of these, 119 participants (mean age = 22.28 years, SD = 5.26 years) also completed a shame scale and 106 participants (mean age = 27.06 years, SD = 8.45 years) completed the social comparison scale. All participants were volunteers and were credited with participation points as part of their University of Derby course requirements.

Measures

The Early Life Experiences Scale (ELES)

This scale was designed to measure recall of perceived threat and subordination in childhood. We decided to keep the scale short in the first instance with the possibility of increasing items in light of research findings. The scale thus consists of 15 items (see Table 1) focusing on recall of perceived threat (six items) and feeling subordinate and acting in a submissive way (nine items). Items were generated in consultation with clinical psychologists from typical statements and experiences reported by patients in psychotherapy. A short informal pilot study indicated that no questions were problematic for participants in terms of comprehension.

The response measure consisted of a Likert-type scale with participants required to rate how frequently and how true each statement was for them in their childhood (1 = completely untrue, 2 = very occasionally true, 3 = sometimes true, 4 = fairly true, 5 = very true). Three items were reversed (for details see Table 1) in order to minimize any response bias.

The Short EMBU (s-EMBU)

The EMBU is a Swedish acronym for Egna Minnen Beträffande Uppfostrab—'My memories of upbringing'. This self-report scale was developed by Perris, Jacobsson, Lindstrom, von Knorring and Perris (1980) and has been used in a variety of research studies. Recently, a short form of the EMBU has been developed (Arrindell *et al.*, 1999) which consists of 23 items measuring rejection, emotional warmth and overprotection, answered for both parents individually. It uses a 4-point scale ranging from 1 (no, never) to 4 (yes, most of the time). The short version of the EMBU has been demonstrated to be valid and reliable in several countries and languages, with all subscales reaching a Cronbach alpha ≥ 0.74 (Arrindell *et al.*, 1999). In the present study Cronbach alpha's were 0.80 (rejection), 0.90 (emotional warmth) and 0.78 (overprotection).

The Centre for Epidemiological Studies Depression Scale (CES-D)

This scale measures depression in non-clinical populations (Radloff, 1977) and has been recommended for use with students (Gotlib and Hammen, 1992). The scale consists of 20 items, with participants indicating on a scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time) how often they have experienced symptoms such as disturbed sleep, loss of appetite and depressed mood over the past week. Total scores are obtained ranging from 0–60 with higher scores indicating more depressive symptoms. The Cronbach alpha in this study was 0.90.

Other as Shamer Scale (OAS)

This scale was developed by Goss, Gilbert and Allan (1994) and Allan, Gilbert and Goss (1994) to measure external shame (how an individual thinks others see him/her). The scale consists of 18 items asking respondents to indicate the frequency of their feelings and experiences to items such as, 'I feel insecure about others opinions of me' and 'Other people see me as small and insignificant' on

a 5-point Likert scale (0—4). The Cronbach alpha in this study was 0.93.

Social Comparison Scale (SC)

This scale was employed in order to explore how recall of parenting was related to current feelings of being inferior to others. Participants were given the 11-item scale developed by Allan and Gilbert (1995), which taps global comparisons to others in the domains of attractiveness, rank and group fit (feeling similar or different to others). The scale utilizes a semantic differential methodology whereby participants respond on a scale of 1 to 10, for example: 'In relation to others I feel:

Incompetent 1 2 3 4 5 6 7 8 9 10 Competent

The total Cronbach alpha reported by Allan and Gilbert (1995) was 0.91, and in the present study was 0.81.

RESULTS

All analyses were carried out using the SPSS package version 10 for PCs. Data was screened for normality of distribution and outliers. Five participants were coded as outliers and subsequently excluded

as determined by box plots, histograms and standardizing the scores with a cut-off point of ± 3.00 (Norman & Streiner, 2000). Therefore the final sample used was 220 undergraduates (167 women, 53 men), age range was 18 to 53 years (mean = 24.35 years, SD = 7.19). The first part of the analysis was to explore the psychometric properties and factor structure of the ELES.

Factor Analysis

An initial reliability analysis of the ELES yielded an internal consistency coefficient $\alpha = 0.92$. The Kaiser–Meyer–Olkin Measure of Sampling Adequacy (0.92) and the Bartlett's test of Sphericity ($1654.73, p < 0.000$) demonstrated that the sample was adequate thus permitting an Exploratory Factor Analysis (EFA) of the scale. Principal axis analysis followed by the Direct Oblimin rotation with Kaiser nomination yielded a 3-factor solution which explained 63% of the total variance. These factors with the full scale items are given in Table 1.

The first factor included six items related mostly to perceived threat (e.g. 'In order to avoid getting hurt I used to try to avoid my parents') which we will refer to as *threat*. The second factor included six items that related to submissive behaviour. These included items such as, 'I often had to go along

Table 1. Factor loadings of the ELES

Item no.		Factor 1	Factor 2	Factor 3
		Threat	Submissiveness	(Un)valued
13	In order to avoid getting hurt I used to try to avoid my parents	0.90	-0.08	-0.04
14	The atmosphere at home could suddenly become threatening for no obvious reason	0.88	-0.05	-0.03
15	I experienced my parents as powerful and overwhelming	0.77	0.00	0.11
11	My parents exerted control by threats and punishments	0.76	0.14	-0.06
8	My parents could hurt me if I did not behave in the way they wanted	0.73	0.05	0.09
4	There was little I could do to control my parents anger once they became angry	0.53	0.30	0.02
12	I often had to go along with others even when I did not want to	-0.04	0.87	-0.02
1	I often had to give in to others at home	-0.01	0.85	-0.11
5	If I didn't do what others wanted I felt I would be rejected	0.10	0.63	0.16
3	I rarely felt my opinions mattered much	0.07	0.56	0.34
2	I felt on edge because I was unsure if my parents might get angry with me	0.36	0.50	-0.02
10	I often felt subordinate in my family	0.23	0.37	0.22
6 (R)	I felt able to assert myself in my family	-0.12	-0.04	0.84
9 (R)	I felt an equal member of my family	0.04	0.28	0.71
7 (R)	I felt very comfortable and relaxed around my parents	0.26	-0.10	0.65
	Eigenvalue	7.07	1.16	1.28
	Variance (%)	47.15	7.74	8.52

(R) = reverse coded item.

with others even when I did not want to' and 'I often had to give in to others at home'. A third factor loaded on the three positive items that were reversed, 'feeling equal, feeling relaxed, and able to assert self in the family'. Because these items separated into this factor we called it (un)valued. We suspect that these experiences tap a more co-operative and affiliate relational style. Although, possibly related to secure attachment the focus here is on recall of personal feelings, and not what others (e.g. parents) did. Subsequent reliability analysis of the three subscales revealed a Cronbach alpha of 0.89 for threat, 0.85 for submissiveness and 0.71 for (un)valued.

Means and Standard Deviations for Measures

The means and standard deviations for all measures are given in Table 2.

Score on all measures were similar to previous studies.

Correlations Between Variables

Table 3 gives the Pearson product moment correlation coefficients for all variables.

The ELES

While the factors of threat and subordination were highly correlated with each other, the factor (un)valued was less highly correlated. This suggests it was tapping a different, positive dimension. Our efforts at reverse coding to develop positively worded items to fit the submissive/fear constructs were unsuccessful.

Table 2. Means and standard deviations for the ELES, s-EMBU, CES-D, OAS and SC

	Mean	Standard Deviation
ELES (<i>n</i> = 220)	32.53	12.02
Threat	11.26	5.67
Submissiveness	14.21	5.24
(Un)valued	7.06	2.91
s-EMBU (<i>n</i> = 220)		
Rejection	9.95	3.46
Emotional warmth	18.18	4.49
Over-protection	20.03	4.70
CES-D (<i>n</i> = 220)	17.94	10.78
OAS (<i>n</i> = 118)	18.93	11.77
SC (<i>n</i> = 106)	62.99	15.06

ELES, Early Life Experiences Scale; s-EMBU, short form of the EMBU; CES-D, Centre for Epidemiological Studies—Depression; OAS, Other as Shamer Scale; SC, Social Comparison Scale.

The ELES and s-EMBU

Recall of perceived threat and submissiveness in the family were highly correlated with recall of negative parenting behaviours especially rejection (s-EMBU). The factor (un)valued had the highest correlation (negative) with emotional warmth. Again this may indicate a domain of affiliation in the family.

Depression

Keeping in mind that the CES-D measures depressed mood in students rather than clinical

Table 3. Correlations (two-tailed Pearson's *r*) between early life experiences, recall of parental behaviour, depression, social comparison and shame (*n* = 220)

	ELES	ELES T	ELES SUB	ELES UV	s-EMBU REJ	s-EMBU EW	s-EMBU OP	CES-D	SC [†]
ELES T	0.91***								
ELES SUB	0.91***	0.72***							
ELES UV	0.72***	0.51***	0.54***						
s-EMBU REJ	0.78***	0.73***	0.66***	0.59***					
s-EMBU EW	-0.56***	-0.46***	-0.43***	-0.64***	-0.57***				
s-EMBU OP	0.45***	0.43***	0.43***	0.24***	0.41***	-0.09			
CES-D	0.39***	0.32***	0.39***	0.27***	0.32***	-0.15*	0.22**		
SC [†]	-0.38***	-0.32**	-0.31**	-0.39***	-0.46***	0.32**	-0.18	-0.44***	
OAS [‡]	0.44***	0.30**	0.47***	0.38***	0.40***	-0.27**	0.31**	0.54***	N/A

ELES, Early Life Experiences Scale; ELES T, Threat; ELES SUB, Submissiveness; ELES UV, (Un)valued; s-EMBU REJ, Rejection; s-EMBU EW, Emotional Warmth; s-EMBU OP, Overprotection; CES-D, Centre for Epidemiological Studies—Depression; SC, Social Comparison; OAS, Other as Shamer Scale.

*** *p* < 0.001 level; ** *p* < 0.01 level; * *p* < 0.05; [†] *n* = 102; [‡] *n* = 118.

states, both the ELES and the s-EMBU showed significant correlations with depression.

Social Comparison and Shame

Both the ELES and the s-EMBU had moderate but significant correlations with social comparison and shame, with the exception that the s-EMBU (overprotection) was not significantly correlated to social comparison. The subordination factor of the ELES was especially linked to the OAS (thinking that others look down on the self).

Regression Analysis

Given the high correlations between the ELES and s-EMBU we wanted to explore the relative contribution of these variables to depression. Hence, a standard regression analysis using the enter method was employed to investigate the relative contribution of the ELES and the s-EMBU in predicting depression (as measured by the CES-D). The results are presented in Table 4.

The regression equation accounted for 17% of the variance in the prediction of the dependent variable and the multiple correlation coefficient was 0.411 ($F(6, 213) = 7.22; p < 0.0001$). When all variables were entered only submissiveness was a significant predictor of depression, obtaining the largest beta weight and semi-partial correlation. However, because the semi-partial correlation is smaller than the beta weight the predictive power of submissiveness is due in part to the variance it shares with the other independent variables.

Table 4. Standard multiple regression analysis of the ELES and the s-EMBU as predictors of depression

	B	Beta	sr	sig
Rejection	0.331	0.106	0.063	ns
Emotional warmth	0.305	0.127	0.090	ns
Overprotection	0.071	0.031	0.027	ns
ELES threat	0.061	0.032	0.019	ns
ELES submissiveness	0.545	0.265	0.171	*
ELES (un)valued	0.466	0.126	0.088	ns
Intercept	-4.064	ns		

B, unstandardized regression coefficient; Beta, standardized regression coefficient; sr, semi-partial correlation; sig, significance.

* Significant at the 0.01 level; ns, non significant.

DISCUSSION

Current scales of recall of parenting typically focus on recall of parental behaviour. However, it is possible that what is also important for vulnerability is how one recalls personal feeling and behaviours from childhood. To date there are no self-report scales that measure such memories. Given our interest in power and subordination (Gilbert, 1992; Gilbert *et al.*, 2002) we sought to develop a short scale to measure feelings of early threat (e.g. parents as hostile dominant) and submissive behaviour. On the whole the measure worked reasonably well. The constructs it measures correlated as highly with depression and the s-EMBU. In a multiple regression, submissiveness turned out to be the single best predictor of depression, although it was highly related to the other recall measures. Although researchers are now well aware of the damage of abuse, there has been much less study on subtler forms of threat and subordinate behaviour in children. Children who are quick to defend themselves by behaving submissively may be especially vulnerable to psychological problems. Certainly our findings that recall of having to act in a submissive way was the main and only predictor of depression warrants further research.

It is also notable that recall of needing to behave submissively in childhood is significantly associated with current thoughts about others looking down on you (external shame, OAS). Indeed, both the rejection factor from the s-EMBU along with the ELES generally have higher correlations with depression, social comparison and external shame. As argued elsewhere (Gilbert, 1992), a lack of love may leave you unhappy and insecure but the stress of rejection and/or hostility and fear in your early life may further sensitize stress pathways and increase vulnerability to depression and other disorders.

We would point to some methodological issues. First, we chose to be very targeted in our items rather than generate large lists of items and then subject them to factor analysis. In other words, this was a theory-generated scale and suffers the associated strengths and weaknesses. We would therefore, point to various improvements that could be made. We had intended for our threat factor to tap recall of fear but inspection of the items generated in the factor analysis suggests it is more a recall of threat measure. Hence, it could have been better targeted to tap recall of feelings of fear. Also, the highest loading item on the threat factor

was 'In order to avoid getting hurt I used to try to avoid my parents'. This item could also be seen as reflecting a behavioural element, e.g. avoidance, and thus a form of submissive behaviour. We also note that item 2, 'I felt on edge because I was unsure if my parents might get angry with me' was intended as a threat or fear item and yet it loaded more heavily on submissiveness, though with a 0.36 loading on the threat factor. Hence, measures that can distinguish between feeling threatened and acting in a fearful submissive way require further development.

The submissiveness factor is interesting because while some behaviours (e.g. items 12 and 1) loaded highly on this factor (as might be expected, Allan & Gilbert, 1997), the experience of *feeling* subordinate (item 10, 'I often felt subordinate in my family') loaded only at 0.37. It would seem that one may recall submitting to others but not necessarily recall *feeling* subordinate in the family. Presumably this relates to the process by which people can behave one way e.g. as a subordinate, but not internalize that view and may in fact see themselves personally as being superior. Submissive behaviour is then a tactic of defence and not a personal judgement.

The reversed items all (unexpectedly) loaded separately on one factor. As suggested elsewhere (Gilbert, 1997; Gilbert and McGuire, 1998), being able to elicit approval, and feeling valued and important to others, can have a major impact on one's sense of self and ability to control interpersonal interactions in an affiliative way. It is possible therefore that these items are tapping this affiliative or safe dimension, related to warmth. These items correlated at 0.66 with s-EMBU warmth. Again, however, our items relate to how a person recalls themselves feeling, rather than what parents were doing.

The relationship between a parent's behaviour and the affective experiences of the child is complex and can reflect interactions between the parent's personality and the temperament of the child (Collins, Maccoby, Steinberg, Heatherington, & Bornstein, 2000). Some children may be disposed to feel frightened and/or submit more than others. We are also aware that there may be mood effects on recall, in that people who are depressed will recall more negative affect from early life. As we did not obtain enough reliable test-retest data to present here (in 21 students over 2 months it was 0.86) we cannot rule this out. However, recall of parental behaviour is less influenced by transient mood effects than was previously thought and such memories are in fact quite

stable (e.g. Brewin, Andrews, & Gotlib, 1993). In general we hope, however, to have indicated the value of measuring recall of personal emotional experiences and behaviour in childhood rather than only parental behaviour in childhood. We also hope to highlight the importance of noting the rank structure and style in the family, not just the attachment structure and style.

REFERENCES

- Allan, S., & Gilbert, P. (1995). A social comparison scale: Psychometric properties and relationship to psychopathology. *Personality and Individual Differences*, 19, 293-299.
- Allan, S., & Gilbert, P. (1997). Submissive behaviour and psychopathology. *British Journal of Clinical Psychology*, 36, 467-488.
- Allan, S., Gilbert, P., & Goss, K. (1944). An exploration of shame measures II: Psychopathology. *Personality and Individual Differences*, 17, 719-722.
- Arrindell, W.A., Sanavio, E., Aguilar, G., Sica, C., Hatzichristou, C., Eisemann, M., Recinos, L.A., Gaszner, P., Peter, M., Battagliese, G., Kallai, J., van der Ende, J. (1999). The development of a short form of the EMBU: Its appraisal with students in Greece, Guatemala, Hungary and Italy. *Personality and Individual Differences*, 27, 613-628.
- Bowlby, J. (1980). *Loss: Sadness and depression. Attachment and loss Vol. 3*. London: Hogarth Press.
- Brewin, C.R., Andrews, B., & Gotlib, I.H. (1993). Psychopathology and early experiences: A reappraisal of retrospective reports. *Psychological Bulletin*, 113, 82-98.
- Collins, W.A., Maccoby, E.E., Steinberg, L., Heatherington, E.M., & Bornstein, M.H. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist*, 55, 218-232.
- Feldman, L.A., & Gotlib, I.H. (1993). Social dysfunction. In C.G. Costello (Ed.), *Symptoms of depression* (pp. 85-112). New York: Wiley.
- Gerlsma, C., Arrindell, W.A., & Emmelkamp, P.M.G. (1991). Mood and memories of early parenting; connotation of two parental style questionnaires. *Personality and Individual Differences*, 12, 551-555.
- Gerlsma, C., Emmelkamp, P.M.G., & Arrindell, W.A. (1990). Anxiety, depression, and the perception of early parenting: A meta-analysis. *Clinical Psychology Review*, 10, 251-277.
- Gilbert, P. (1992). *Depression: The evolution of powerlessness*. Hove, UK: Guilford/Lawrence Erlbaum Associates.
- Gilbert, P. (1993). Defence and safety: Their function in social behaviour and psychopathology. *British Journal of Clinical Psychology*, 32, 131-154.
- Gilbert, P. (1997). The evolution of social attractiveness and its role in shame, humiliation, guilt and therapy. *British Journal of Medical Psychology*, 70, 113-147.
- Gilbert, P. (2000a). Varieties of submissive behaviour: evolution and role in depression. In L. Sloman, &

- P. Gilbert (Eds), *Subordination and defeat. An evolutionary approach to mood disorders* (pp. 3–46). Hillsdale, NJ: Lawrence Erlbaum.
- Gilbert, P. (2000b). The relationship of shame, social anxiety and depression: the role of the evaluation of social rank. *Clinical Psychology and Psychotherapy*, 7, 174–189.
- Gilbert, P. (2001). Evolution and social anxiety: The role of social competition and social hierarchies. *Social Anxiety: Psychiatric Clinics of North America*, 24, 723–751.
- Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological Medicine*, 28, 585–598.
- Gilbert, P., Allan, S., Brough, S., Melley, S., & Miles, J. (2002). Anhedonia and positive affect: relationship to social rank, defeat and entrapment. *Journal of Affective Disorders*, 71, 141–151.
- Gilbert, P., & McGuire, M. (1998). Shame, social roles and status: The psychobiological continuum from monkey to human. In P. Gilbert, & A. Andrews (Eds), *Shame: Interpersonal behavior, psychopathology and culture* (pp. 99–125). New York: Oxford University Press.
- Gotlib, I.H., & Hammen, C. (1992). *Psychological aspects of depression: Toward a cognitive-interpersonal integration*. New York: Wiley.
- Goss, K., Gilbert, P., & Allan, S. (1994). An exploration of shame measures I: The 'other as shamer scale'. *Personality and Individual Differences*, 17, 713–717.
- Grant, K.A., Shively, C.A., Nader, M.S., Ehrenkaufner, R.L., Line, S.W., Morton, T.E., Gage, H.D., & Mach, R.H. (1998). Effects of social status on striatal dopamine D₂ receptor binding characteristics in cynomolgus monkeys assessed with positron emission tomography. *Synapse*, 29, 80–83.
- Hart, J., Gunnar, M., & Cicchetti, D. (1996). Altered neuroendocrine activity in maltreated children related to symptoms of depression. *Development and Psychopathology*, 8, 201–214.
- Heim, C., Newport, J., Heit, S., Graham, Y.P., Wilcox, M., Bonsall, R., Miller, A.H., & Nemeroff, C.B. (2000). Pituitary–adrenal and autonomic responses to stress in women after sexual and physical abuse in childhood. *Journal of American Medical Association*, 284, 592–597.
- Mackinnon, A., Henderson, A.S., & Andrews, G. (1992). Parental 'affectionless control' as an antecedent to adult depression: A risk factor redefined. *Psychological Medicine*, 23, 135–141.
- Norman, G.R., & Streiner, D.L. (2000). *Biostatistics: The bare essentials*. BC, Canada: Decker Inc.
- Onstad, S., Skre, I., Torgersen, S., & Kringlen, E. (1993). Parental representations in twins discordant for schizophrenia. *Psychological Medicine*, 23, 335–340.
- Parker, G. (1983). *Parental overprotection: A risk factor in psychosocial development*. New York: Grune and Stratton.
- Patterson, G.R. (1988). Maternal rejection: Determinant or product for deviant child behavior: In W.W. Hartup, & Z. Rubin (Eds), *Relationships and development*. Hillsdale NJ: Lawrence Erlbaum.
- Perris, C. (1994). Linking the experience of dysfunctional parental rearing with manifest psychopathology: a theoretical framework. In C. Perris, W.A. Arrindeu, & M. Eisemann (Eds), *Parenting and psychopathology* (pp. 3–32). Chichester: John Wiley and Sons.
- Perris, C., Jacobsson, L., Lindstrom, H., von Knorring, L., & Perris, H. (1980). Development of a new inventory for assessing memories of parental rearing behaviour. *Acta Psychiatrica Scandinavica*, 61, 265–274.
- Perry, B.D., Pollard, R.A., Blakley, T.L., Baker, W.L., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation and 'use-dependent' development of the brain: How 'states' become 'traits'. *Infant Mental Health Journal*, 16, 271–291.
- Radloff, L.S. (1977). The CES-D Scale: a new self report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385–401.
- Raleigh, M.J., McGuire, M.T., Brammer, G.L., & Yuwiler, A. (1984). Social and environmental influences on blood serotonin concentrations in monkeys. *Archives of General Psychiatry*, 41, 405–410.
- Richter, J., Eisemann, M., & Richter, G. (1991). Perceived parental rearing and state versus trait aspects of adult depression. *Psychopathology*, 24, 25–30.
- Richter, J., Richter, G., Eisemann, M., Seering, B., & Bartsch, M. (1994). Depression, perceived parental rearing, and self-acceptance. *European Psychiatry*, 10, 290–296.
- Rojo-Moreno, L., Livianos-Aldana, L., Cervera-Martinez, G., & Dominguez-Carabantes, J.A. (1999). Rearing style and depressive disorder in adulthood: a controlled study in a Spanish clinical sample. *Social Psychiatry and Psychiatric Epidemiology*, 34, 548–554.
- Rutter, M., Dunn, J., Plomin, R., Simonoff, E., Pickles, A., Maughan, B., Ormel, J., Meyer, J., & Eaves, L. (1997). Integrating Nature and Nurture: Implications of person–environment correlations and interactions for developmental psychopathology. *Development and Psychopathology*, 9, 335–364.
- Sapolsky, R.M. (1989). Hypercortisolism among socially subordinate wild baboons originates at the CNS level. *Archives of General Psychiatry*, 46, 1047–1051.
- Sapolsky R.M. (1994). *Why zebras don't get ulcer's: An updated guide to stress, stress-related disease, and coping*. New York: Freeman.
- Schore, A. (2001). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, 22, 201–269.
- Shively, C.A. (1998). Social subordination stress, behaviour, and central monoaminergic function in female cynomolgus monkeys. *Biological Psychiatry*, 44, 882–891.
- Sloman, L., & Atkinson, L. (2000). Social competition and attachment. In L. Sloman, & P. Gilbert (Eds), *Subordination and defeat. An evolutionary approach to mood disorders* (pp. 3–46). Hillsdale, NJ: Lawrence Erlbaum.
- Teicher, M.H. (2002). Scars that won't heal: The neurobiology of the abused child. *Scientific American*, 286, 54–61.
- Tiggeman, M., Winefield, H.R., Goldney, R.D., & Winefield, A.H. (1992). Attributional style and parental rearing as predictors of psychological distress. *Personality and Individual Differences*, 13, 835–841.