



during the months and years after the death is overwhelming and coming to terms with these feelings is of great importance. Therefore we consider the regulation of emotion the most challenging coping task of bereaved parents. An unsuccessful regulation impedes the adaptation process; too much regulation is unhealthy (Pennebaker, 1995) and may result in psychological problems. Therefore, this investigation focuses on the question of which kind of emotional regulation is adaptive or maladaptive in the bereavement process. Specifically, we want to investigate whether forms of expressing emotions, avoiding them, or minimizing emotional impact by way of cognitive strategies differ between parents who lost a child and a comparison group. We assume that a well-developed emotion regulation such as a capacity to tolerate acute stressors or feelings may be of help in the process of adaptation.

Four forms of regulating emotions were assessed with the Emotion Regulation Questionnaire (EMOREG; Znoj, Sundin, Maercker, & Horowitz, 2000). This instrument was developed according to the information theory of stress (Horowitz, 1986). According to this view, a stressful life event implies new information that is hard to integrate (see also Janoff-Bulman, 1989). To protect oneself, consistency safeguards (Znoj & Grawe, 2000) are activated. Such safeguards may take various forms, such as ignoring facts, behavioral retreat, or cognitive distortions.

As many researchers have stated, the loss of a child can be a devastating experience and cause long-term distress (Rubin, 1993). Cleiren, Diekstra, Kerkhof, and van der Wal (1994) found that bereaved mothers who had lost a child were the most severely affected group among those who had lost a close person (see also Middleton, Raphael, Burnett, & Martinek, 1998). In a long-term study, Lehman, Wortman, and Williams (1987) found that persons who had lost a child or spouse in an accident had not resolved their grief years after the event. The loss of a child may cause symptoms similar to posttraumatic stress (Murphy et al., 1999).

Following the death of a child, parents encounter large discrepancies between expected perceptions such as seeing their child playing in a room and the experience that the room is empty and nobody is calling. The loss of expected perceptions may lead to emotional imbalance. Following Kring and Bachorowski (1999), disturbances within the emotional system can result in a disrupting communication between the various subsystems involved. The fine-tuned flow of information between these subsystems might escape internal control and result in

an unregulated flow of information through important gateways and thereby lead to psychopathologies (Kring & Bachorowski, 1999).

In the adaptation process following the death of a loved child, one has to come to terms with this emotional turmoil. Consistency safeguards—the postulated control processes—may help to reduce the immediate threat caused by this discrepancy (Horowitz, 1986; Horowitz, Znoj, & Stinson, 1996; Znoj & Grawe, 2000).

We see consistency safeguards as a range of strategies for dealing with emotional impacts. In contrast to the definition of emotion-focused coping by Lazarus and coworkers (e.g., Folkman & Lazarus, 1988), we focus on behavior and cognitive styles that stabilize the self by minimizing discrepant perceptions. Such strategies help to reduce or transform the emotional response. For instance, avoiding persons or situations may stabilize emotional balance. Consistency safeguards represent different cognitive styles and behaviors for coping with bereavement and may therefore be important for an empirically informed grief therapy (Neimeyer, 2000).

Following our own suggestions (Horowitz et al., 1996), we distinguish more adaptive and more maladaptive strategies to regulate unwanted emotional states. Although avoiding a specific situation may alleviate emotional stress for a short period of time (e.g., confronting parents of other children), the long-term effects of such a behavior could lead to social deprivation and an emotional state of alienation. The terms *adaptive* and *maladaptive* here refer to long-term adjustment (Zeidner & Saklovske, 1996).

The process of grief may lead to a better understanding of the world and its complexities (Linville, 1987). A successful process of integration is likely to trigger more adaptive ways of emotion regulation because one has had to deal with the discrepancies and emotional turmoil described above. Therefore, consistency safeguards may be developed through the experience of loss. In our attempt to define adaptive ways of emotion regulation, we therefore focus on outcome. An example of such an outcome is a high capacity to tolerate adverse feelings or the ability to relax even in stressful encounters. Following Richards and Gross (2000), a well-developed capacity of emotion regulation can be seen as a form of “emotional intelligence” (Salovey & Mayer, 1990). Thus, adaptive emotion regulation is “effortless” in the sense that one doesn’t have to make a great effort (anymore) to overcome feelings of distress. The regulation is often involuntary and happens automatically.

According to the assumptions of consistency-safeguard theory, we expected that the more maladaptive ways of emotion regulation would be related to poorer personal resources, poorer physical health and to more depression and anxiety in the bereaved parents.

Following the coping model of Moos and Schaefer (1986), we anticipated that bereaved parents who reported high levels of personal resources (Antonovsky, 1987) would differ in their use of emotion regulation strategies, namely that they would report more adaptive strategies compared with parents who scored low on this measure. Because in our culture the emotional bond of mothers to their young children is often stronger than the bond between fathers and children, we expected gender differences in coping with the loss of a child (Cook, 1988; Cook & Wimberley, 1983).

According to our general hypothesis, we expected that persons with adaptive and well-developed strategies to deal with emotional states would show lower levels of posttraumatic signs and symptoms. We anticipated that the levels of posttraumatic reactions of the bereaved parents such as intrusions, hyperarousal and, as a consequence, trauma-related avoidance (Horowitz, Field, & Classen, 1993) would be comparable to those of other groups of traumatized persons. In accordance with other investigations (Murphy et al., 1999), the psychological impact of the loss was expected to decrease with time but remain at a high level even years after the event.

The various forms of emotion regulation were expected to be associated with psychological and physical health. The expression of emotions and a well-developed capacity for emotion regulation were expected to be positively associated with physical health and negatively with depression.

We presumed that emotion regulation was an important part of adaptation following loss. According to several investigators of major life-events, many victims develop a better sense of themselves (Park, Cohen, & Murch, 1997; Tedeschi & Calhoun, 1995). Following the consistency-safeguard hypothesis, we assumed that persons who had experienced such a loss would report more adaptive ways of dealing with difficult emotions than other parents despite suffering more from psychological problems. Calhoun and coworkers (Calhoun, Cann, Tedeschi, & McMillan, 2000) reported a positive correlation between rumination-like intrusions and personal growth following a traumatic event. This reflects the complexity involved in bereavement: Bereaved people often

show poor outcome and yet they are expected to have more adaptive strategies in dealing with upsetting emotions.

## Method

### *Participants*

In this investigation we focused on bereaved parents in the German-speaking part of Switzerland. They were recruited in two phases: The first group of participants was contacted through self-help groups ("Regenbogen Schweiz"). Of 196 distributed questionnaires, 87 were completed and sent back to us (44% response rate). The second group of participants was contacted by a major hospital unit (Kinderklinik der Universitäts-Poliklinik Bern, Insel) and asked to participate. Of 400 requests sent out, 89 responded and completed the questionnaire at least partly (22% response rate). The overall response rate of approximately 30% compares well to other questionnaire studies in Switzerland considering the fact that the parents were contacted only once and that it was not possible to send reminders because of total anonymity. A comparison between the two bereaved samples showed no differences in demographic variables.

A control group of the general population received a subset of the questionnaires sent to the bereaved parents. Of the 313 participants, many were single and had no children and the general age was younger than in the bereaved sample. Therefore, we excluded singles and young people until the group matched the bereaved sample demographically. Still, in terms of education participants in the control group were more likely to have a university-level education. The resulting sample size was  $N = 124$ . In both samples the female participants were over-represented (see Table 1).

Although the second group had not been chosen with the criterion of major life-events, many of them reported losses. Seventy-five of the original sample indicated that they had lost at least one loved one during their lives. Concerning the age or other demographic variables of the participants, there were no statistical differences between participants with or without earlier losses.

The participants in both samples represent a well-educated, economically middle-class part of the Swiss population.

**TABLE 1** Demographic Characteristics of the Two Samples. The Bereaved Group and the Control Group

Gender	Bereaved parents (117 women, 59 men)	Matched control sample (72 women, 52 men)
Age (years) <i>M(SD)</i>	42.35 (10.45)	43.74 (7.47)
Time since child loss (years) <i>M(SD)</i>	5.10 (5.39)	
Education level		
Basic school	12 (7.1%)	5 (4.0%)
Formal job training	92 (54.4%)	34 (27.4%)
College level (at least high school)	19 (11.2%)	16 (12.9%)
Professional degree (University)	46 (27.3%)	69 (55.6%)
Job situation		
No work	13 (7.5%)	2 (1.6%)
Employed	99 (57.2%)	69 (55.6%)
Self-employed	20 (11.6%)	21 (16.9%)
Household/School	41 (23.7%)	26 (20.9%)

Note. Because of missing cases the numbers vary.

Characteristics of the childrens' deaths as reported in the bereaved sample are summarized in Table 2.

### Instruments

#### Regulation of Emotion

In EMOREG we focus on different strategies and outcomes when dealing with emotion. Mainly we explored the function of a well-functioning, automatic (effortless) emotion regulation. Examples of this type of emotion regulation are being able to maintain a clear sense of priorities even when distressed or being able to rest even in great despair (see also Horowitz et al., 1996; Horowitz & Znoj, 1999). In Table 7 the items and the scales of the EMOREG are reported in detail.

In addition to such adaptive types of emotion regulation, we included two scales representing maladaptive ways of dealing with emotion. Examples of such outcomes are avoiding thoughts or avoiding people or situations, seeking distraction, or being overly active. The second maladaptive scale consists mainly of distortions of awareness, like feeling

**TABLE 2** Cause of Death and Age of the Bereaved Parents' Children

Cause of death	Age of child at death							All
	Up to 1	2-6	7-11	12-16	17-21	22-26	> 27	
Sudden infant death	10							10
Stillborn	17							17
Early birth	7							7
Chronic disease	8	17	5	5	1	1	3	40
Acute disease	5	9	3	2	4	1	1	25
Accident	1	3	3	3	5	3	4	22
Suicide				1	3	1	1	6
Drugs				1				1
Total	48	29	11	12	13	6	9	128

Note.  $N = 128$ . For 10 children the cause of death was not indicated. Some parents referred to the same child.

misunderstood or misperceiving information or being overly reactive. An expression of emotion scale was also included. Examples are conveying strong emotions to close persons or talking expressively about feelings. The internal consistency of this self-report was satisfying for adaptive and well-organized types of emotion regulation ( $\alpha = .80$ ) and lower for the two maladaptive scales ( $\alpha = .71$ ). The additional scale "expression of emotion" consisted of three items; hence internal consistency was rather low ( $\alpha = .60$ ). The mean scores and the inter-correlation of the scales of emotion regulation in both samples are depicted in Table 3.

In a former investigation with a normative sample ( $N = 816$ ), the adaptive emotion regulation scale correlated positively ( $r = .38, p < .01$ ) with satisfaction with life and negatively with feeling depressed ( $r = -.27, p < .01$ ) as assessed by the Bernese Well-Being Scale (BWF-E; Grob, 1995). The maladaptive scales were negatively associated with satisfaction (avoidance  $r = -.31, p < .01$ ; distortion  $r = -.28, p < .01$ ) and positively with feeling depressed (avoidance  $r = .29, p < .01$ ; distortion  $r = .24, p < .01$ ). Expression of emotion was positively associated with satisfaction ( $r = .27, p < .01$ ) and negatively with feeling depressed ( $r = -.25, p < .01$ ).

In this article, we will use the term *adaptive regulation* for the well-organized outcome of emotion regulation. Expressing one's feeling to others can be seen as an adaptive regulation according to the suggestions of Pennebaker (1995). However, we will use the term *adaptive emotion*

**TABLE 3** Intercorrelations of the Four Scales of Emotion Regulation in Bereaved Parents and Their Matched Peers

Scale	1	2	3	4
<b>Bereaved parents</b>				
1. Expression of emotion	(.60)			
2. Effortless control	.33**	(.80)		
3. Avoidance	-.19*	-.17*	(.71)	
4. Distortion	.14	-.15*	.48**	(.69)
<i>M(SD)</i>	4.37 (1.10)	4.02 (.84)*	2.96 (1.02)	3.10 (1.06)
<b>Matched controls</b>				
1. Expression of emotion	(.57)			
2. Effortless control	.30**	(.80)		
3. Avoidance	-.11	-.08	(.65)	
4. Distortion	-.03	-.22*	.39**	(.65)
<i>M(SD)</i>	4.33 (1.02)	3.78 (.77)*	2.81 (.85)	3.23 (.91)

Note. The internal consistencies (Cronbach alpha) are indicated in brackets.

\*\* $p < .01$ . \* $p < .05$ .

regulation only for the first scale. Avoidance and distortion are seen as maladaptive outcomes of emotion regulation because here we see forced (and sometimes failing) attempts of regulating one's emotional states.

### Physical Health and Psychological Problems

In both samples we asked the following questions concerning health: "Do you generally feel in good physical health?", "Do you have a chronic condition?", and "Are you currently seeing a doctor because of a present disease?" As these questions have a dichotomous (yes or no) format, an index was formed with a minimum value of 0 and maximum value of 3, the latter indicating bad health. However, for most analyses we will refer to the first question concerning the general feeling of being healthy.

### Depression

To measure depression in the bereaved group, we used the Beck Depression Inventory (BDI; Beck, 1978) in a German translation (Hautzinger, 1995). We chose the BDI because of its clinical relevance and its frequent use in clinical research. As suggested by Elliott and Frank (1996), we used the BDI total score as an indicator for distress and not for diagnosis. In our study, the BDI had an internal consistency of

$\alpha = .88$  (Cronbach's alpha). In the control group a different measure was used, the depression subscale of the BWF-E (Grob, 1995). Therefore, the scores were standardized ( $z$ -transformation) for each group to be able to control for depression statistically where necessary.

### Posttraumatic Stress

To measure the psychological impact of the loss, the Impact of Event Scale (IES) (Horowitz, Wilner, & Alvarez, 1979) was used in its revised form (Weiss & Marmar, 1996; German: Maercker & Schützwohl, 1998). The IES is a self-report measure of subjective stress related to a specific stressful event. The instrument consists of three subscales: Intrusion, Avoidance, and Hyper-Arousal. The scales have been shown to be reliable and valid in a number of studies involving a variety of populations (Horowitz et al., 1993). In this study, we also used the total score of the revised IES (IES-R; coefficient  $\alpha = .92$ ).

In the bereaved parents group, the distressing event was the death of the child; in the control group, we asked for the most serious life-event in the last few years to anchor the IES-R.

### Personal Coping Resources

To measure personal resources, we used the "Sense of Coherence" (SOC; Antonovsky, 1993). The SOC is a salutogenetic construct to predict health. It consists of the three subscales: Comprehensibility, Manageability, and Meaningfulness. *Comprehensibility* refers to the ability to understand facts and circumstances of an event. *Manageability* refers to the degree of personal control in difficult situations, and *meaningfulness* refers to the ability to make or find sense. Thus, the SOC captures a general orientation in life and personal resources to cope with stressful life-events. Antonovsky (1987) stated that persons who score high on SOC have a higher capacity to cope with adverse life-events and maintain health than persons who see the world as unpredictable, unmanageable, and whose sense of a meaningful world is challenged. The three scales are highly correlated; in our study we therefore used only the total score. Internal consistency proved to be satisfactory in our combined sample ( $\alpha = .89$ ).

### Analysis

The analyses of the data are based mainly on correlative methods. To distinguish between different samples we calculated analyses of

variance, multivariate analyses of variance (MANOVAs) and Student *t* tests. We also performed multivariate analyses of covariances controlling for years since loss and depression. In the case of nominally or ordinal ranked variables, we used non-parametric methods.

## Results

Consistent with our assumptions, a minority of the bereaved parents indicated being physically unhealthy and highly distressed. The participants of the self-help group reported higher levels of distress, namely a tendency to be more depressed,  $t(152) = 1.67, p < .10$ , and to have more stress-related intrusions,  $t(165) = 1.80, p < .10$ . There was no difference in terms of physical health between the two bereaved samples. More than 46% of all bereaved mothers (compared with 28% of the bereaved fathers) reported to have suffered from deterioration in physical health following the death of their child. At the time of the investigation, 20% of the bereaved parents—women more than men—reported health problems  $F(1,164) = 6.35, p < .05$ .

In the control sample of the normal population there was no gender difference in physical health,  $F(1,121) = .50, p > .48$ , and the general health status in the control group was significantly better,  $U(289) = 9191, p < .01$ .

Thirty-seven percent of all bereaved parents had clinically elevated BDI-scores (23% between 11 and 17; 14% scored above 17). Again, the bereaved mothers reported higher depression scores than the bereaved fathers  $t(158) = 3.54, p < .01$  with a mean score of  $M = 11.14$  ( $SD = 8.53$ ) compared with  $M = 7.38$  ( $SD = 5.24$ ). The depression scores were moderately correlated with age ( $r_p = .29, p < .01$ ) when controlled for time since loss. Time since loss was negatively correlated with depression in bereaved mothers when controlled for age ( $r_p = -.29, p < .01$ ) but not in bereaved fathers ( $p > .90$ ).

The bereaved mothers and fathers had increased signs and symptoms of posttraumatic stress reactions. As shown in Table 4, posttraumatic stress as measured with the IES-R indicated higher levels of intrusion and hyperarousal in bereaved parents compared with the normal population. In the control group, we found a minority who also scored relatively high on the IES-R. There was no difference in the level of IES-R avoidance between bereaved parents and the matched controls.

**TABLE 4** Means, Standard Deviations, and *t* Values of the Impact of Event Subscales (IES) Between the Bereaved Parents ( $n = 172$ ) and the Matched Control Group ( $n = 116$ )

IES subscales	Bereaved parents		Matched controls		<i>df</i>	<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Intrusion	17.24	8.65	11.70	8.69	286	5.33**
Hyperarousal	9.60	8.67	7.76	7.60	286	1.86 <sup>+</sup>
Avoidance	7.61	6.49	9.16	8.68	285 <sup>a</sup>	1.74
IES total score	34.41	20.69	28.62	20.70	286	2.33*

\*\* $p < .01$ ; \* $p < .05$ , <sup>+</sup> $p < .10$

<sup>a</sup>Mann-Whitney ( $U = 9417.5, p = .47$ ).

Compared with other traumatized groups, bereaved parents reported similar levels of intrusion and hyperarousal but relatively low scores on stress-related avoidance (Maercker & Schützwohl, 1998). Again, there was a gender difference: Bereaved mothers were more affected by the loss of their child than bereaved fathers  $t(170) = 2.84, p < .01$ . The age of parents was positively correlated with posttraumatic symptoms ( $r = .31, p < .01$ ), independent of gender. However, in the course of adaptation, stress symptoms decreased. Table 5 shows the results of three time-cohorts (0–12 months post loss; 1 to 3 years post loss; 3 and more years post loss). The decrease in posttraumatic intrusions was statistically significant  $F = 7.41, p < .01$ ; for hyperarousal and avoidance there was no time-cohort effect.

To investigate the question whether adaptation following the death of child is related to how feelings are dealt with, we followed different strate-

**TABLE 5** Impact of Events Scale Scores in Different Time Cohorts for the Bereaved Parents

Time cohorts	Intrusion		Hyperarousal		Avoidance	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
0 to 1 year ( $n = 37$ )	20.0	6.9	11.4	8.3	6.8	5.7
Up to 3 years ( $n = 61$ )	19.2	8.4	10.2	9.2	7.9	6.4
3 + years ( $n = 72$ )	14.6	8.7	8.2	7.9	7.7	6.8

gies. The first strategy involved the comparison between people who had lost a child with an unselected sample of approximately the same age and status. Secondly, we correlated the four scales of the EMOREG with indicators of physical and emotional health and the SOC as a disposition to adapt well following a serious life-event. In a third step, we examined whether time since loss influenced the way emotions were regulated.

The strategies of emotion regulation were moderately but consistently related to physical health and emotional distress. As shown in Table 6, correlations (partial correlations were used when gender or age proved to be of relevance for a specific variable) indicated that effortless emotion regulation related negatively to depression and poor physical health. In contrast, avoidance as a forced strategy of dealing with emotions or distortion as a cognitive procedure to dampen the emotional impact proved to be associated with lower scores on physical health and higher scores on depression and posttraumatic stress symptoms. For expression and disclosure of emotions to others the results were less clear: In the bereaved sample, intrusions as a sign of distress were positively associated with disclosing emotional feelings. In the control group there was a weak but statistically significant negative correlation with feeling depressed. In both samples, expressing emotions correlated positively with the adaptive regulation of emotion.

The SOC as a disposition for good adaptation following a stressful life-event was positively correlated with effortless emotion regulation ( $r = .36, p < .01$ ), and negatively with the avoidance of emotions ( $r = -.45, p < .01$ ) and distortion ( $r = -.54, p < .01$ ) in the bereaved sample. This was also true for the control group with slightly different numbers ( $r = .43, p < .01$ ;  $r = -.30, p < .01$ ;  $r = -.38, p < .01$ ).

Although bereaved parents suffered from physical health problems and emotional distress, we assumed that during the course of grief people would learn to come to terms with desperation and subsequent emotional turmoil. Following this line of thought, bereaved parents were presumed to use different strategies to control upsetting emotions than a group of comparable people who had not experienced such a cruel life-event. In our investigation we found supporting evidence: The bereaved parents reported coming to terms better with upsetting feelings than the participants of the control group but they also reported more avoidance strategies in dealing with emotions. When controlling for years since loss (following the suggestions of an anonymous reviewer, we assigned the mean time since loss in the control group), the multivari-

TABLE 6 Correlations Corrected for Gender and Age (Partial Correlations) between the Scales of Emotion Regulation, Impact of Event Scales (IES), Psychological and Physical Health, and Depression in Both Samples

Scale	1	2	3	4	5	6	7	8	9
1. Expression	—	.29**	-.07	.01	.12 <sup>b</sup>	.05 <sup>b</sup>	-.03 <sup>b</sup>	.01 <sup>b</sup>	-.26** <sup>b</sup>
2. Effortless Control	.33**	—	-.08	-.22*	.04 <sup>a</sup>	-.05 <sup>a</sup>	.05 <sup>a</sup>	.03 <sup>a</sup>	-.36** <sup>a</sup>
3. Avoidance	-.19*	-.17*	—	.39**	.08 <sup>a</sup>	.09 <sup>a</sup>	.38** <sup>a</sup>	-.10 <sup>a</sup>	.19** <sup>a</sup>
4. Distortion	.14	-.15*	.48**	—	.16 <sup>a</sup>	.17 <sup>a</sup>	.24** <sup>a</sup>	-.12 <sup>a</sup>	.21 <sup>a</sup>
5. IES-Intrusion	.16**	.07 <sup>a</sup>	.24** <sup>a</sup>	.29** <sup>a</sup>	—	.76**	.42**	-.02	-.06 <sup>a</sup>
6. IES-Hyperarousal	.13 <sup>a</sup>	.09 <sup>a</sup>	.35** <sup>a</sup>	.39** <sup>a</sup>	.79**	—	.44**	.01	.11 <sup>a</sup>
7. IES-Avoidance	-.01 <sup>a</sup>	-.03 <sup>a</sup>	.47** <sup>a</sup>	.34** <sup>a</sup>	.48**	.55**	—	.06	-.04 <sup>a</sup>
8. GeneralHealth	-.03 <sup>a</sup>	.16** <sup>a</sup>	-.22** <sup>a</sup>	-.29** <sup>a</sup>	-.22** <sup>b</sup>	-.37** <sup>b</sup>	-.19** <sup>b</sup>	—	-.11 <sup>a</sup>
9. Depression	-.07 <sup>a</sup>	-.19** <sup>a</sup>	.41** <sup>a</sup>	.44** <sup>a</sup>	.53** <sup>b</sup>	.57** <sup>b</sup>	.31** <sup>b</sup>	-.49** <sup>b</sup>	—

Note. The values of the bereaved parents ( $N = 176$ ) are in the lower diagonal part of the table, above are the values of the matched controls ( $N = 124$ ).

\*\* $p < .01$ ; \* $p < .05$ ;

<sup>a</sup> = partial correlation corrected for gender, <sup>b</sup> = partial correlation corrected for age and gender.



**TABLE 7** Items and Scales of the Emotion Regulation Questionnaire (EMOREG)

The phrases below give a range of statements that people have used to describe how they handle *emotionally overwhelming* situations. Please judge each item as to whether it does or does not apply to your real behavior (not to what you think is ideal). Circle the number of the response which best describes how much you think each statement is true of you most of the time. (Scaling: *very untrue of me* = 1 to *very true of me* = 6.)

I am a person who . . .

- 1) ..tries out new ways of thinking and acting
- 2) ..avoids stressful thoughts or the anticipation of threatening events
- 3) ..ends relationships in order to avoid feelings of humiliation
- 4) ..expresses my strong feelings clearly
- 5) ..weighs arguments carefully when a decision has to be made
- 6) ..talks in depth about emotionally important topics
- 7) ..overreacts emotionally
- 8) ..participates in a group at some times and takes care of personal needs at other times
- 9) ..has strengths and weaknesses and feels competent in most situations
- 10) ..can let go of a focus of attention or stop dwelling on something when necessary
- 11) ..brings up very stressful topics when talking with a close friend
- 12) ..gets fed up and leaves when angered
- 13) ..uses distractions to avoid painful memories
- 14) ..misperceives or misunderstands what others mean
- 15) ..can relax but can also make an effort to achieve something
- 16) ..has relationships that are usually equal and mutual
- 17) ..jumbles talk about past, present, and future
- 18) ..works hard but also gets enough rest
- 19) ..moves and acts restlessly as a way of avoiding unpleasant thoughts and feelings
- 20) ..monitors myself and/or others constantly
- 21) ..feels misunderstood and therefore blames others
- 22) ..avoids social tensions by keeping myself out of certain situations
- 23) ..has trust in myself
- 24) ..makes careful decisions about complex situations

*Note.* Adaptive Regulation of Emotion: 1, 5, 8, 9, 10, 15, 16, 18, 23, 24; Expression: 4, 6, 11; Avoidance (maladaptive): 2, 3, 12, 13, 19, 22; and Distortion (maladaptive): 7, 14, 17, 20, 21.

ate test yielded a statistically significant group effect,  $H(4,287) = 2.97, p < .05$ , for the four emotion regulation scales. Pairwise comparisons showed that the bereaved parents had higher scores on adaptive emotion regulation ( $M = 4.02, SD = .06$ ) than the matched control group ( $M = 3.77, SD = .07$ ). The effect was statistically significant,  $F(1,290) = 6.46, p < .05$ . Controlling for education level (the participants of the matched control group had a higher proportion of university level

education) did not affect the result. The difference on the emotion regulation avoidance scale could be explained by years since loss,  $F(1, 290) = 4.82, p < .05$ . The regression weight of years since loss on avoidant emotion regulation was  $\beta = .13 (p < .05)$ .

Further support was gathered in the larger control group. Because a minority reported human losses of some kind (e.g., spousal bereavement or loss of parents), we performed a MANOVA for emotion regulation. The result corroborated the result from the first comparison: People who had experienced human loss of any kind ( $n = 75$ ) compared with people who did not report such events ( $n = 225$ ) reported higher levels of well-functioning emotion regulation  $F(1,298) = 4.81, p < .05$ . Their mean score of "effortless emotion regulation" was ( $M = 3.89, SD = .09$ ) compared with the mean score of the people who did not report earlier losses ( $M = 3.66, SD = .05$ ). However, there was no indication of differences in avoiding emotional situations or in other strategies of emotion regulation. The difference in adaptive regulation of emotion remained significant when controlling for age,  $F(1,297) = 3.86, p < .05$ .

## Discussion

In this investigation we tried to explore the role of emotion regulation for adaptation following human loss, especially following the death of one's child. The most important result might be our finding that during the course of grief a person learns to cope better with difficult and hard-to-endure emotional states and feelings. An indication for such a development was the result of bereaved parents reporting higher scores on effortless emotion regulation than their age- and status-matched peers of a non-bereaved sample. Further support for this finding was revealed when we separated people with and without losses in the control group.

Again, people who had endured human losses reported having fewer difficulties in dealing with emotionally upsetting situations. Although the effect size was small, our finding supports the interpretation of Calhoun et al. (2000) that personal growth and a better sense of functioning can be acquired through adverse life-events.

The correlations in Table 6 indicate a moderate positive correlation between the avoidance subscale of the IES and avoidant emotion regulation ( $r = .45, p < .01$  in the bereaved parents,  $r = .40, p < .01$  in the matched controls). Bereaved parents had comparably low scores on IES



of Avoidance; in contrast, the Intrusion subscale was clearly highly elevated in this group.

Calhoun et al. (2000) have suggested that personal growth can be positively associated with symptoms. The ability to cope better with upsetting feelings may be directly related to the intensity of emotional feelings. In a further investigation we will take a closer look at the relationship between intensity of feelings and attempts to control and regulate emotions.

It must be noted that in our study the bereaved parents reported high levels of intrusion compared to a control group but had similar scores in avoidance as measured by the IES. It may be premature to conclude that posttraumatic stress and severe grief reactions are distinguishable by this discrepancy. Here, we clearly need more studies to understand grief as a normal reaction (Shuchter & Zisook, 1993; Stroebe et al. 2000) versus a pathogenic reaction such as "pathological grief" (Horowitz, Siegel, Holen, & Bonanno, 1997).

In this investigation, we also explored the role of expressing emotions as an approach to feel better or types of "drastic" emotion regulation, like avoidance or cognitive distortion. These latter attempts were related to psychological problems and low physical health. In contrast to suggestions from the literature (e.g., Pennebaker, 1990, 1995), we found no evidence that confiding in others was related to better health or emotional well-being. However, it seemed the more traumatized by the loss, the more the bereaved participants expressed their feelings to close persons. The results on the adaptive value of expressing one's emotions are therefore inconclusive. As Bonanno and coworkers (Bonanno, Keltner, Holen, & Horowitz, 1995; Bonanno, Znoj, Siddique, & Horowitz, 1999) stated, in spousal bereavement an avoidant style of coping with emotions might not be as adverse as the literature has suggested (Raphael, 1977; Raphael, Middleton, Martinek, & Misso, 1993; Raphael & Nunn, 1988).

As this investigation was limited to a cross-sectional, self-report investigation of a self-selected group of bereaved parents, we have no empirical data to illuminate a causal relationship between problematic types of emotion regulation and the development of psychological problems. However, as Znoj & Grawe (2000) have stated, cognitive strategies of emotion regulation can be seen as safeguards against detrimental states of mind and serve as a means to protect against inconsistencies between expected (and represented) and actual perception. Horowitz and Znoj (1999; Horowitz et al., 1996) see the control of emotional states as mandatory to adapting to a traumatic event such as a loss. Following this

view, a traumatic event causes distress and incoherence because of the mismatch between expected and actual information. In our study, the bereaved parents reported lower scores on SOC than the matched controls. As a consequence, the emotional system is "overloaded" and might be more prone to malfunctioning.

The major task in the adaptation process is to deal with the impacted emotional system—a process that might result in chaotic feelings or no feelings at all (Lindemann, 1944). It seems that trying to avoid loss-related information and memories is a relatively safe way to protect oneself from such feelings. However, this is not always feasible. In addition, avoidance in itself might be related to the development of symptoms, as the current view of posttraumatic stress symptoms suggests. Here, avoidance is part of the definition of posttraumatic stress. As Hayes, Wilson, Gifford, Follette, and Strohsal (1996) stated, experiential avoidance is strongly linked to the development of psychological symptoms. A possible explanation was suggested by the work of Wegner, Ebner, and Zanakos (1993). These authors linked forceful attempts to information processing capacities. When under a heavy cognitive load, persons failed to successfully control their emotions—the result was called the *ironic mood effect*. This mechanism may explain the vicious cycle in dealing with painful emotions eventually leading to psychological symptoms. The more effort one has to put into avoiding painful emotional states, the more one is at risk of developing serious health problems. Cognitive distortion as a drastic—although most likely not conscious—effort may be the first sign of severe symptomatology. Beck (1967) and other authors (e.g., Ellis, 1962) see depression as maintained by "irrational" cognitions. We would like to suggest that cognitions are at some point used to come to terms with adverse emotional states or information and that such cognitions are the result of failed attempts at emotional regulation. In this sense, a major loss is a serious risk for the development of psychological problems. On the other hand, as we have attempted to demonstrate, a major loss may also lead to an improvement of emotion regulation.

The learning of such an adaptational process typically occurs during childhood and early adulthood. Loss of a child, however, occurs at a time in life when the capacity to learn emotionally is already diminished. The extreme and permanent grief reaction of bereaved parents may be partly due to this biographical constellation. The unexpected and non-normative nature—at least in western societies—of child loss demands a strong and often conscious individual coping effort.

As hinted at by several authors (Calhoun et al., 2000; Moos & Schaefer, 1993; Park et al., 1997), serious life-events can lead to personal growth—the sense that one has become a better person through coping with adversity. Our results suggest that such a sense of having grown into a better human being might be accompanied by more adaptive emotion regulation. Considering the importance of these findings for the understanding of the adaptation process following a traumatic event, we urgently need to explore the role of emotion regulation further. What we need are longitudinal designs in naturalistic environments, experimental designs, and observational methods in addition to self-reports to illuminate the proposed link between well-functioning emotion regulation and psychological well-being.

There remain many open questions in the field of bereavement research. The most intriguing question is whether professional help could lead to better adaptation. As Bonanno and Kaltman (1999) stated, empirical support for grief work breaking bonds toward the deceased is scarce. Reviews appearing in the 1980s noted a surprising absence of empirical support for this view, thus leaving the bereavement field without guidance. In our investigation, participants of bereavement self-help groups appeared to be more distressed. Undoubtedly, grief and bereavement are culturally bound and therapeutic help must consider cultural and individual styles of grief (Stroebe, Gergen, Gergen, & Stroebe, 1992). Still, therapeutic help may be important, especially for those who suffer from depression or other psychological disturbances. In our view, problematic coping styles and maladaptive measures to control the emotional impact are important factors in the treatment of complicated grief.

Sociocultural factors are equally important. In contrast to modern western societies, in the third world the death of children occurs quite often. Here, larger families and social groups may help to integrate the loss. Studies between different cultures and socioeconomic constraints could highlight and clarify the role of social support and therapeutic measures for bereaved parents.

## References

- Antonovsky, A. (1987). *Unraveling the mystery of health*. San Francisco: Jossey-Bass.  
 Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science & Medicine*, 36, 725–733.

- Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row.  
 Beck, A. T. (1978). *Depression Inventory*. Philadelphia: Center for Cognitive Therapy.  
 Bonanno, G. A., & Kaltman, S. (1999). Toward an integrative perspective on bereavement. *Psychological Bulletin*, 125, 760–776.  
 Bonanno, G. A., Keltner, D., Holen, A., & Horowitz, M. J. (1995). When avoiding unpleasant emotions might not be such a bad thing: Verbal-autonomic response dissociation and midlife conjugal bereavement. *Journal of Personality and Social Psychology*, 69, 975–990.  
 Bonanno, G. A., Znoj, H. J., Siddique, S., & Horowitz, M. (1999). Verbal-autonomic dissociation and adaption to midlife conjugal loss: A follow-up at 25 months. *Cognitive Therapy & Research*, 23, 605–624.  
 Bowlby, J. (1980). *Attachment and loss: Loss, sadness and depression* (Vol. 3). New York: Basic Books.  
 Calhoun, L. G., Cann, A., Tedeschi, R. G., & McMillan, J. (2000). A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *Journal of Traumatic Stress*, 13, 521–527.  
 Cleiren, M. P., Diekstra, R. F., Kerkhof, A. J., & van der Wal, J. (1994). Mode of death and kinship in bereavement: Focusing on “who” rather than “how”. *Crisis*, 15, 22–36.  
 Cook, J. A. (1988). Dad's double binds: Rethinking father's bereavement from a men's studies perspective. *Journal of Contemporary Ethnography*, 17, 285–308.  
 Cook, J. A., & Wimberley, D. W. (1983). If I should die before I wake. Religious commitment and adjustment to the death of a child. *Journal for the Scientific Study of Religion*, 22, 222–238.  
 Elliott, T. R., & Frank, R. G. (1996). Depression following spinal cord injury. *Archives of Physical Medicine and Rehabilitation*, 77, 816–823.  
 Ellis, A. (1962). *Reason and emotion in psychotherapy*. New York: Lyle Stuart.  
 Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology*, 54, 466–475.  
 Grob, A. (1995). Subjective well-being and significant life events across the life span. *Swiss Journal of Psychology*, 54, 3–18.  
 Hautzinger, M. (1995). *Beck-Depressions-Inventar (BDI) Handbuch* (2 ed.). Bern: Huber.  
 Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strohsal, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, 64, 1152–1168.  
 Horowitz, M. J. (1986). *Stress response syndromes*. (2nd ed.). New York: Aronson.  
 Horowitz, M. J., Field, N. P., & Classen, C. C. (1993). Stress response syndromes and their treatment. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (pp. 757–773). New York: The Free Press.  
 Horowitz, M. J., Siegel, B., Holen, A., & Bonanno, G. A. (1997). Diagnostic criteria for complicated grief disorder. *American Journal of Psychiatry*, 154, 904–910.  
 Horowitz, M. J., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective stress. *Psychosomatic Medicine*, 41, 209–218.  
 Horowitz, M. J., & Znoj, H. J. (1999). Emotional control theory and the concept of defense: A teaching document. *Journal of Psychotherapy Practice & Research*, 8, 213–224.

- Horowitz, M. J., Znoj, H., & Stinson, C. (1996). Defensive control processes for coping with excessively emotional states of mind. In M. Zeidner & N. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 532–553). New York: Wiley.
- Kring, A. M., & Bachorowski, J.-A. (1999). Emotions and psychopathology. *Cognition and Emotion, 13*, 575–599.
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. [Special Issue: Stress, Coping, and Social Cognition.] *Social Cognition, 7* (2), 113–136.
- Lehman, D. R., Wortman, C. B., & Williams, A. F. (1987). Long-term effects of losing a spouse or child in a motor vehicle crash. *Journal of Personality and Social Psychology, 52*, 218–231.
- Lindemann, E. (1944). Symptomatology and management of acute grief. *American Journal of Psychiatry, 101*, 141–148.
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology, 52*, 663–676.
- Maercker, A., & Schützwohl, M. (1998). Erfassung von psychischen Belastungsfolgen: Die Impact of Event Skala—revidierte Version (IES—R). (The assessment of psychological sequelae of trauma. The Impact of Event Scale—revised version). *Diagnostica, 44* (3), 130–141.
- Middleton, W. R., Raphael, B., Burnett, P., & Martinek, N. (1998). A longitudinal study comparing bereavement phenomena in recently bereaved spouses, adult children and parents. *Australian & New Zealand Journal of Psychiatry, 32*, 235–241.
- Moos, R. H., & Schaefer, J. A. (Ed.). (1986). *Coping with life crises. An integrated approach*. New York: Plenum Press.
- Moos, R. H., & Schaefer, J. A. (1993). Coping resources and processes: Current concepts and measures. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed.) (pp. 234–257). New York: Free Press.
- Murphy, S. A., Braun, T., Tillery, L., Cain, K. C., Johnson, L. C., & Beaton, R. D. (1999). PTSD among bereaved parents following the violent deaths of their 12- to 28-year old children: a longitudinal prospective analysis. *Journal of Traumatic Stress, 12*, 273–291.
- Neimeyer, R. A. (2000). Grief therapy and research as essential tensions: Prescriptions for a progressive partnership. *Death Studies, 24*, 603–610.
- Park, C. L., Cohen, L. H., & Murch, R. L. (1997). Assessment and prediction of stress-related growth. *Journal of Personality, 64*, 71–105.
- Pennebaker, J. W. (1990). *Opening up: The healing power of confiding in others*. New York: William Morrow.
- Pennebaker, J. W. (Ed.). (1995). *Emotion, disclosure, and health*. Washington, DC: American Psychological Association.
- Raphael, B. (1977). Preventive intervention with the recently bereaved. *Archives of General Psychiatry, 34*, 1450–1454.
- Raphael, B., Middleton, W., Martinek, N., & Misso, V. (1993). Counseling and therapy of the bereaved. In M. S. Strobe, W. Stroebe & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 427–453). New York: Cambridge University Press.
- Raphael, B., & Nulman, K. (1988). Counseling the bereaved. *Journal of Social Issues, 44* (3), 191–206.
- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology, 79*, 410–424.
- Rubin, S. S. (1993). The death of a child is forever: The life course impact of child loss. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 285–299). Cambridge, England: Cambridge University Press.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9* (3), 185–211.
- Shuchter, S. R., & Zisook, S. (1993). The course of normal grief. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement* (pp. 23–43). New York: Cambridge University Press.
- Stroebe, M., Gergen, M. M., Gergen, K. J., & Stroebe, W. (1992). Broken hearts or broken bonds: Love and death in historical perspective. *American Psychologist, 47*, 1205–1212.
- Stroebe, M., van Son, M., Stroebe, W., Kleber, R., Schut, H., & van den Bout, J. (2000). On the classification and diagnosis of pathological grief. *Clinical Psychology Review, 20*, 57–75.
- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma & transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Wegner, D. M., Erber, R., & Zanakos, S. (1993). Ironic processes in the mental control of mood and mood-related thought. *Journal of Personality and Social Psychology, 65*, 1093–1104.
- Weiss, D. S., & Marmar, C. R. (1996). The Impact of Event-Scale—Revised. In J. P. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD: A handbook for practitioners* (pp. 399–411). New York: Guilford Press.
- Zeidner, M., & Saklovske, D. (1996). Adaptive and maladaptive coping. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 505–531). New York: Wiley.
- Znoj, H. J., & Grawe, K. (2000). The control of unwanted states and psychological health: Consistency safeguards. In A. Grob & P. Walter (Eds.), *Control of human behaviour, mental processes and awareness* (pp. 263–282). New York: Erlbaum.
- Znoj, H., Sundin, E., Maercker, A., & Horowitz, M. (2000). *Sense of Emotional Control Questionnaire: A self-report measure*. Unpublished manuscript, University of Bern, Switzerland.