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The Effects of the Communication of Emotional Experiences

Promoteur

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*In memory of my beloved grandmas
Imelda Defruytier
and Ghislaine Devergnies*

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General introduction

Common sense and psychology both hold the assumption that talking about emotional experiences with others helps individuals to cope with their emotions. Common sense indeed suggests that "talking about an emotional experience is relieving one's emotions". In the literature, dozens of psychological concepts involve the view that talking about emotional experiences decreases the emotional load of emotional memories. Thus, it is quite generally taken for granted that talking about one's emotions is beneficial for emotional recovery.

The aims of the present dissertation were twofold. This first concern dealt with people's beliefs about the effects of communication of emotion. *Do lay people believe that communicating one's emotions is helpful, to what extent, and what are the rationales they advance?* The second concern dealt with *actual* effects of the communication of emotion. Beside people's beliefs about the effects of expression of emotion, *does communication of emotional experiences really help?* In other words, is there empirical evidence that it does lead to emotional recovery from the emotions and to other beneficial effects?

Presentation of the dissertation

This dissertation is divided into two main parts. In the theoretical part, I will review the literature on the effects of communication of emotional experiences on health and well-being. In the empirical part, attention will be paid to an empirically untested assumption commonly associated with the communication of emotions, namely whether it leads to recovery from the emotions felt when thinking about an emotional event.

The **theoretical part** comprises four chapters. The first requirement for the study of the impact of communication of emotional experience is clarity about what is meant by "emotional experience". Chapter 1 presents the framework to which I refer. It focuses on the clarification of the concept of emotion. The central dimensions of an emotional experience will be described. In addition, studies will be reviewed that have shown that about 90% of all emotional events have cognitive and social long-lasting consequences. First, episodes are ruminated about. Second, they are shared with others. Evidence collected on these processes will be reviewed. Conceptual clarity will first allow to properly select literature on the impact of the communication of emotional experiences. An important implication of conceptual clarity deals with the exclusion of the studies which tested the effects of psychotherapeutic interventions in unhealthy or clinical populations. Second, it will allow valid assessment of the effects of the communication of emotional experiences on their emotional impact.

According to common sense, "talking about emotional makes you feel good", "it is relieving," and "has liberation consequences". Because, to my knowledge, no scientific data had been collected on the extent to which people share these representations, I documented this

question. Chapter 2 will present two studies conducted with large samples of lay people. Their beliefs about the beneficial and detrimental effects of communication of emotion will be examined.

In the two following chapters, the question is raised as to which are the actual effects of the communication of emotional experiences? Does talking about emotions really make people "feel good"? Do they really feel relieved? Are there objective markers that indicate that communication of emotion leads to better health and well-being? In Chapter 3, the empirical literature available in this field will be gathered and presented. A particular attention will be paid to the work of James Pennebaker and his colleagues who initiated controlled research on the effects of the communication of emotions on health and well-being. Because previous reviews of the empirical literature had either different scopes than the one focused by the above question, or various shortcomings, Chapter 4 will then systematically review the empirical findings on the effects of communication of emotion. Experimental evidence will be quantitatively rather than qualitatively reviewed. Short and long-term outcomes on the impact of communication of emotion will be summarised, as well as specific outcomes on physical and psychological variables. Then, variables influencing the effect of communication of emotion will be discussed.

The **empirical part** of the dissertation consists of five chapters. Chapter 5 will introduce the empirical research that was conducted by briefly summarising the conclusions of the theoretical part on the impact of communication of emotional experiences on health and well-being. It will also present the specific questions that I have attempted to answer. In particular, the question was raised as to whether communication of emotional experiences leads to relief or to emotional recovery from the emotions. It will also present a preliminary answer to this question by reviewing correlative data on the relationship between naturally occurring communication of emotional episodes and emotional recovery. Previous research investigated the effects of communication on *general physical and mental health* (e.g., physical symptoms, number of illnesses, immune function, or moods). My research focused on an aspect that has never previously been investigated: The effects of communication on the *alleviation of the emotional impact* of episodes (Rimé, Finkenauer, Luminet, Zech, & Philippot, 1998; Zech, 1999).

Chapters 6 to 9 will present the experimental research that I conducted to test the assumption that "communication of emotion helps to recover from emotional experiences". Four studies will be reported, all intended to investigate actual effects resulting from the communication of emotional episodes. The purpose of the first experiment (Chapter 6) was to explore some of the mechanisms that underlie the beneficial effects of communication of emotion on emotional recovery. It was designed to compare four different types of focus of communication of emotional experiences. It was expected that an emotion-focused communication and a communication focused on the meanings and consequences of the emotional episode would lead to more emotional recovery from the emotions than the

communication of only facts related to the emotional episode. These communications which focused on specific aspects of the emotional experiences were compared to a communication of emotions without constraints to share one or another aspect of the emotional event.

The purpose of the second experiment (Chapter 7) was to control for the unspecific factors that could explain why participants in every condition of Experiment 1 seemed to have benefited from the communication of their emotional experiences. Conditions in which participants talked about their emotional experiences were compared with a condition involving the communication of non emotional but personal topics. Dependent variables considered in this study included emotional recovery measures, but also physical health, general well-being, and reported benefits of communication to indicate whether findings of previous studies could be replicated.

The purpose of the third experiment (Chapter 8) was to examine the internal and external validity of the concept of emotional recovery. In addition, it investigated whether the communication of emotions of unrecovered events yielded more beneficial effects on emotional recovery and perceived benefits than the communication of recovered ones.

The purpose of the fourth experiment (Chapter 9) was to investigate whether the communication of emotions related to unrecovered episodes leads to emotional recovery from the communicated event and to perceived benefits. This study controlled for unspecific factors that could explain the evolution of the emotional impact observed in the previous studies (an intimate emotional contact, a personal contact, and spontaneous remission).

Finally, I will present the *general conclusions* that can be drawn from the theoretical and empirical parts. Together, the theoretical part and the empirical findings presented in this dissertation will call for a change in views and studies on the effects of communication of emotions. For example, communication of emotion does not *systematically* lead to beneficial effects. Both the theoretical and empirical part of this dissertation will indicate that commonly held assumptions associated with the beneficial effects of communication of emotion need to be modified. Moreover, a variety of questions concerning the effects of communication of emotion will remain unanswered. Multiple directions for further studies on the impact of communication of emotion will be proposed. Given that communication of emotion impinges on virtually all dimensions of people's lives as well as on clinical practice, I will conclude that the study of the effects of communication of emotional experiences represents a challenge for future research in psychology.

Before going on, an important point needs to be made, namely the distinction between the concept of *social sharing of emotion* which is recent (Rimé, 1987) and the concept of *self-disclosure* that has been used from the late fifties (Jourard, 1959; Jourard & Lasakow, 1958). These concepts are similar but not equivalent. Social sharing of emotion is similar to self-disclosure in that definitions of self-disclosure usually emphasise either information verbally conveyed to another person, or the process of making oneself known to others (Stokes, 1989).

Self-disclosure has been defined "as what individuals verbally reveal about themselves to others (including thoughts, feelings, and experiences)" (Derlega, Metts, Petronio, & Margulis, 1993, p. 1). This is also the case with social sharing of emotion. However, the concept of social sharing of emotion is different to the one of self-disclosure in that social sharing only refers to the communication of emotional experiences. For example, if a person goes to a party and starts talking about his/her opinions and thoughts about smoking, this will be considered as a self-disclosure process, but not a social sharing of emotion process. However, if this person starts explaining that a family member has died of lung cancer because of smoking, and explains how he/she has reacted to this situation, this will be considered as both a self-disclosure and a social sharing process. Another difference between these two concepts is that self-disclosure also refers to a personality construct (Cozby, 1973), which is not the case for social sharing.

The words "social sharing of emotion" may lead to misinterpretations. Although it was first defined as composed by both oral and written expression of emotional events, it has up to now only been studied through its common use, namely the sharing of emotional information about an event between two persons. The scope of this dissertation includes both oral and written emotional expression. In order to avoid misinterpretations, I referred to social sharing of emotion with the more general words of *communication of emotion*, which includes both acceptations.

Theoretical part

Chapter 1. Emotions and their cognitive and social consequences

The aim of this thesis is to gain insight into the effects of the communication of the emotional phenomena. The first requirement for the study of the impact of communication of emotional experience is clarity about what is meant by "emotional experience". A definition of the emotional phenomena is necessary in order to select and interpret the studies that will help to answer the question of whether communication of emotional experiences is beneficial or not. In addition, conceptual clarity will help to conduct research on the effects of communication on variables such as the emotional impact of events in that it will allow validity of measurement. In the present chapter, I will first describe the central dimensions of emotions: that is, the dimensions along which an emotional experience should be described. Ways of measuring each of these will be summarised. Then, in a second part, data will be reviewed that show that emotions have cognitive and social long-lasting consequences.

The emotional experience will be defined according to a theoretical model that has been summarised by Nico Frijda in 1986. This model has advantages over predominantly biological (e.g., Ekman, 1984, 1992a, 1992b; Izard, 1992; Johnson-Laird & Oatley, 1992; Tomkins, 1980) and predominantly cultural theories of emotions (e.g., Averill, 1980; Harré, 1986; Rosaldo, 1980; Lutz, 1988) in that it allows for the full description of emotional experiences and for the distinction between different emotions. Indeed, on the one hand, biological theories of emotions have mainly discussed whether basic emotions universally exist. They have failed to define emotions precisely, and have focused on just a few phenomena of interest (i.e., the specific pattern of emotional reactions that accompany basic emotions). On the other hand, cultural theories of emotions proposed that emotions are primarily culturally constructed and they focused on the study of cultural differences in emotion meanings (e.g., vocabularies) without making clear how the cultural meaning of emotions relates to other phenomena making up emotions (e.g., physiological changes, behaviour expression). Frijda's (1986) model, however, allows for detailed description of the emotional phenomenon because it has identified *all relevant short-term dimensions of emotions*. This model includes each of the phenomena studied by biological and cultural theories of emotions.

1. What is an emotion?

There is a growing consensus among emotion theorists that emotions consist of different phases or components, with components influencing each other, but not necessarily implying or strictly determining each other (Arnold, 1960; Frijda, 1986; Lazarus, 1966; Ortony, Clore, &

Collins, 1988; Roseman, 1984; Scherer, 1984). Next, I will summarise this component model of emotion (see Figure 1.1).

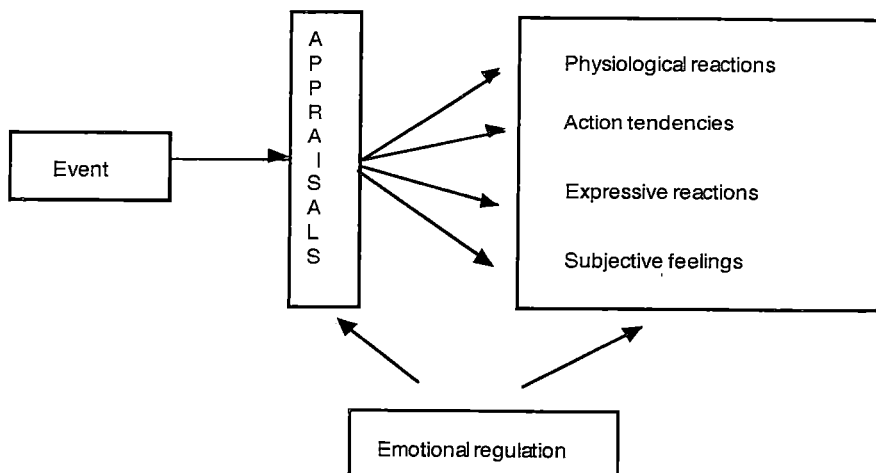


Figure 1.1 *Component model of emotion (Frijda, 1986)*

First, emotions are elicited by a *specific antecedent event*. This aspect is critical in the distinction between moods and emotions. Indeed, emotions have a specific object (i.e., a person, thing, or event) whereas moods are diffuse or global affective phenomena that lack such an object (e.g., Frijda, 1993; Frijda, Mesquita, Sonnemans, & Van Goozen, 1991; Isen, 1984; Morris, 1989). As Frijda (1993) puts it, emotions "are 'about' something." (p. 381) For example, one is happy about something, angry at someone, or afraid of something. "On the contrary, moods refer to "everything", "anything", or "nothing," such as in the following statements: "Nothing interests me," "I get mad at anything," "Everything looks rosy" (Frijda, 1993, p. 381). Scherer, Walbott, and Summerfield (1986) have examined extensively the antecedent events reported by a large pool of respondents for four basic emotions. They observed that joy, sadness, fear, and anger could be elicited respectively by 21, 20, 26, and 22 different antecedent situations. Examples of antecedent situations were "Good news" (joy) such as when someone receives an unexpected job offer, "Permanent separation from loved blood relatives and in-laws" (sadness) such as when one's partner dies, "Fear of physical aggression by others" (fear), such as when someone fears to be sexually assaulted or robbed, or "Failure to reach goals or to achieve an objective" (anger) such as when one fails an examination.

An event is considered by many theorists as devoid of the power to elicit by itself an emotion. Rather, the emotion is a function of the significance of the eliciting event to the

experiencing person. This significance is the outcome of a process of *evaluation or appraisal* of the event (Frijda, 1986; Lazarus, 1991b; Oatley, 1992; Ortony et al., 1988; Scherer, 1984). The appraisal process is based on a set of criteria specific to the person. It is according to the person's goals, motives, well-being, or affective sensitivities that the appraisal of the event is made. Lazarus (1966, 1991b) argued that there are two consecutive appraisals. A primary evaluation occurs first. It deals with the valence of the event which is a function of the goal conductiveness of the event. It leads to evaluate the event as pleasant or painful. If the event helps reaching a goal, it will be evaluated positively. On the contrary, if the event blocks or challenges the attainment of a goal, it will be evaluated negatively. A secondary appraisal then follows and determines to what extent the person will be able to cope with the consequences of an event. It depends on the competencies, personal and social resources, or power of the individual. For example, if a person has a car accident with only material loss, the secondary appraisal will deal with the evaluation of whether the person has another car, whether the person has sufficient financial resources to buy another car, whether the person immediately needs a car to work (e.g., a commercial representative), or whether family or friends may help the person for next locomotions. Thus, the evaluation of the event will not only be determined by the valence of the event (i.e., the first appraisal) but also by the needs and resources of the person (i.e., the secondary appraisal). The results of these two appraisals will determine the type and intensity of the felt emotion. Recently, theorists have established lists of specific appraisal dimensions or criteria that are assumed to be used in evaluating emotion-antecedent events. Examples of such dimensions are novelty or expectedness of the event, responsibility of the event's occurrence, causal agency (by self, other, or the course of events), and controllability of the consequences (Frijda, Kuipers, & ter Schure, 1989; Ortony et al., 1988; Roseman, 1991; Scherer, 1984, 1988; Smith & Ellsworth, 1985). Although most authors consider that the appraisal process is performed in an automatic or unconscious manner, appraisal components have usually been measured by means of self-reported questionnaires (e.g., Gehm & Scherer, 1988; Mauro, Sato, & Tucker, 1992; Roseman, Spindel, & Jose, 1990; Smith & Ellsworth, 1985). For example, a recurrent research procedure consists of asking participants to recall emotional events of their recent past and then to answer questions about how they evaluated or appraised these events at their occurrence. Concretely, appraisal questionnaires may be composed of pairs of antonymous adjectives that describe the event. Participants are asked to rate how they viewed an emotional event on bipolar Likert-scales with the antonyms as anchors. For example, the expectedness of the event may be assessed by: "Was the event...", with the following antonyms as anchors "expected or unexpected?" Similarly, the severity of the event may be assessed by: "For myself, I feel the event was..." "full of consequences or without any consequences". The valence of the event may be assessed by "Was the situation..." with anchors such as "positive and negative?"

A third component of emotion is the *physiological (autonomic) changes*. Emotions involve physiological changes, such as changes in heart rate, blood pressure, skin conductance,

or respiration. These physiological changes have been described by Cannon (1929) as a set of manifestations allowing the organism to prepare to muscular action. These physiological changes may be assessed objectively as when blood pressure is taken. They may also be assessed subjectively by means of self-report questionnaires in which the person answers questions about whether he/she felt several bodily sensations at the occurrence of the event or when thinking about it now (e.g., perspiration, respiration changes, heart beats acceleration).

A fourth component of emotion is the change in *action readiness or action tendencies* (Frijda, 1986). Emotions involve changes in *action tendencies*. This means that when confronted with an emotional event, people become prepared or tend to act in certain ways. There are impulses to establish, maintain, or disrupt one's relationship with an object. For example, if one person unexpectedly encounters a bear during a walk in a wood, this person might tend to escape this situation and run very fast, or he/she might be completely paralysed with fear. If this person meets an old friend in the street, he/she might tend to approach and have a talk with this friend. Thus, emotions elicit general states of enhanced or diminished action tendency or activation (Frijda, 1986). Action tendencies have also been investigated by means of self-reported questionnaires. For example, participants are asked to recall emotional events and then to answer questions about how they tended to react at the event's occurrence (e.g., "did I feel paralysed?", "did I tend to flight, fight, cry, or move?")

A fifth component of emotion is the *expressive behaviour or reaction* that may spring from a change in readiness. Facial expressions (e.g., smiling, frowning) were the most studied expressive reactions in the literature on emotion (probably because of the important role they play in interpersonal and social relationships). Several standardised techniques have been developed for the assessment of facial expressions. For example, in the Facial Activity Coding System (FACS, Ekman & Friesen, 1978), trained judges code every muscle movement in the face of the observed person. This type of assessment is only possible with posed facial expressions. In order to assess ongoing facial expressions, other techniques exist. For example, persons undergoing an emotional situation may be videotaped. Then, the video-cassette may be decoded by judges. Several judges can be each in front of a monitor which transmits the same image of a person experiencing an emotional event. Each judge has to record one precise facial movement (e.g., smile, frowning, pressing lips). Each time such a facial movement is noticed, the judge activates a button. Hence, both the frequency and the corresponding duration of each facial expressions can be recorded. Finally, ongoing facial expressions can also be objectively assessed by means of electromyographic captors placed on particular muscles of the face known to be active in specific emotional expressions. For example, the zygomatic is known to be activated when an expression of joy is shown. Similarly, the corrugator is activated when an expression of anger is shown. Expressive reactions may also be indexed by vocal and gesture changes (e.g., Rimé & Schiaratura, 1991; Scherer, 1996).

A sixth component of emotion is the *subjective feeling of the emotion*. In some ways, this may be the most important component of emotion. Indeed, one could hardly report having an emotion if there was no conscious experience of it. Many theorists have tended to equate emotion with feeling. Yet, Scherer (1996) argued in favour of viewing the subjective component as a reflection of the changes occurring in all other components. Frijda (1986) similarly proposed that the subjective feeling embodies the awareness of any or all of the above cited components. The feeling component has exclusively been studied through verbal labels (Scherer, 1996). A large number of studies have shown that a small number of superordinate dimensions are sufficient to summarise feeling labels. The literature consistently proposed two broad dimensions for describing the subjective feeling component: a pleasantness/unpleasantness dimension and a high/low activation dimension (J. A. Russell, 1980). Yet, Scherer (1996) stressed that an enormous number of verbal labels for emotions, particularly subjective feelings, exists in virtually all the languages in the world. Depending on the criteria used by the investigator between 200 and close to 1,000 such terms were identified for some of the languages studied. According to him, this strongly suggests that much more subtle differentiations of emotional processes are possible. Parsimony and accuracy of the evaluation of the subjective feeling dimension can be reached when using an intermediate number of labels, i.e., twelve feelings (interest, joy, sadness, anger, fear, anxiety, disgust, contempt, surprise, shame, guilt, and elation) (Izard, Dougherty, Bloxom, & Kotsch, 1974).

A seventh component of emotion is the *regulation process of the emotion*. It is thought that an emotion is immediately concluded by a self-control, or self-restoration procedure. Regulation refers to both inhibitory control and voluntary enhancement. Emotional reactions can be enhanced or decreased according to the degree of pleasure or displeasure of the consequences of these responses. Regulation can affect all the emotion components mentioned. For example, the appraisal of an event may be modified by selective attention and cognitive activities (e.g., humiliation as resulting from someone's intended action vs. failure to achieve a goal resulting in a challenge for the future). Particular action tendencies and expressive behaviours may be avoided or, by contrast, emphasised with full conviction. Regulation is determined by individual experiences and by socio-cultural norms with respect to having and expressing the various emotions (Folkman & Lazarus, 1988; Mesquita & Frijda, 1992). For example, a particular person or community may disapprove of behaviours that are common in most other individuals or cultures (e.g., expression vs. inhibition of crying spells among men).

According to the component model, emotion is conceived both as a short-lived and as an intrapersonal phenomenon, essentially consisting in a brief and temporally well-circumscribed disruption that affects the course of the person's life at a given moment. This disruption would immediately be resorbed. Such a view is quite consistent with lay people's view that emotions occur as accidents in the course of a life normally dominated by rational thinking and controlled action, and that such brief challenges to rationality and control have to be overcome rapidly and privately. Emotional experiences would be buried as quickly as possible in the depth of

memory, unnoticed by the person's social environment (Rimé, Mesquita, Philippot, & Boca, 1991).

To sum up, contemporary emotion theories agree that emotions are multifaceted phenomena involving appraisals, changes in action tendencies, physiological, expressive, and subjective responses (Arnold, 1960; Frijda, 1986; Lazarus, 1966; Ortony et al., 1988; Roseman, 1984; Scherer, 1984). Although it is largely recognised that these different facets correlate only weakly (Frijda, Ortony, Sonnemans, & Clore, 1992), the emotional experience and its intensity is thought to reflect all of the components mentioned. These immediate emotional responses are usually considered to last a few seconds or minutes and to be regulated immediately (Frijda et al., 1991).

Recently, however, Rimé and colleagues raised the question as to whether emotion consists only of short-lived phenomena (Rimé, Mesquita, et al., 1991; Rimé, Noël, & Philippot, 1991; Rimé, Philippot, Boca, & Mesquita, 1992; Rimé et al., 1994). In addition, they questioned whether emotions are only intrapersonal. This recent point of view will be discussed in more details in the next section.

2. Cognitive and social consequences of emotions

The research developed by Rimé and colleagues on the cognitive and social consequences of emotions evolved from the postulate that *everyday life emotion and traumatic experiences are not two distinct phenomena*. They conceive of trauma as the extremity of a continuum on which emotion is located on a more intermediate position (Philippot & Rimé, 1998). *Although differing in intensity, they proposed that the processes at work in emotion and in trauma are similar in nature and would simply differ in intensity or in extent*. Indeed, Rimé et al. (1992) argued that the phenomena studied by the psychology of emotion--joy, anger, fear, sadness, shame, and the like--are also characterised by a sudden disruption of people's subjective world.

When people have been exposed to an emotional event, the processing of emotional information generally requires later stages which could hardly be fulfilled in the short-term and without referring to the social environment. More specifically, it was proposed that after an emotional event, people generally would experience long-lasting recurrent thoughts about the event (mental reminiscences) and that they would initiate interpersonal behaviours in which discussing the event and their reactions to it would be central (social reminiscences). These hypotheses led Rimé and colleagues to investigate intra- and interpersonal manifestations of information processing after everyday life emotional events. If emotions were found to generate long-lasting mnemonic recurrences as well as an enduring urge for social sharing, emotions could not anymore only be conceived as short-lived phenomena. Rather, mental and social reminiscences about an emotional experience would then constitute two long-lasting components of the emotional experience.

1. Mental ruminations

Mental reminiscences typically consist of so-called *mental ruminations* in which thoughts, memories, or mental images related to the event repetitively surface into consciousness, even if the individual tries to avoid them (Martin & Tesser, 1989; Tait & Silver, 1989). One of the most striking features of this process is that it can manifest itself for extensive time periods. For instance, in a follow-up study of people who had lost either a child or a spouse in a car accident, Lehman, Wortman, and Williams (1987) noted that, 4 to 7 years later, more than 90% of their subjects were still experiencing repetitive thoughts or mental images related to the event. According to Martin and Tesser (1989), rumination is defined as a form of conscious thinking, directed toward a given object for an extended period of time. Rumination involves both autonomic and controlled processes. It is to be distinguished from other kinds of thinking, such as fleeting ideas that do not recur or brief thoughts directed toward transitory goals.

Findings on the prediction that emotional experiences would be ruminated about were summarised by Rimé et al. (1992) and more recently by Rimé (1995). Evidence in support of the view that emotional experiences are usually prolonged in mental rumination was first found from studies using a retrospective procedure. Volunteer subjects were instructed first to recollect and briefly describe an emotional episode corresponding to a specific emotion (e.g., joy, anger, fear) that they recently experienced. They then answered a number of questions about their rumination in relation to this episode during the hours and days that followed it. In several of these studies (Rimé, Mesquita, et al., 1991; Rimé, Noël, et al., 1991; Rauw & Rimé, 1990), subject's mental rumination was assessed by the following question: Did the event spontaneously come back to your mind afterwards? The proportion of participants who answered negatively to this question was systematically very low in each of the studies (from 2.0 to 4.2%). A majority of respondents (from 50.0 to 59.2%) reported that spontaneous thoughts about the event occurred to them once or twice, or from time to time. Still, a considerable proportion of people (from 38.7 to 45.8%) mentioned that they have had such thoughts often or very often. These figures were observed for all types of emotion, of both positive and negative valence – joy, fear, anger, or sadness. Thus, these self-descriptive data were strongly in line with the prediction that ordinary emotion would be followed by repetitive thoughts about the emotional experience. Moreover, more intense emotional experiences elicited more frequent intrusive thoughts afterwards.

These studies also addressed the universality of mental ruminations of emotional experiences. Are there sex, age, or cultural differences? Frequency of rumination were collected on females and males from four different age groups: 12-17 years-olds (Rauw & Rimé, 1990), college students (Rimé, Mesquita, et al., 1991, Study 2), 18-41 year-old young adults (Rimé, Mesquita, et al., Study 1), and 40-60 year-old older adults (Rimé, Mesquita, et al., Study 3).

No sex difference was observed in these data sets, except for the adolescents. Male adolescents were reported to ruminate less often than females. A closer inspection of the data revealed that this sex difference was specifically due to reports of joy experience. These data are not easily interpretable as such. It could be that the types of joy events reported by male and female adolescents do differ. Regarding the evolution throughout the lifespan, there was no difference in the frequency of rumination across the four age groups.

Data collected by Rimé and colleagues did not yet offer a clear picture regarding possible cultural differences in rumination after an emotional event. On the one hand, in a replication of the work of Rimé, Noël, et al. (1991) in the Basque Country, Vergara (1990) did not find cultural differences: Basque people reported frequencies of rumination similar to the Belgian samples. While only 3% of the Basque participants declared never having ruminated after the event, 43% reported that thoughts of the event spontaneously came to their consciousness from time to time, and 26% reported ruminating often about the event. On the other hand, in a replication of Rimé, Mesquita, et al.'s (1991) study, Croonenbergh, Rimé, Boca, and Philippot (1990) found that Mediterraneans tended to report more rumination during the period following soon after the emotional event (mean of 5.88 on a 7-point scale from 1 (*never*) to 7 (*almost continuously*)) than Belgians (mean of 5.14). However, when participants were asked the frequency of their rumination *at the time they were answering the questionnaire*, no difference was observed between the two samples.

In total, studies based on this retrospective procedure indicated that emotional experiences were ruminated about in more than 95% of the described emotional episodes. Yet these self-descriptive data may be somewhat limited in testing the hypothesis that any emotion, even if of mild intensity, is followed by private rehearsal. Indeed, subjects were left free to choose the emotional episode to be reported about. One could suspect them to have selected from their long-term memory relatively more intense and relatively more distinct emotional memories. Moreover, they might have selectively remembered episodes that they did think about. Thus, the possibility cannot be ruled out that these self-descriptive data collected to assess the extent and frequency of this process were unduly inflated. In order to overcome limitations inherent in the retrospective method, investigations based on alternative procedures further tested the hypothesis that emotions are followed by mental rumination. Among the alternative procedures used were (a) the diary method, (b) follow-up investigations, and (c) experimental induction of emotion.

The diary method allowed subjects to report their mental rumination during the hours and days immediately following the related emotional event. Such a method largely prevents potential reconstructive memory bias. In this procedure, subjects filled out a questionnaire every night before going to bed for a period of 2 to 3 weeks, depending on the study. Subjects first briefly described the event that had affected them the most during the day, or the day before, depending on the study. They then answered various questions, including questions on their mental rumination about the described event. In one diary study, 17 subjects reported during 20

or 21 consecutive days about the most emotional event of the previous day (Rimé et al., 1994, Study 2). Eighty-three percent of respondents reported having thought of the event at least once during the day. Mental rumination appeared clearly repetitive in 34.8% of the events, with 19.5% of reported events thought of "several times," and 15.3% of them thought of "constantly." Participants predominantly reported that they could perfectly control these thoughts (70.5% of all events) or that they preferred not to interrupt them (17.6% of all events). Similarly, in most cases (55.9% of all events), subjects reported they did not attempt to avoid thinking about the event. Yet, in 9.7% of the cases, participants reported having tried to avoid thinking about the event "very often" to "all the time." Thus, overall results from this diary study were clearly consistent with studies conducted with the retrospective method.

In a second research strategy, potential selection bias was prevented by having the experimenters preselect this target event, in so-called "follow-up studies." In this procedure, subjects are first contacted at the time of their exposure to some important emotional situation, and are then followed up by researchers during the course of the following weeks. In one follow-up study, the target emotional event was child delivery, as experienced by 31 young mothers (Rimé et al., 1994, Study 4). When leaving the maternity ward (on average 5 days after the delivery), these women were given five copies of questionnaires to be completed on a fixed day during each of the 5 subsequent weeks. These questionnaires were composed of items on the mental rumination of the delivery experience. The gynaecological check-up, scheduled 6 weeks after the delivery, was used to collect the questionnaires. During the first and second weeks at home, the percentage of women who reported spontaneous mental rumination was extremely high, namely 90.3%. This figure progressively decreased during the subsequent weeks, with successive figures of 83.9, 67.8, and 54.8%. Again, the data from this alternative research procedure replicated the very high rates of mental rumination observed in retrospective studies.

A third alternative procedure used to test the hypothesis that mild or moderate emotional episodes elicit mental rumination is the experimental induction of emotion. The notion that mental rumination naturally develops after mild or moderate emotional episodes was already supported by experimental investigations conducted by Horowitz and colleagues many years ago. Participants were exposed to an emotion-inducing movie depicting sexual body injuries in adolescent circumcision rituals (e.g., Lazarus & Opton, 1966). In a post-film observation session, these participants were indeed found to have more frequent movie-related intrusive and repetitive thoughts than subjects who were previously exposed to a neutral movie (Horowitz, 1969, 1975; Horowitz & Becker, 1971a, 1971b). In a subsequent study, Horowitz and Becker (1973) compared the memory impact of an emotionally arousing unpleasant movie (the circumcision film) with an emotionally-arousing pleasant one (a sex education movie depicting a young couple enjoying sexual intercourse). Both emotion-inducing movies were shown to have a comparable impact on subsequent movie-related intrusive and repetitive thoughts. Thus, the hypothesis linking moderately intense emotional experience and subsequent mental rumination

was again supported by experimental data. These studies have also indicated that the emotional intensity induced by the film was positively correlated with the number of reported intrusive thoughts.

Overall, these results show that mental rumination is a phenomenon that appears repetitively after almost every emotion. Differences in rumination patterns were not observed between positive and negative affective states. The frequency of mnemonic reminiscences was proved stable through the lifespan and across sex. Finally, it was observed that rumination was occurring in different cultures, although it is still unclear if the rates of the reminiscences are comparable across cultures.

2. Social sharing of emotion

Mental ruminations are generally paralleled by interpersonal phenomena, equally likely to result from the disruptive character of the event. Indeed, people who have been exposed to emotional situations strongly incline to speak about their experience and related feelings with their social environment (e.g., Lehman et al., 1987; G. H. Mitchell & Glickman, 1977; Schoenberg, Carr, Peretz, Kutscher, & Cherico, 1975). These social reminiscences have been called *social sharing of emotions* and involve (1) the evocation of the emotion in a socially-shared language, and (2) at least at the symbolic level, some addressee (Rimé, 1987; Rimé, Mesquita, et al., 1991). In its most common form, social sharing of emotion occurs in the course of conversations in which individuals openly communicate about the emotional circumstances and their feelings and reactions. In its attenuated forms, it consists of latent or indirect communications in which the addressee is present only at the symbolic level, as is the case when one writes in a diary (Rimé, Mesquita, et al., 1991).

Findings on the prediction that emotional experiences would be socially shared were recently summarised by Rimé, Finkenauer, Luminet, Zech, and Philippot (1998). Early data reviewed by Rimé et al. (1992) in support of this prediction essentially relied upon the "recall" or retrospective procedure. As mentioned before, this procedure instructed respondents to recall and briefly describe an emotional episode corresponding to a specified basic emotion (e.g., joy, anger, and fear). They then answered questions about their sharing of this episode: Did they talk about the episode with others? With whom? How long after the emotion? How often? (Mesquita, 1993; Rimé, Mesquita, et al., 1991; Rimé, Noël, et al., 1991; Vergara, 1993). Eight independent studies based on this procedure (involving 1384 emotional episodes, reported by 913 respondents ranging in age from 12 to 72 years) indicated that emotional experiences were *shared in 88 to 96% of the cases*. The frequency of this process did not vary as a function of culture, sex, or age. The modal pattern was for an emotion sharing to be initiated *early after the episode*. It occurred during the day the episode happened in about 60% of the cases across studies. It was *repetitive and involved several recipients*. Recipients were essentially *intimates*. In 89 to 99% of the cases, they included parents or close family members, best friends, and/or

spouse or companion. People not belonging to this circle of intimates were rarely mentioned. The data analyses indicated that the frequency of social sharing is a function of the disruptiveness of the event. Thus, the more disruptive an event, the more repetitively people will share it.

Additional data were reported by Rimé et al. (1998) with research procedures that decreased potential memory bias inherent to the recall procedure. The studies involved both naturalistic observations and experimental studies. The naturalistic studies adopted either the follow-up, or the diary procedure. In the "follow-up" procedure, people were contacted immediately after an emotional situation and were subsequently recontacted on several occasions. A total of seven studies used this procedure (Boca, Rimé, & Arcuri, 1992; Rimé, Finkenauer, Luminet, & Lombardo, 1993; Rimé et al., 1994, study 4; Zech, 1994). In the "diary" procedure, participants reported daily about the most important emotional episode of the day and the event-related social sharing (a total of three studies; Rimé et al., 1994, study 1, study 2, and study 3). The experimental studies adopted a laboratory procedure in which experimental induction of emotion was designed (a total of three studies, Luminet, Bouts, Delie, Manstead, & Rimé, in press).

These studies provided evidence both replicating and extending previous findings. Consistent with these, results from follow-up studies indicated that social sharing occurred during the week following the episode at rates and in a repetitive manner closely matching those of the recall studies. Indeed, across all seven follow-up studies, participants had shared the emotional episodes in 94 to 100% of the cases. They usually continued to do so during the second week at virtually the same rates as during the first week. Marked decreases were then generally observed in the following weeks or months. Diary studies confirmed that social sharing of emotion happened in 58 to 69% of the cases on the day the event had happened and that it did not vary as a function of the primary emotion involved. Laboratory studies revealed that participants exposed to a highly emotional movie talked more about their emotional experience as compared to participants exposed to a low or moderate emotional film. This suggested that emotional intensity needed to exceed a certain threshold to elicit social sharing.

Other studies have investigated social sharing in different age and cultural groups, as well as personality variables related to social sharing. Two studies conducted on children (6 to 12 years) found that social sharing was manifested in basically the same manner as in adults, with parents clearly emerging as privileged sharing targets (Rimé, Dozier, Vandenplas, & Declercq, 1996). One study comparing a group of younger adults (25 to 40 years) with older adults (60 to 75 years) and elderly people (76 to 94 years) showed that the rate of social sharing increased with age (Rimé, Finkenauer, & Sevrin, 1995). Data collected in four countries of Asia and in two countries of the Western world confirmed that social sharing of emotion is a cross-cultural phenomenon. Yet, the collected data also revealed an abundance of cultural differences in sharing modalities. To illustrate, samples from Asian locations reported lower rates of emotion sharing and lower number of repetitions than samples from Western locations

(Rimé, Yogo, & Pennebaker, 1996). Finally, two studies were conducted to test whether personality traits accounted for extent of social sharing of emotion (Luminet, Zech, Rimé, & Wagner, *in press*). Results showed that general personality dimensions such as the Big Five (e.g., Digman, 1990; Goldberg, 1990) had no predictive value for the social sharing of emotion. However, alexithymia, a very specific personality dimension concerned with the difficulty individuals have in the identification and verbalisation of emotional experiences (G. J. Taylor, Bagby, & Parker, 1997), has been found to be consistently negatively correlated with social sharing, at least for negative events.

Because listening to emotion narratives induces emotion in the listener (Archer & Berg, 1978; Lazarus, Opton, Monikos, & Rankin, 1965; Shortt & Pennebaker, 1992; Strack & Coyne, 1983), this person was expected to later share the listened narrative with a third person. In other words, a process of "secondary social sharing" should develop. However, this prediction is opposed to common sense in two ways. First, an emotional experience is often implicitly considered as a personal matter, presupposing confidentiality. Second, sharing usually occurs with close confidants who, given the intimate nature of the relationship, are not expected to disclose what they heard. Nevertheless, the rational followed above leads to predict the contrary. Once an emotion is shared, secrecy would rather be the exception.

This prediction was first tested using a modified version of the recall procedure. Christophe and Rimé (1997) asked students to recall an episode in which someone had shared an emotional experience with them. They then reported whether they later told others about what they had heard. Findings clearly confirmed the prediction that shared emotional episodes are not kept confidential. In 66% of the collected episodes, listeners acknowledged having talked about the shared episode to one or more persons. Secondary social sharing occurred twice or more in 53% of all cases. The frequency of secondary social sharing and the number of recipients with whom it occurred varied as a function of the emotional intensity felt by the listener in the initial sharing situation. A second study was conducted with a procedure involving participants to recall a situation in which someone had shared with them an emotional experience of particular intensity: either high, moderate, or low intensity (Christophe & Rimé, 1997). Observed rates of secondary social sharing were again high and amounted to 78% of the cases across conditions. Frequency of secondary sharing and number of recipients with whom secondary sharing occurred varied significantly with conditions of emotional intensity of the shared episode. Those who had listened to a highly emotional sharing manifested secondary sharing more often than those who had listened to either a moderate or a low intensity sharing, these latter two groups failing to differ significantly. Thus, these two studies confirmed that being exposed to social sharing of an emotion elicits secondary social sharing and that exposure to the sharing of more intense emotion elicits more repetitive sharing and sharing with more persons.

Thus, on the whole, these data confirmed that, after almost any emotional event, people feel urged to talk about it and that they have a strong propensity to communicate and socially

share their emotions. Social sharing of emotion was observed in a large variety of contexts and with a large variety of methods after emotional events.

3. Conclusions

The purpose of this chapter was to provide conceptual clarity about emotional experiences. There are two important implications of the present chapter. First, it concerns the selection of the studies that will help to answer the question of whether communication of emotional experiences is beneficial or not. Indeed, the present dissertation will deal only with studies that induced the communication of an emotional event. If there was no emotional event, one could not talk about an emotional experience but rather about moods. This is important because it follows that psychotherapeutic studies will not be included in the present dissertation. Indeed, their object of study does not *only* involve the communication of past emotional experiences, but the communication of the person's past, present, and future as a whole. In this sense, psychotherapy should be regarded as a self-disclosure process (i.e., verbalisation of personally relevant matters such as opinions, thoughts, and emotions) rather than a process of communication of emotional experiences (where only personal emotional experiences are considered).

The second important implication is concerned with the way researchers should assess the emotional impact of upsetting experiences. The reasoning held and evidence provided in the present chapter lead to the revision of the conceptualisation of emotions. As can be seen in Figure 1.2, emotions are conceived as a fundamentally multifaceted phenomenon with various components: appraisals, action tendencies, physiological, expressive and subjective responses, mental ruminations, and social sharing. All these components are thought to be hardly dissociated. According to the original component model of emotion (e.g., Frijda, 1986), emotion is essentially conceived as a short-lived phenomenon, consisting in a brief disruption that affects the course of the person's life at a given moment. Emotions should be regulated immediately. However, it was shown that emotional episodes are followed by two other long-lasting phenomena: mental rumination and social sharing. Mental rumination is considered to involve passive activation of thoughts that are conscious, repetitive, aversive, and difficult to get rid of (Martin, Tesser, & McIntosh, 1993). On the other hand, people feel the need to socially share their emotions and they do so repetitively and with different recipients after emotional events (Rimé et al., 1992). Because these different facets may only be weakly correlated (Frijda et al., 1992), the emotional experience and its intensity should be assessed by each of the components mentioned. The research that I conducted on the impact of communication of emotion thus involved the measurement of these different facets (see *Empirical Part* of this dissertation).

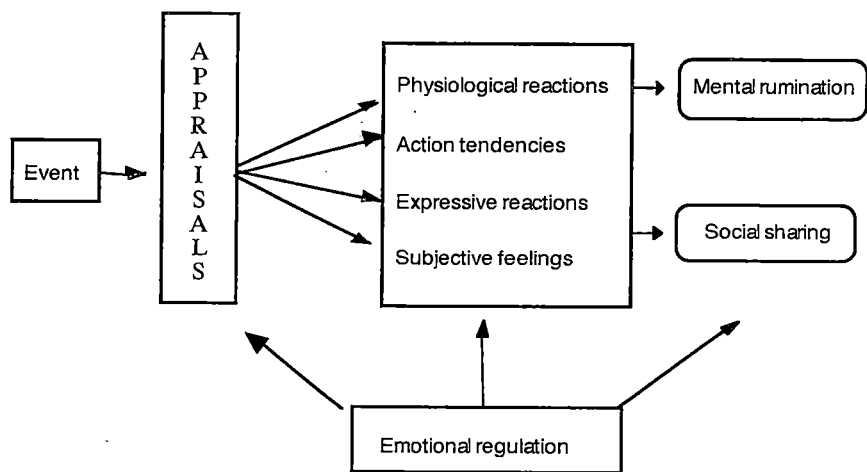


Figure 1.2 Long-lasting model of emotion

Chapter 2. Common sense beliefs and representations about the effects of communication of emotions

1. Introduction

In the previous chapter, data showing that individuals socially share their emotions was reviewed. According to these data, the emotional experience can be followed by a strong need to talk about it again in the following hours, days, and weeks. These observations may be closely related to a discourse that is frequently met in common life. According to this discourse, "it is good to talk about one's emotions", "talking about emotions makes you feel good", "talking about one's emotions is relieving", "talking about one's emotions would have liberation consequences." On such bases, one frequently hears people recommending to the one who has just gone through a painful emotional experience to "express oneself", to "talk about what he/she feels", to "talk about it with his/her surroundings."

In the presence of this frequent discourse and of the powerful representations that are associated to it, it seemed necessary to proceed with an empirical approach regarding these. To which extent are this discourse and these representations regarding the expression and the communication of emotion shared in general? Are they shared by one-third, one-half of the population, or even more? Which are the motivations that common thinking alleges in favour of this discourse? What are the reasons for which one thinks that talking about emotions is useful? Do people believe that social sharing is beneficial for themselves personally and/or for their social relationships? These are the main questions that the research that is presented below wanted to address. There are indeed, to my knowledge, no scientific data about these, and it seemed useful to document these questions.

In a first study to be briefly reported below, I have profited from another data collection to ask respondents to rate two items intended to examine their attitude towards the communication of emotional experiences. In a second study, I intended to examine the beliefs of a large population of individuals with regard to the type of benefits that one could draw from the expression of emotions. So, I have created a questionnaire tackling three different types of beliefs with this respect.

2. Investigation of people's general belief about the effects of communication of emotional experiences

Do people believe and to which extent do they share the belief that communication of emotion is beneficial? Current life suggests that this belief is widely shared. Moreover, it has empirically been shown that 90 to 95% of people share their emotions with others (Rimé et al., 1992, 1998). As a consequence, most people should be expected to believe more in the beneficial effects of communication of emotion as compared to the detrimental effects of communication of emotion. For these reasons, it was expected that a vast majority of people would believe in the beneficial effects of communication of emotion.

Two studies reported elsewhere (Zech & Rimé, 1999; see Chapter 8 and 9) gave the opportunity to investigate people's beliefs about communication of emotion. In these studies, a total of 512 psychology students (429 females and 83 males) enrolled in advanced classes on emotion each interviewed two of their relatives. Thus, a total 1024 participants were interviewed (672 women and 352 men). Participants completed the data on their beliefs about communication of emotion at home before the interview. Participants' age ranged from 15 to 90 years ($M = 27.29$, $SD = 11.60$). A majority of them were students (62%). Twenty-eight percent of the participants were employed people. The remain of the sample were unemployed people (5%), house keepers (3%), and retired people (2%). The vast majority of participants (88%) had education beyond the high school level (> 12 years of education).

A first question asked participants to rate the extent to which they believe that talking about an emotional event is helpful. As can be seen in Figure 2.1, 79% of the sample reported that they believed that talking helps. Only 9% did not believe that talking about an emotional experience is helpful.

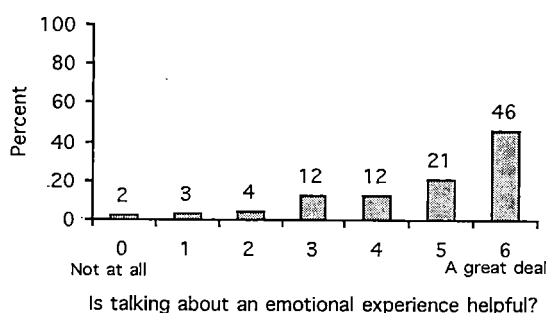


Figure 2.1 *Percentage of People's Belief that Talking about an Emotional Experience is Helpful (N = 1024)*

In a second question, participants were asked how far they believe that talking about one of their emotional experiences to someone they trust is relieving for them. As can be seen in Figure 2.2, 89% of the participants reported that they agreed with this proposition and a majority of them (58%) completely agreed with it (rated 6 = *A great deal*). Only 5% disagreed with the item.

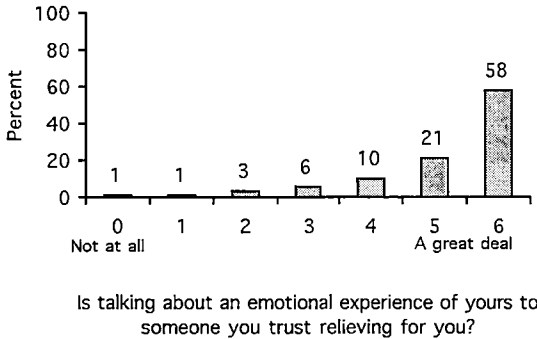


Figure 2.2 Percentage of People's Belief that Talking about an Emotional Experience to Someone They Trust is Relieving ($N = 1024$)

Thus, as expected, a vast majority of lay people believe that "talking helps" and that "it is relieving". The belief that communication of emotion is beneficial is widely shared among lay people. The question then arises which are the reasons people give to propose that communication of emotion would be beneficial. A second study investigated this question.

3. Investigation of the beliefs about intrapersonal and interpersonal benefits

People may believe that communication of emotion is beneficial for their own personal functioning and health and thus for *intrapersonal reasons*. To illustrate, intrapersonal benefits of communication of emotion may involve the view that communication of emotion is an important coping strategy that helps people to deal with emotional events (e.g., Lazarus & Folkman, 1984). People may also believe it to be beneficial for interpersonal or social relationships and thus for *interpersonal reasons*. To illustrate, communication of emotion may be seen as a privileged method for the enhancement of interpersonal relationships, social integration, and affiliation after an emotional event (Rimé et al., 1998). In addition to these intra- and interpersonal benefits of communication of emotion, there are also reasons for which people may believe that sharing one's emotions has rather *detrimental effects*. Indeed, communication of emotion may reactivate emotions. It may also lead to the loss of independence or personal boundaries and elicit negative feedback from the listener (A. E. Kelly & McKillop, 1996). These detrimental effects may thus be seen as reasons for not sharing an emotional event.

A questionnaire was constructed in which 29 questions assessed on 5-point Likert scales: (1) *the belief about intrapersonal benefits of communication of emotion* (e.g., "Talking about an emotional event allows to know oneself better"; "Talking about an emotional event helps in coping better with one's emotions"); (2) *the belief about interpersonal benefits of communication of emotion* (e.g., "Talking about an emotional event allows to find company"; "When one talks about an emotional event, one attracts the other's sympathy"); and (3) *the belief about detrimental effects of communication of emotion* (e.g., "Keeping an emotional event secret allows to avoid being rejected by others"; "Talking about one's emotions to others makes you vulnerable").

Potential participants were contacted in classrooms, shared student housing, and libraries on the campus of the University of Louvain at Louvain-la-Neuve (Belgium). They were asked to offer a few minutes of their time to complete a questionnaire on communication of emotion. Acceptance rate was very high (about 95%). Each questionnaire was immediately collected. A total of 373 adults (156 men and 217 women), with a mean age of 23.23 years ($SD = 7.48$; min. = 18; max. = 59) answered the questionnaire on their beliefs about communication of emotion. Respondents were mainly students of various departments and schools of the University of Louvain (92%). Other respondents were employed people (7%) and unemployed people (1%). Cronbach's alpha coefficients yielded acceptable levels (respectively for intrapersonal benefits of communication of emotion, interpersonal benefits of communication of emotion, and detrimental effects of communication, .80, .71, and .77) and averaged scores were thus computed.

As can be seen in Figure 2.3, results revealed that 77% of the participants reported believing in the intrapersonal benefits of communication of emotion. Only 3% did not believe that socially sharing an emotion was beneficial for intrapersonal reasons. With regard to interpersonal effects of communication of emotion, only 35% of the participants believed in its beneficial effects and 55% of them were inconclusive, rating the middle of the scale (3). Finally, a majority of respondents (68%) reported not believing in the detrimental effects of communication. Only 4% agreed that communication had detrimental effects.

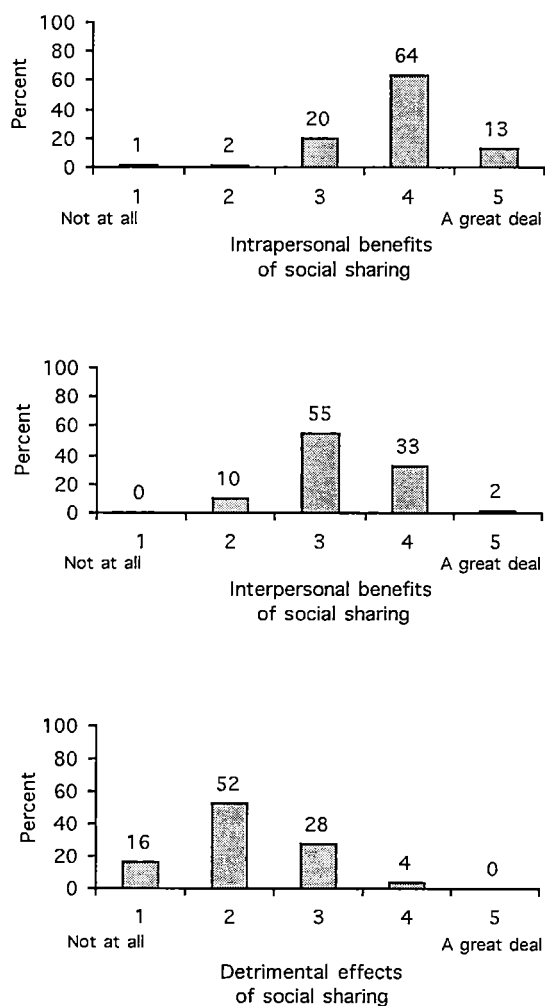


Figure 2.3 *Percentage of People's Beliefs about Intrapersonal and Interpersonal Benefits of Communication and about Detrimental Effects of Communication (N = 373)*

4. Conclusions

It was found that a dominant conception about the effects of communication of emotion exists among lay people. The presented studies showed that about 80% of people share the belief that talking helps and that it is beneficial. In particular, they endorse the view that it is beneficial for themselves personally. In other words, people strongly believe it will help them to recover from the emotional event or to cope with it. They believe that it is beneficial to their health to share their emotions and that it allows to clarify things. They believe less that socially sharing their emotions will unavoidably lead to interpersonal benefits. In other words, they might not expect it to lead systematically to the sympathy of the others or to comforting words and acts. This is consistent with research conducted on social support. Indeed, it has been shown that people either do not always receive social support from their social relationships or that, even when people receive social support, it may not always be perceived as helpful (e.g., Dakof & Taylor, 1990; Lehman, Ellard, & Wortman, 1986; Wortman & Lehman, 1985). People may not always be available or may react in ways that is perceived as unhelpful (e.g., rejection, withdrawal). There are also social constraints to the communication of emotional experiences (e.g., Pennebaker, 1993a). Research conducted by Pennebaker and Harber (1993) has shown that, just after an emotional event, people are allowed to share their emotions. But later on, recipients frequently no longer want to hear about the emotional event and the emotionalised person is rather expected to stop disclosing his or her emotions. Interpersonal or social factors may thus lead to reduce the belief about interpersonal benefits of the communication of emotional experiences.

It was also found that people do not believe in the detrimental effects of the communication of emotion. Thus, even if people do not strongly believe that interpersonal benefits will occur, they believe that communicating emotions will not generally harm them.

Chapter 3. Empirical observations about the effects of communication of emotions: Literature search

1. Introduction

In the previous chapters, I have shown that an important number of investigations had demonstrated the strong propensity individuals have to talk repetitively about the emotional experiences they have gone through. I have also shown that an enormous consensus exists among lay people in favour of the beliefs that talking about experiences is beneficial for health and for well-being in general. It was seen that the beliefs in the reverse direction were on the contrary not generally endorsed by common sense. In sum, it was shown that people abundantly talk about their emotions and that, in addition, they share very good reasons to do so.

In the following chapters, the question that is raised concerns the *actual* effects of the communication of emotional experiences. Does talking or writing about emotions really make people "feel good"? Is it for example possible to show that someone who has communicated an emotional experience feels subsequently relieved? Are there objective markers that indicate that the emotionality is reduced after the communication as compared to before? What happens in the long term? Does talking or writing about one's emotional experiences regularly give advantages with regard to the evolution of physical health? Do the benefits of this communication constitute a cultural myth that common sense willingly shares in the Western world? Or on the contrary, is it possible to show objective effects of such communication?

Here are some of the questions that can be raised regarding the consequences of the communication of emotion. The empirical literature has remained almost completely silent on this topic during most of the elapsed Century. However, during the last two decades, an important scientific interest on this topic has begun to develop. This interest is mainly due to the research undertaken in the United States by James Pennebaker on what he has termed "disclosure". The purpose of the following pages will be to review the empirical literature that is now available in this field and to proceed with a systematic summary of the facts and observations.

In the present chapter, I will first survey the research and basic concepts on which this literature has been based. The point is thus to briefly present James Pennebaker's research. Then, I will start a literature review aimed at identifying the scope of this research and attempt to answer the question posed above. I will particularly examine the theoretical bases on which this

research is based by systematically reviewing citations. This last step will prepare to Chapter 4 in which I will fully undertake the systematic review of the results of this literature.

2. James Pennebaker's research

The theoretical rationale for the original studies on the effects of communication of emotion relied on Pennebaker's inhibition theory (Pennebaker, 1985, 1989, 1990, 1993b). Pennebaker postulated that when individuals face a traumatic or emotional event, they normally tend to express the emotions they are feeling. Although many traumatic or emotional events are socially acceptable and may thus be shared with others with the expectation of receiving love and affection, some events are thought to be less socially acceptable and thus shared with others to a lesser extent or not shared at all. Examples of events that are socially acceptable are death of a loved one or childbirth. Examples of events that are socially unacceptable are sexual abuse, incest, or commitment of serious crime (Pennebaker, 1985). Inhibition theory holds that the inhibition of one's thoughts, feelings, or overt behaviours is a form of psychological and physiological work. Inhibition is conceived as the "act of restraining a given behaviour that would normally occur" (Pennebaker, 1985, p. 84). Thus, when individuals actively inhibit talking about an important experience, it requires effort.

Inhibition is postulated to lead to short-term increases in autonomic nervous system activity (i.e., increases in skin conductance, heart rate, and blood pressure). This physiological activity is seen as serving as a cumulative low-level stressor which leads in the long run to physical illness (Pennebaker, 1985). This hypothesis has its origin in two main interests that have occupied Pennebaker. First, beginning in the late '70s, Pennebaker was interested in what happens to people when they talk about crimes they may or may not have committed. Lie detection or polygraph examinations assume that when suspects try to deceive their interrogators, their autonomic activity levels will increase relative to when they tell the truth. When individuals are required to deceive others about their feelings or attitudes, a number of expressive behaviours (gaze, smiling) have been found to decrease in frequency (cf. Pennebaker & Chew, 1985). Pennebaker (1985) also noted that polygraph examinations bring about confessions. Indeed, when deceptive suspects are confronted with various questions that provoked increased biological responses in them, they often contradict their earlier stories. If they are confronted with these contradictions, they are likely to ultimately break down and confess to the crime. After confession, their autonomic levels have been found to dramatically decrease.

Second, Pennebaker was interested in psychosomatic research and processes. Psychosomatic models had proposed that stresses can cause or exacerbate psychosomatic processes, thereby increasing the risk of stress-related illnesses, such as heart disease, cancer, or ulcers. He then started collecting data on the physical after-effects of traumas. A first survey which was conducted on 716 female undergraduates (Pennebaker & Hoover, 1985, "Initial

survey") indicated that those who had experienced a sexual trauma were more likely to report numerous physical symptoms. A second survey (Pennebaker & Hoover, 1985, "Psychology Today Sample") involved a random sample of 2,020 respondents (65% of women). Findings again indicated that those who had experienced childhood sexual traumas were more likely than those who had not to report various somatic diseases such as ulcers, infections, or heart problems. A third survey conducted on 200 employees of a large Texan company also supported that childhood trauma predicted more illness rates and physician visits (Pennebaker & Susman, 1988, "Corporate Sample"). In addition, people were found less likely to talk about parental divorce, sexual trauma, and violence than about the death of a family member. Death appeared to be more socially acceptable than a sexual trauma and thus something that a child could talk about with others. Thus, it seemed clear that socially unacceptable traumas influenced long-term health. In a fourth survey on 75 students, traumatic experiences were again found associated with health problems for many years following the event. The fact of not confiding them added predictive power, suggesting that the inhibition of the expression of traumatic experiences leads to physical illness (Pennebaker & Hoover, 1985, "Medical Psychology Class Survey").

Pennebaker then postulated that some issues are so painful that people deny or inhibit the event-related thoughts or the expression of the event-related feelings. Such inhibitions would conflict with people's tendency to express their feelings and should thus increase the risk of stress-related illnesses. In 1984, Pennebaker and O'Heeron published a study in which widows who had lost their partner due to suicide, which according to the authors represents a socially unacceptable death, were expected to be more inhibited from talking about the death and to exhibit more health problems compared to spouses who had lost their partner due to automobile accidents which were considered as socially acceptable deaths. Contrary to expectations, spouses of suicides were slightly healthier than spouses of accidental deaths. In fact, the most important predictor of health was whether they had talked about the death or not. Overall, the more widows had talked to others about the death of their spouse, the fewer health problems they reported. Not talking with others about their spouse's death represented a health risk.

From there on, Pennebaker developed his interest in knowing *why would talking cure*. In 1986, Pennebaker and Beall created an *experimental paradigm* in which participants either wrote about stressful or traumatic events in their lives, or about trivial events (control group) for 15 minutes on 4 consecutive days. This writing paradigm or variations of it were used in seven other studies conducted in his laboratory. In the typical paradigm, participants, who are tested individually, are randomly assigned to one of two or more groups. All writing groups are asked to write about assigned topics for 3 to 5 consecutive days, 15 to 30 min each day. Writing is generally done in the laboratory with no feedback given. Once participants enter the writing cubicles, they are told to write continuously without regard to spelling, grammar, sentence structure, etc. Although participants are encouraged to turn in their essays, anonymity

and confidentiality are assured. Participants assigned to the control conditions are typically asked to write about superficial topics, such as their plans for the day, or the description of the clothes they are wearing in a non-emotional way. The standard instructions for those assigned to the experimental group require participants to write about the most upsetting emotional experience of their entire life. In their writing, they are encouraged to really let go and explore their very deepest thoughts and feelings about this experience. They may link their experience to their childhood, their relationships with their parents, their close relationships with others, or their career. They may also tie it into who they have been in the past, who they would like to be in the future, or who they are now. They can write about the same emotional upheaval on all consecutive days or about different emotional experiences each day. Their topic of disclosure can be a specific trauma or simply major conflicts or stressors in their life. They are also encouraged to address issues that they have not talked about in detail to others.

Variations of the initial paradigm have involved writing about specific events such as asking first year college students to write about their deepest thoughts and feelings about coming to college (Pennebaker, Colder, & Sharp, 1990) or asking unemployed professionals to write about their deepest thoughts and feelings about losing their jobs (Spera, Buhrfeind, & Pennebaker, 1994). Studies have successively assessed various components of physical health and psychological functioning. For example, Pennebaker and Beall (1986) assessed physician visits that participants made to the university health centre, Pennebaker, Hughes, and O'Heeron (1987) assessed autonomous activity changes, Pennebaker, Kiecolt-Glaser, and Glaser (1988) changes in immune functioning, and Francis and Pennebaker (1992) absenteeism at work.

It is now usually acknowledged that "writing about one's thoughts and feelings regarding stressful events for up to 20 min on each of several days can reduce physician visits, enhance immunocompetence, decrease absenteeism, increase the likelihood of obtaining new employment among individuals who recently lost their jobs, improve grade point averages among first-year college students" (Cameron & Nicholls, 1998, p. 84), and improve "psychological health indicated by higher self-reports of general well-being" (Francis & Pennebaker, 1992, p. 281). Thus, beneficial effects of communication of emotion go beyond physical health effects. It is usually recognised that the communication of emotion also leads to beneficial psychological effects.

Recently, Pennebaker has suggested that the benefits of talking about a trauma may go beyond *overcoming inhibition* because the overall psychological benefits of disclosing emotional experiences may not only be explained by the inhibition model (Pennebaker & Francis, 1996). Pennebaker and colleagues have begun to point to the critical role of *cognitive changes* that are brought by writing (Pennebaker, 1993b). It was proposed that *cognitive assimilation* of the emotional event was a complementary mechanism explaining the beneficial effects of the communication of emotion. They have started analysing the language that participants use in writing about emotional experiences. They found that people who are able to construct a coherent story of a trauma over the days of writing are the ones who benefit.

Indeed, an increase in both causal and insight words over the course of writing was found strongly associated with improved health (Pennebaker, Mayne, & Francis, 1997).

3. The literature search

1. Scope of the literature search

The purpose of this empirical review is to examine whether the communication of emotional experiences is beneficial to the person who communicates. The scope of the review is restricted to nonclinical populations. Thus, it does not cover the effectiveness of psychotherapeutic interventions which may have involved the communication of emotional experiences (e.g., psychotherapeutic interventions on PTSD or phobia patients were excluded). One could have included such studies. However, even when psychotherapies and counselling programs involve the communication of emotional experiences, they never use it as the *sole* technique for improving the patient's health. Psychotherapies and counselling programs *always* use other ingredients or techniques. Depending on different schools of psychotherapy, various additional techniques are known to be used (Lambert & Bergin, 1994). For example, psychoanalysis uses the technique of free association, interpretation, and the analysis of transference. Psychodrama uses role playing. Cognitive and behaviour therapy focuses on thought stopping, paradoxical intentions, behaviour conditioning, and the correction of false beliefs. Thus, in psychotherapy, the communication of emotional experiences is not the *exclusive* component involved.

In addition, processes at hand when communicating emotional experiences *to a psychotherapist* may be quite different as compared to processes at hand when communicating emotional experiences *to an intimate person or on paper*. As Lambert and Bergin (1994) have pointed, various "common factors" across treatments are accounting for a substantial amount of improvement found in psychotherapy patients. Some of these factors are *specific* to the patient-therapist relationship or to the therapist's characteristics. For example, factors common across therapies which are associated with positive outcomes but are specific to therapies are the identification with the therapist, the therapist expertness, the therapist warmth, respect, empathy, acceptance, and genuineness (Lambert & Bergin, 1994). In other words, the therapist is viewed as an essential agent in promoting change. Other factors differentiate psychotherapy and the communication of emotion to intimates or written communication. For example, psychotherapy is based on a paid relationship and the therapist/patient relationship is expected to stop when treatment ends. This is not the case in common communication of emotional experiences to intimates or on paper. These differences will be discussed in more details when implications for clinical psychology will be discussed (see *General discussion and conclusions*). If intervention studies had attempted to isolate and investigate the supposed "active" ingredient of the communication of emotion in its own, I could have included such

research. However, as far as I know, no such study exists yet. For all these reasons, the examination of the effectiveness of psychotherapies do not allow one to evaluate the *unique* impact of communication of emotions. In other words, including intervention studies would not have allowed to conclude whether the communication of emotional experience is *per se* beneficial or not. Intervention studies were thus excluded from this literature review.

2. Beginning of the investigations on the effects of communication of emotions

The investigation of the effects of communication of emotions in nonclinical populations has only recently been investigated under controlled conditions. To my knowledge, the first controlled study investigating these effects on healthy participants dates of only two decades (Berger, 1978). This article was published in *Journal of Counseling Psychology*. The author was interested in how people may be helped to deal with their problems and concerns. In particular, he wanted to know whether talking in a rationale problem-solving way would be more helpful than talking about the feelings and emotions associated to problems and concerns. Second, he wondered whether either or both ways of talking would be superior to a method which would simply allow people to verbalise whatever they want. One-hundred female college students were asked to talk into a tape recorder about concerns such as their school experience, experiences with their parents or family members, experiences with people of either or both sexes, and the most difficult problem or concern in their life. They were assigned to one of four disclosure conditions. In a first condition, they were asked to express all of their positive and negative feelings. In a second condition, they were asked to analyse their problems in a logical, step-by-step manner, that is "to state the problem, to state their typical solution to the problem, and to try to come up with new and creative solutions to the problem" (Berger, 1978, p. 508). In a third condition, they were told to verbalise whatever aspect of their problems and concerns they found relevant. While in each of these three conditions participants were told that talking in such a way was a valuable thing to do, in the fourth condition, they received no instructions and no suggestion that talking was a valuable way to deal with their problems. After three weeks, participants were mailed a questionnaire assessing their satisfaction with the session (e.g., "how comfortable were you in talking about your concerns and problems in the way you did?"). They were also asked questions related to counselling sessions which they might undertake (e.g., "how likely would you be to see a counsellor who primarily asked you to talk in a way similar to the way you talked here?"). Significant results were not frequent (only 4 out of a minimum of 16 questions were significant and reported) and ratings of satisfaction with the procedure were found unrelated to type of instructions.

Since this first study, research on the effects of communication of emotions in normal participants has developed. Next, the procedure that was used for selecting the adequate literature is presented.

3. Technique for the literature search

Relevant articles were located through a computer search in PsycLIT data base (American Psychological Association) and Current Contents data base (Institute for Scientific Information). Various permutations of keywords were used from the following: emotion, expression, inhibition, disclosure, self-disclosure, verbalisation, health, well-being, and recovery. These articles and previous literature reviews on the effects of communication of emotion (Pennebaker, 1997; Smyth, 1998) were used to perform a backward search of the references until no new articles were found. This generated **52 studies** on the impact of communication of emotion in nonclinical populations. The studies were then examined to determine if they met the necessary inclusion criteria for quantification of effects.

4. Inclusion and exclusion criteria

Each study had to meet the five following criteria. First, it had to involve an *experimental manipulation* of communication of emotion so that inferential results could be drawn. Second, experimental subjects had to write or talk about a *past emotional or traumatic event* in at least one condition, while control subjects had to write or talk about *neutral topics*. Studies contrasting communication of emotion with a "no intervention" control condition were not taken into account. One could argue that a design involving a no intervention control condition would be sufficient to verify whether the communication of emotions is beneficial for health. This is, however, partially correct. Indeed, the use of a control group with *no communication at all* allows to control for an observed improvement which would be due to events occurring outside the experimental settings or to the course of time alone. Thus, a no intervention condition permits to control for the improvement due to *spontaneous remission*. However, if participants are assigned to a condition not receiving instructions, then finding that they are in a no-intervention group is likely to have a considerable effect on them (disappointment for example). Being assigned to a no-intervention group is also more likely to be experienced as a group who have been "rejected" for intervention. Further, participants in this position may act on their own accord and begin discuss concerns with friends, that is, seek out natural support systems. The underlying point here is that a "no-intervention" group is not as simple to implement as it sounds and, more importantly, there are inadequacies in terms of what it is actually controlling which undermines the scientific yield of the design.

A refinement of the no communication control group would be a *"waiting-list control group"* in which participants in the experimental group talk or write about their emotions while a comparison group of participants are placed on a waiting list and only after the experimental group has completed treatment would the control group then receive the instructions of communication of emotion. Another design which involves a *"placebo group"* is, however,

even better according to the hypothesis that is postulated here. This design aims to provide the non-experimental group with a control condition for what has been generally termed "*non-specific*" or "*common*" factors. In other words, the placebo group is receiving the general factors associated with receiving a treatment but not the technically specific ones. Similarly to no instruction and waiting-list control groups, placebo conditions are likely to be perceived as something "less" than the experimental condition. However, valid placebo control groups are those who employ a component control condition in which the placebo is designed *specifically* to exclude the component of the experimental condition which is of particular interest. Because the posed question relates to the communication of *emotions*, the best control is a control which involved the *communication of topics* but *unrelated to emotions*. This placebo control group involves, as it is the case in the experimental condition, the personal contact with the experimenter (particularly when talking, a personal contact may have beneficial effects), a time spent doing something (talking or writing rather than nothing), and the completion of a task involving cognitive and verbal processing (the participant is cognitively busy). Although these common factors may have *per se* beneficial effects, only the *specific* factor of having talked or written *about emotional topics* is expected to answer the specific posed question. For these reasons, only experimental studies with a control group involving the communication of matters unrelated to emotions (trivial) were taken into account.

The third selection criteria involved the exclusion of studies investigating the communication of *anticipated events*. Indeed, processes at hand when expecting an emotional event may be quite different as compared to processes implied when coping with *past real emotional events*. Fourth, the study had to involve *healthy participants*. The review of the literature will only focus on this type of population for homogeneity purposes. Finally, *unpublished manuscripts* were not considered because the review might then have been incomplete. *Book chapters* were also not considered because they do not include, as it is the case in reviewed empirical articles, the full description of the method and results (i.e., participants, procedure, operationalisation of the dependent variables, and statistics).

5. Studies and articles included in the review of the literature

Following these criteria, 34 of the 52 studies were excluded. Among those included in previous reviews (Pennebaker, 1997; Smyth, 1998) and excluded here were 2 unpublished dissertations (Hughes, 1993; O'Heeron, 1992), 2 unpublished manuscripts (Krantz & Pennebaker, 1996; Richards, Pennebaker, & Beal, 1995), and 2 book chapters (Dominguez et al., 1995; Rimé, 1995). In addition, 3 descriptive studies¹, 2 correlative studies², and 5 quasi-

¹ Lange, 1996; L'Abate, 1991; Mann & Delon, 1995.

² Cole, Kemeny, & Taylor, 1997; Cole, Kemeny, Taylor, & Visscher, 1996; Hughes, Uhlmann, & Pennebaker, 1994; Laurenceau, Barrett, & Pietromonaco, 1998; Pennebaker, Barger, & Tiebout, 1989; Pennebaker, Mayne,

experimental investigations³, (i.e., with no experimental manipulation but separate groups were created out of natural variation in communication) were excluded. Among the 28 remaining experimental investigations, two studies were excluded because they involved chronic illness patients (J. E. Kelly, Lumley, & Leisen, 1997; Smyth, Stone, Hurewitz, & Kaell, 1999), and two were excluded because they involved the anticipation of an emotional event rather than a past emotional event (Costanza, Derlaga, & Winstead, 1988; Lepore, 1997). Seven additional studies were excluded because they lacked an adequate trivial control group. Three of these studies had a "no communication" control group⁴. In the four other studies, "control" participants were instructed to share traumatic or emotional matters such as hypothetical traumatic events (Christensen et al., 1996; Christensen & Smith, 1993), only facts related to emotional events (Mendolia & Kleck, 1993, Study 2), or emotional events with no specific instructions (Berger, 1978). Thus, following the criteria, 18 studies found in 17 articles were included for use in this review.

As can be seen in Table 3.1, these 17 articles have been published from 1986 to 1998. Eight of them have been published or co-authored by James Pennebaker from the Southern Methodist University (Texas, now at the University of Texas at Austin), three of them by Edward Murray and his colleagues and one by Brian Esterling and his colleagues from the University of Miami (Florida), and two of them by Melanie Greenberg and her colleagues from the State University of New York at Stony Brook. Thus, *78% of the studies that investigated the effects of communication of emotion were conducted in three laboratories*. With the exception of two studies conducted at the University of Auckland (New Zealand), all studies have been conducted in the United States of America. It is thus worth noting that none of the controlled studies has been conducted in Europe, Asia, Africa, or South America. Most of the articles have been published in journals with high acceptance standards such as the *Journal of Personality and Social Psychology* (5 articles) and the *Journal of Consulting and Clinical Psychology* (3 articles).

& Francis, 1997; Pennebaker & O'Heeron, 1984; Schoutrop, Lange, Hanewald, Duurland, & Bermond, 1997; Suedfeld & Pennebaker, 1997.

³ Esterling, Antoni, Kumar, & Schneiderman, 1990; Finkenauer & Rimé, 1998a, 1998b (Study 1 and 2); Pennebaker & Susman, 1988.

⁴ Lutgendorf, Antoni, Kumar, & Schneiderman, 1994; Pyszczynski, Greenberg, Solomon, Sideris, & Stubing, 1993 (Study 1 and 2).

Table 3.1 *Description of the Articles Included in the Review of the Literature*

<i>Authorship</i>	<i>Date</i>	<i>Journal</i>	<i>Location of study</i>
1. Pennebaker & Beall	1986	J. of Abnormal Psychology	Southern Methodist University
2. Pennebaker et al.	1987	J. of Pers. and Soc. Psychology	Southern Methodist University
3. Pennebaker et al.	1988	J. of Consult. and Clin. Psycho.	Southern Methodist University
4. Pennebaker et al.	1990	J. of Pers. and Soc. Psychology	Southern Methodist University
5. Francis & Pennebaker	1992	Amer. J. of Health Promotion	Southern Methodist University
6. Spera et al.	1994	Academy of Management J.	Southern Methodist University
7. Petrie et al.	1995	J. of Consult. and Clin. Psycho.	University of Auckland
8. Pennebaker & Francis	1996	Cognition and Emotion	Southern Methodist University
9. Murray et al.	1989	J. of Soc. and Clin. Psychology	University of Miami
10. Donnelly & Murray	1991	J. of Soc. and Clin. Psychology	University of Miami
11. Murray & Segal	1994	J. of Traumatic Stress	University of Miami
12. Esterling et al.	1994	J. of Pers. and Soc. Psychology	University of Miami
13. Greenberg & Stone	1992	J. Pers. and Soc. Psychology	State University of New York at Stony Brook
14. Greenberg et al.	1996	Psychosom. Medicine	State University of New York at Stony Brook
15. Knapp et al.	1992	J. of Pers. and Soc. Psychology	Boston University
16. Mendolia & Kleck	1993	J. of Consult. and Clin. Psycho.	Dartmouth College
17. Cameron & Nicholls	1998	Health Psychology	University of Auckland

4. Bases of the published studies

In order to investigate the bases on which current empirical literature grounded the research on the effects of communication of emotion, the introduction sections of these 17 articles were examined. As can be seen in Table 3.2, a total of 356 references were quoted across the introduction sections of the 17 reviewed articles. The number of references introducing the articles varied from a minimum of 10 references in Melanie Greenberg and Stone (1992) and Murray et al. (1989) to a maximum of 35 references in Knapp et al. (1992).

Literature was most frequently quoted for *methodological purposes* (90 references; 25% of the total number of references). A notable example is the introduction section of the article by Knapp et al. (1992). This article only presented literature in this type of references (35 references). The authors mainly discussed various methods of emotion induction (e.g., mental arithmetic task, passive exposure to emotional films or videotapes, and hypnotic induction). Among others, the recall and discussion of experienced crucial stressful life events was considered as a good means to induce emotions. In contrast to other articles included in this review, this article discussed the effects of communication of emotion in order to propose a method of emotional induction, rather than to investigate a way for coping with emotional

events. If one excludes this article in order to examine the arguments that are presented for investigating the effects of communication of emotion in coping with emotional or traumatic events, only 55 references remain in this category which can then be considered as a less important category of references (17% of the remaining article's references).

Table 3.2 *Number of References Quoted in the Introduction Section of the Reviewed Articles by Category*

<i>Article</i>	<i>Pennebaker</i>	<i>Other authors</i>	<i>Coping and Emotion</i>	<i>Psychotherapy</i>	<i>Method</i>	<i>Total</i>
Pennebaker & Beall (1986)	4	1	5	6		16
Pennebaker et al. (1987)	5	13		2	3	23
Pennebaker et al. (1988)	2	4	5	5	9	25
Pennebaker et al. (1990)	5	8	9	1	7	30
Francis & Pennebaker (1992)	4	8	2			14
Spera et al. (1994)	8	3	2		3	16
Petrie et al. (1995)	7	8			4	19
Pennebaker & Francis (1996)	10	8	13		1	32
Murray et al. (1989)	4	1		5		10
Donnelly & Murray (1991)	3	1	3	4	1	12
Murray & Segal (1994)	4	2	6	8	1	21
Esterling et al. (1994)	7	1		2	13	23
Greenberg & Stone (1992)	6	3		1		10
Greenberg et al. (1996)	7	4	5	4	2	22
Knapp et al. (1992)					35	35
Mendolia & Kleck (1993)	2		22			24
Cameron & Nicholls (1998)	9	1	3		11	24
Total	87 (24%)	66 (19%)	75 (21%)	38 (11%)	90 (25%)	356

Note. The category "Pennebaker" represents references to Pennebaker et al.'s theory and studies on disclosure and inhibition of emotion. The "Other authors" category represents references to theories and studies on the expression or inhibition of emotion that are not authored by Pennebaker. The category "Coping and Emotion" represents references to coping models and emotion theories and studies. The category "Psychotherapy" represents references to psychotherapies or psychotherapeutic techniques that involve the communication of emotion. The category "Method" represents references that were quoted for methodological purposes.

Then, the most widely and consistently quoted literature for conducting studies on the effects of communication of emotion referred to *Pennebaker and colleagues' work on the inhibition and disclosure of emotion*, with 87 references in the remaining 16 articles (e.g., Pennebaker & Beall, 1986; Pennebaker et al., 1990). Pennebaker et al.'s work represented 24% of all references that were quoted and every article has quoted Pennebaker et al.'s work. One could consider that this would be due to the elevated number of articles that were authored

by Pennebaker and colleagues. However, 45 such references were quoted in the 8 articles written by Pennebaker et al., whereas 42 were in the 8 other articles. Pennebaker and colleagues' work is thus a major reference in the field of communication of emotion. Among these 87 references, 66 referred to the empirical research initiated by James Pennebaker and his associates on the effects of inhibition and disclosure of emotional or traumatic events (in 16 articles) and 21 to his theoretical work (in 14 articles).

The second most frequent citations are references related to *coping models* (e.g., Horowitz, 1976; Epstein, 1984; Silver & Wortman, 1980), *emotion theories* (e.g., Frijda, 1987; Leventhal, 1984; Tomkins, 1962) and the related research (75 references; 21% of all references). These were quoted in 11 articles. The third most frequently quoted references are theories and research on the *inhibition and expression of emotion by other authors than Pennebaker* and colleagues (66 references; e.g., Buck, 1984; Derogatis, Abeloff, & Melisaratos, 1979; Jourard, 1971; Riskind & Gotay, 1982; 19% of the total number of references). Although these references were quoted less frequently than references to coping and emotions, they were more consistently quoted in the articles (in 15 articles). Indeed, only Mendolia and Kleck (1993) did not use this type of references. About one third of these involved the summary of previous investigations on the effects of communication of emotion by authors different than Pennebaker and colleagues (23 references, in 11 articles; e.g., Donnelly & Murray, 1991; M. A. Greenberg & Stone, 1992; Murray et al., 1989). Finally, 38 references (11% of all references) were quoted in 10 articles to support the idea that *psychotherapies* of diverse theoretical orientations commonly involve the communication of emotions as a technique and that it plays an important role in psychotherapy and psychotherapeutic effectiveness (e.g., Nichols & Efran, 1985; L. S. Greenberg & Safran, 1987). More than half of these references referred to the psychoanalytic concept of "catharsis" (21 references, in 9 articles; e.g., Breuer & Freud, 1895/1966; Nichols & Zax, 1977; Scheff, 1979). The other citations referred to other theoretical orientations (for example to Gestalt therapy, L. S. Greenberg & Webster, 1982 quoted in Murray & Segal, 1994). Because Murray and colleagues' were interested in investigating the differences between psychotherapy and written communication of emotion, their articles are characteristic examples that used this type of references (Donnelly & Murray, 1991; Murray et al., 1989).

In sum, most of the literature that was quoted in the introduction sections of the reviewed articles proposed that inhibition of emotions over long periods of time is detrimental to physical health and psychological functioning. On the contrary, the expression or communication of emotion was rather predicted to improve people's health and psychological functioning. Although these hypotheses were based on a variety of theoretical and empirical work, they were often grounded on the research conducted by only one author, namely James Pennebaker, and his colleagues. As can be seen in Figure 3.1, Pennebaker and colleagues' references represented alone one-third of the scientific references quoted in the introduction

sections of the reviewed articles. Almost every article of the literature review has *explicitly, consistently, and extensively* referred to the inhibition theory developed by Pennebaker (1985, 1993b) or to his empirical work. Pennebaker is thus a major reference in the field because he is the only who (1) has proposed a theory explaining the beneficial effects of the communication of emotion and the detrimental effects of the inhibition of emotional experiences and (2) has empirically tested these theoretical propositions. In addition, most authors used a variation of the brief written emotional expression task that he developed (Pennebaker & Beall, 1986).

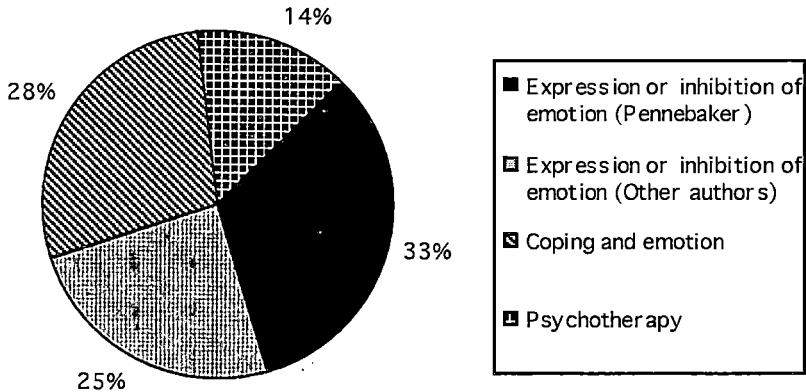


Figure 3.1 *Proportion of Theoretical Arguments Quoted in the Introduction Sections of the Empirical Reviewed Studies*

5. Conclusions

The question was raised as to whether communicating emotional experiences *really* helps. Indeed, if the communication of emotion *actually* leads to beneficial effects, then people would have all reasons to be inclined to share their emotions. The empirical literature was selected so that one could most accurately answer this question. Examination of this literature has shown that most of the articles have explicitly referred to the inhibition theory developed by Pennebaker (1985, 1993b) or to his empirical work. In fact, most authors used a variation of the brief written emotional expression task that he developed (Pennebaker & Beall, 1986). Pennebaker is also the only author who has both proposed a theory explaining the effects of the inhibition and expression of emotion *and* empirically tested its hypotheses. Consistent with the hypothesis that people share their emotions because it is beneficial to them, his theory and research have suggested that the communication of emotions leads to overall beneficial effects, on both people's physical and psychological health. In the next chapter, the results of these studies will be reviewed to examine whether such conclusions are justified.

Chapter 4. Empirical observations about the effects of communication of emotions: A systematic literature review

1. Introduction

In Chapter 2, it was shown that lay people believe that the communication of past emotional or traumatic events is beneficial for their functioning. Scientific views also propose that the communication of emotions leads to overall beneficial effects for the physical and psychological health of the person. The question is, however, raised as to whether *the communication of emotions really helps?* The purpose of the present chapter is to review the evidence on the effects of the oral and written communication of emotional or traumatic events. To answer this question, studies were selected according to *precise criteria*. As mentioned earlier in Chapter 3, selection criteria mainly involve the use of experimental investigations contrasting the communication of emotion and the communication of topics unrelated to emotions (trivial). Psychotherapeutic interventions have also been excluded because such studies cannot test the *specific* impact of the communication of emotion. Within this scope of research, one should examine *all effects that have been reported* on all dependent variables related to health. Health is conceived as a concept involving three dimensions: physical, psychological, and social dimensions (World Health Organization [WHO], 1946). Physical health refers to the person's physical functioning. It can be evaluated subjectively as when a person reports his or her physical symptoms or illnesses (e.g., headache, flu) and objectively as when physicians assess the autonomous nervous system (e.g., heart rate, blood pressure), the immune function (e.g., lymphocyte numbers or activity), or biological measures (e.g., body weight, level of cholesterol). Psychological health refers to a person's psychological functioning. It can be evaluated with variables such as subjective well-being, self-esteem, or emotional recovery from the event. Finally, what is called "social health" refers to a person's social functioning. It can be evaluated with variables such as number of social interactions, or number of satisfactory social contacts.

A first way to answer the above question is to examine previous empirical reviews on the effects of communication of emotions. This will be presented in Section 2. It will, however, be shown that previous reviews have various shortcomings or that their scope did not fit to the question asked. Indeed, depending on the review, not all studies that tested the effects of communication of emotion have been included (e.g., studies testing the oral communication of emotion were excluded in Smyth, 1998). Some reviews included studies not allowing to draw

inferential results on the *specific* effects of communication of emotion (e.g., correlative or therapy studies included). Moreover, these reviews often did not report --or not accurately-- the direction of effects. Some also did not report the significance of effects. In some cases, the selection criteria of the studies was not reported and one does not know why some studies were included and not other ones. Of particular interest is also the need to examine whether the effects persist over time and whether beneficial effects occur on all aspects of health. This was not always the case in previous reviews. Indeed, previous reviews were mainly interested in long-term effects of the communication of emotion and discussed short-term effects *only* on distress or self-reported moods. In addition, each previous review did not include all type of dependent variables that were assessed in the studies or they did not differentiate sufficiently the type of dependent variables that were assessed. It will be shown that these two last points are of major importance.

Thus, I conducted an empirical review that has taken into account these methodological flaws. To answer the posed question, the 18 experimental studies selected in Chapter 3, with a total of 253 outcomes on the effects of oral and written communication of emotional experiences were reviewed (see Sections 3 and 4). In the present review, the question of whether there are *moderating or mediating factors through which the effects of the communication of emotion may be attenuated or enhanced* was also addressed. Seven moderating or mediating factors will be discussed in Section 5, namely the type of dependent variable, the timing of measurement, individual and cultural differences, the length and number of communication sessions, the mode of communication (written vs. oral), the type of emotional or traumatic event communicated, and the specific aspects of the emotional experience communicated (e.g., facts or feelings). Although previous reviews have discussed the influence of several of these factors, for the same reasons as those mentioned above, the shortcomings or different scope of previous reviews led me to examine these questions in a new review.

2. Past reviews of the empirical literature

Past reviews of studies testing the effects of communication of emotions usually relied on the narrative method (i.e., qualitative reviews) and were usually conducted by Pennebaker (Pennebaker, 1989, 1990, 1993b, 1997; Pennebaker & Susman, 1988). In his most recent review, Pennebaker (1997) covered 23 studies testing the effects of oral and written communication of emotions. This review included both experimental and correlative studies. These were either published in reviewed journals or in books, or unpublished manuscripts. The studies were listed according to categories of variables that had been assessed (i.e., physician visits, physiological markers, behavioural markers, and self-reports). Neither the direction of the effects was reported (i.e., whether it yielded a beneficial or detrimental health outcome), nor the timing of measurement (short- vs. long-term outcome). This review did not take into

account all possible variables related to health (e.g., natural killer cell activity, number of t-helper lymphocytes, number of basophils). The level of significance of the effects (whether the effect was significant, tended to be significant, or not significant) was not mentioned. Very few studies were reported to have failed to find a significant effect (only some were on self-reported physical symptoms and on self-reported distress). Overall conclusions were subjectively drawn. They suggested that writing or talking about emotional experiences, relative to writing about superficial topics, was (1) "painful in the days of writing" (p. 162), but was associated with (2) significant drops in physician visits from before to after writing; (3) beneficial immune effects; (4) long-term improvements in mood and in well-being; and (5) behavioural changes, such as improvements in grades, reemployment, and reduction of absenteeism. It was also concluded that "relatively few reliable changes emerge using self-reports of health-related behavior[s]" (p. 162). This review interestingly discussed various moderating variables that may account for the beneficial effects of communication (i.e., comparison of writing and talking, topic of disclosure, length or number of days of writing, actual or implied social feedback, individual differences, and educational, linguistic, or cultural effects).

On the whole, this review should be taken with caution because it does not allow the reader to evaluate the validity of the conclusions. Indeed, it included correlative studies which do not allow to draw the inferential results that are needed to answer the posed question. It also included some book chapters and unpublished manuscripts. Some dependent variables were not included in the review. More importantly, the direction and significance of the effects were mainly not reported.

Another qualitative literature review has recently been published by an author who has not empirically tested the effects of communication of emotions (Littrell, 1998). The purpose of this review was to discuss various rationales promoting the expression of emotion (Foa & Kozak, 1986; Freud, 1895/1955, 1910; L. S. Greenberg, 1993; Pennebaker, 1989, 1990) and to evaluate these in light of the empirical literature. Eighty correlative or experimental studies were included. The sampling method for selecting the reviewed studies was unexplained. The review included controlled experimental studies on the communication of emotional events in nonclinical populations such as those conducted according to Pennebaker's paradigm (16 reviewed studies). It also included (a) laboratory investigations on other expressive reactions such as aggressive behaviour (e.g., provision of shock; 20 reviewed studies) and crying (1 study); (b) studies on the verbal expression of fear towards the anticipation of a future event (1 study) and of dysphoric moods during depression (3 studies); and (c) longitudinal investigations on emotion-focused coping strategies used during naturally occurring stressors (in this case, either some emotion-focused coping subscales, or amount of naturally occurring disclosure were considered to serve as measures of emotional expression; 13 studies reviewed). Finally, it included controlled and uncontrolled outcome studies of therapies "that might reasonably be expected to evoke emotion" (p. 82), that is interventions including the

encouragement of emotional expression, interventions using systematic desensitisation or prolonged exposure techniques such as flooding (26 reviewed studies on bereaved people, rape victims, PTSD victims, and the general population). Four categories of outcomes were distinguished: (a) immediate autonomic response and immune system function, (b) subsequent thinking (e.g., evaluation of an aggressor) and affective reactions (e.g., anxiety, dysphoric mood), (c) physical health, and (d) attitude and behaviours. However, these distinctions of type of outcome were not used throughout each section of the review. No summary table of results was presented. Littrell discussed the main outcome for each study as well as outcome mediating processes that were proposed either in these studies, or in theoretical articles.

Littrell concluded that "in those studies in which emotionally aroused individuals have been induced to express their feelings, little indication is found for quicker dissipation of arousal or immediate enhancement of immune system function ... With nonclinical populations, such as those used when testing the Pennebaker paradigm, the harmful effects from revisiting emotions have not been noted. In fact, beneficial effects with the Pennebaker procedure are seen ... With clinical populations, in contrast with uncontrolled confrontation of emotion attached to past trauma, the controlled use of guided imagery in desensitization and flooding has been evaluated. Here some success is found, in fact some marked success, when working with victims of PTSD or rape who do not carry secondary diagnoses (e.g., drug abuse, alcoholism, or major depression)". (p. 94) Thus, "revisiting painful emotion has the potential to improve health and psychological functioning" (p. 96). She proposed that health promoting effects are not explained by simply reliving or reexperiencing painful emotions because attention to emotion can enhance distress. It was, however, proposed that only controlled exposures to emotions which allow to foster the restructuration of thoughts and feelings and give rise to a new response to the negative emotion-eliciting stimulus are responsible of health-promoting effects.

Littrell's review of the literature on emotional expression thus confirmed previous reviews by Pennebaker on the communication of emotions. Its scope contrasted to present dissertation's one in that (a) clinical studies were also reviewed, (b) various types of emotional expression were reviewed (without conceptual distinction or discussion), and (c) various types of emotion-eliciting situations were reviewed such as depression, past and future emotional or traumatic events, or frustration (without conceptual distinction or discussion). Within the scope of the review concerning Pennebaker's paradigm studies, no distinction between short- and long-term outcomes was presented. Also, beyond the broad distinction between physical health and attitudes and behaviours outcomes, no distinction between types of outcomes was established and all dependent variables that were considered in the respective studies were not reported. Finally, one does not know on which basis Littrell has chosen the included reviewed studies (one can doubt whether all published studies on the impact emotional expression were included).

One meta-analysis has recently been published by another author (Smyth, 1998). Its scope was to review studies using the written task developed by Pennebaker or a variant of his original task (Pennebaker & Beall, 1986). Thirteen randomised experimental studies were included. Three of these were either unpublished dissertations (Hughes, 1993; O'Heeron, 1992), or an unpublished manuscript (Richards, Pennebaker, & Beall, 1995). The review intended to assess whether "this manipulation has the potential to meaningfully affect well-being, health, or general functioning" (Smyth, 1998, p. 175). Short-term effects were evaluated only on distress which was defined by "increases in symptom reporting, negative moods, heart rate, etc." (p. 177). The review mainly considered long-term health effects (i.e., outcomes "measured at least 1 month post-writing", p. 176). Long-term outcomes were sorted according to five subtypes which were: (1) reported health, (2) psychological well-being, (3) physiological functioning, (4) general functioning, and (5) health behaviours. In this meta-analysis, results of the studies were transformed into Cohen's d effect size. "Measures were scored so that when the experimental group was superior to the control group, the effect size was in the positive direction, *regardless of whether high or low scores on the measure was desirable* [italics added]" (p. 176) Two types of effect sizes were computed: one overall effect for each study and one for each specific outcome subtype (averaged across all outcomes within outcome type and within study). Moderating variables were also included in the meta-analysis. These variables were: (1) participants characteristics (student sample or nonstudent sample; age and gender), (2) length, number, and duration of the writing sessions, (3) outcome type (see above), and (4) publication status (published or unpublished).

This meta-analysis confirmed previous narrative reviews and concluded that the writing task developed by Pennebaker leads to significantly improved long-term overall health outcomes in healthy participants. Smyth (1998) found significant long-term improved health effects in reported physical health, psychological well-being, physiological functioning, and general functioning. No impact was found on health behaviours. The emotional writing task was also found to induce short-term distress.

Although this review tested the effects of *written* communication of emotion, it did not include studies that tested the effects of *oral* communication of emotion, which are also considered in this dissertation. In addition, it did not include all possible short-term effects, such as perceived benefits created by the participating in the experiment and short-term immune responses. It also did not include *controlled studies conducted by Murray and colleagues* who, similarly to other studies reviewed in Smyth's meta-analysis, tested the difference between one emotional writing condition and one trivial condition (Donnelly & Murray, 1991; Murray, Lamnin, & Carver, 1989; Murray & Segal, 1994). Moreover, one does not know why Smyth included only three *unpublished studies* and not other ones. More importantly, one does not know why the positive effects were recorded according to higher *scores* in the experimental group as compared to the control group rather than according to higher *health benefits* (e.g.,

having higher scores in negative moods in the experimental group is considered in Smyth's review as a positive health outcome rather than a detrimental health outcome).

Thus, previous empirical reviews concluded that the communication of emotion leads to overall beneficial effects on physical health and psychological functioning. These results are consistent with lay people's beliefs as well as with scientific views on the effects of the communication of emotions. However, these empirical reviews have had either different scopes than the one focused here, or various shortcomings. They did not report accurately the direction and significance of the effects, or did not include all variables related to health, or all studies that tested the effects of communication of emotion. An empirical review that has taken into account these flaws was thus conducted.

3. Meta-analysis, qualitative review, or quantitative review: Which one would be more valid to answer the posed question?

The use of statistical methods for the aggregation and examination of research literature, i.e., meta-analysis (Mullen, 1989; Rosenthal, 1984), research synthesis (Cooper & Hedges, 1994), or power analysis (J. Cohen, 1988), is now widely preferred over the use of qualitative reviews by the American Psychological Association. Meta-analytic reviews are quantitative summaries of research domains (Rosenthal, 1995). Meta-analysis consists of statistical methods for generating an effect size for an effect or phenomenon. It provides a more objective process for evaluating the size and significance of an effect as compared to qualitative reviews. It also allows the evaluation of the nature of moderating variables from which one can predict the relative strength of the effect or phenomenon.

The use of qualitative reviews, however, allows *more precise description of studies* that have used *diverse paradigms* and were conducted to test *specific theoretical hypotheses*. Indeed, a problem with meta-analysis including experimental investigations is that only two groups can statistically be compared. Sometimes excluding one particular experimental group may lead to important theoretical considerations, or even contradictory conclusions. To illustrate, in Melanie Greenberg et al.'s (1996) study, participants in one experimental group wrote about imaginary traumas (i.e., traumas they did not actually experience). In a meta-analysis, this group would either be excluded from analyses, or be averaged with the data of participants who wrote about real traumas. However, according to Pennebaker's inhibition theory, participants should benefit more from writing about a real emotional event as compared to writing about an imaginary trauma. Results of Melanie Greenberg et al.'s (1996) study indicated that compared with control participants, both real- and imaginary-trauma groups, although not significantly different from each other, made significantly fewer illness visits at the one-month follow-up. Authors concluded that different functional processes may have been at work in the two conditions. Indeed, the disinhibition of physiological work may not have been at work in the imaginary-trauma condition as these traumas could not possibly have

been previously inhibited. Thus, important theoretical considerations may be lost when conducting meta-analyses. Similarly, in Melanie Greenberg and Stone's (1993) study, one experimental group in which participants wrote about disclosed traumas was compared with another experimental group in which participants wrote about undisclosed traumas. In a meta-analysis, these two groups have to be statistically averaged and compared with the trivial control condition, or one of the two groups has to be eliminated. However, according to Pennebaker's inhibition theory, undisclosed trauma participants should benefit more from writing about an emotional event as compared to disclosed trauma participants. Contrary to expectations, these two groups did not significantly differ from each other on long-term health utilisation and physical symptom measures. Thus, again, important theoretical considerations may be lost when conducting meta-analyses.

Another problem with meta-analyses is that *they do not and cannot take into account all variables that were notified to be assessed, but for which results were not reported*. Although no direction of effect can accurately be derived from these not reported results, it is important to take into account the total number of variables that have been assessed in one study, because leaving out these may influence the overview one has on the results. In particular, it may lead to type I error (one finds an effect when in fact there is none). For example, Francis and Pennebaker (1992) conducted one study using the classic writing task (one experimental group writing on traumatic events and one control group writing on trivial topics). Among other variables, they assessed 23 biochemical measures (e.g., cholesterol) from blood samples. Out of the 23 biochemical measures, results were reported for only 9 of them. For two of these nine measures, experimental participants had statistically better indices of physical health at long term. In addition, one trend on a third variable was found (in the same direction). In a meta-analysis, these reported results in the expected direction would be given more weight than what should actually be if one considers the 14 other variables for which no results were reported.

Finally, meta-analyses on experimental studies can only be conducted *on a between-subjects design*. Within-subjects designs cannot yet be statistically handled with in meta-analyses. Although a within-subjects design does not allow any long-term assessment, interesting results can be drawn in the short term.

For all these reasons, I chose to conduct another type of review than a meta-analytic one. The review was conducted on all studies that tested whether communicating (talking and/or writing about) an emotional or traumatic event is beneficial for physical health or psychological functioning in normal participants. In contrast with the way qualitative reviews are usually presented, this review did not involve the presentation of results by study. Rather, in order to avoid subjectivity as much as possible when reporting the results, I chose to quantify and synthesise reported results. Similarly to meta-analyses, two types of syntheses were performed: results averaged (1) within study, and (2) within type of outcomes.

It is known that counting tallies of positive, negative, and non significant results can lead to type II error. Thus, the quantitative approach that was used here may fail to recognise a significant effect when in fact there is one (Hedges & Olkin, 1980). Three strategies were used for handling this problem. Each of these are thought to increase the probability to recognise an effect. First, only articles published in reviewed journals were included. Indeed, it is known that articles published in reviewed journals are more likely to report significant results. Second, in cases where a trend was reported ($.10 < p < .05$), the effect was assimilated to be a significant effect. Thus, even if the observed effect was *stricto sensu* not significant, it would be given more chance of being recognised. And third, two sorts of quantifications were computed: (1) tallies when including not reported results, and (2) tallies when these not reported results were not taken into account. Because variables that were assessed but for which results were not reported are often subjectively assimilated to be non significant (otherwise why were they not reported?), computing tallies when taking into account such results may lead on the whole to decrease the likelihood of finding a significant effect. Not taking into account these not reported results is thus a strategy which may give more weight to significant results.

4. Quantitative review of experimental studies

1. Method

a. Description of the reviewed studies

The same 18 studies as those included for analysis of the introduction sections (in the previous chapter) were included for use in this review of empirical results. The overlap between the studies reviewed in Pennebaker (1997), in Smyth (1998) and in this review can be seen in Table 4.1. In comparison with Pennebaker (1997), the present review had 14 studies in common. In comparison with Smyth's (1998) review, 10 studies were reviewed here in common.

A description of the included studies can be found in Table 4.2. For each study, the following variables were recorded: (1) report information (authors, year of publication), (2) characteristics of the emotional or traumatic event (e.g., past emotional or traumatic life event, emotion-inducing film, previously disclosed or not), (3) treatment information which included the type of design (considered between-subject when not explicitly stated "within-subject") and the operationalisation of experimental and control conditions, the number and timing of sessions, and the length of each session; and (4) sample characteristics which included type, mean age, total number of participants, and proportion of male participants.

Table 4.1 *Comparison of the Studies Reviewed in Pennebaker (1997), Smyth (1998), and the Present Review*

<i>Study</i>	<i>Pennebaker (1997)</i>	<i>Smyth (1998)</i>	<i>Zech (the present review)</i>
1. Booth et al. (1997)	Included	Not included	Excluded: correlative study
2. Cameron & Nicholls (1998)	Included	Not included	Included
3. Christensen et al. (1996)	Included	Not included	Excluded: no trivial control condition
4. Dominguez et al. (1995)	Included	Not included	Excluded: book chapter; no intervention control
5. Donnelly & Murray (1991)	Not included	Not included	Included
6. Esterling et al. (1994)	Included	Included	Included
7. Francis & Pennebaker (1992)	Included	Included	Included
8. Greenberg & Stone (1992)	Included	Included	Included
9. Greenberg et al. (1996)	Included	Included	Included
10. Hughes (1993)	Not included	Included	Excluded: unpublished dissertation
11. Hughes et al. (1994)	Included	Not included	Excluded: correlative study
12. Knapp et al. (1992)	Not included	Not included	Included
13. Krantz & Pennebaker (1996)	Included	Not included	Excluded: unpublished manuscript; no trivial control
14. Lutgendorf et al. (1994)	Included	Not included	Excluded: no intervention control
15. Mendolia & Kleck (1993, Study 1)	Not included	Not included	Included
16. Murray et al. (1989)	Not included	Not included	Included
17. Murray & Segal (1994)	Included	Not included	Included
18. O'Heeron (1992)	Not included	Included	Excluded: unpublished dissertation
19. Pennebaker & Beall (1986)	Included	Included	Included
20. Pennebaker et al. (1987, Study 1)	Included	Not included	Included
21. Pennebaker et al. (1987, Study 2)	Included	Not included	Included
22. Pennebaker et al. (1988)	Included	Included	Included
23. Pennebaker et al. (1989)	Included	Not included	Excluded: correlative study
24. Pennebaker et al. (1990)	Included	Included	Included
25. Pennebaker & Francis (1996)	Included	Included	Included
26. Petrie et al. (1995)	Included	Included	Included
27. Richards et al. (1995)	Included	Included	Excluded: unpublished manuscript
28. Rimé (1995)	Included	Not included	Excluded: book chapter; no trivial control
29. Spera et al. (1994)	Included	Included	Included
Total included studies	23	13	18

Table 4.2 Methodological Characteristics of the Experimental Reviewed Studies With at Least One "Trivial" Control Condition

Experiment	Type of emotional event	Treatment information			Sample		
Authors		Design	Number of sessions	Timing	Length of each treatment session	Type	Mean age ^a N ^a Male %
1. Cameron & Nicholls (1998)	coming to college	E1 = write emotion (college); E2 = write emotion, problems, coping; C1 = write trivial	3	consecutive weeks	15'	undergraduates	? 122 27%
2. Donnelly & Murray (1991)	traumatic	E1 = write emotion; E2 = talk to therapist; C1 = write trivial	4	consecutive days	30'	undergraduates	? 102 59%
3. Esterling et al. (1994)	traumatic, felt guilty, not disclosed to many people	E1 = write about stressful events; E2 = talk about stressful events; C1 = write about trivial events	3	consecutive weeks	20'	undergraduates (seropositive)	18.4 57 54%
4. Francis & Pennebaker (1992)	traumatic; most significant; not talked about in details	E1 = write trauma; C1 = write trivial	4	consecutive weeks	20'	employees	43 41 5%
5. Greenberg & Stone (1992)	traumatic	E1 = write undisclosed trauma; E2 = write disclosed trauma; C1 = write trivial	4	consecutive days	20'	undergraduates	19.3 50 40%
6. Greenberg et al. (1996)	severe trauma only	E1 = (think &) write real trauma-emotion; E2 = (think &) write imaginary trauma-emotion; C1 = (think &) write facts campus (trivial)	1	-	30'	undergraduates	18.7 97 100%
7. Knapp et al. (1992)	within: - Negative: most stressful & painful event one can recall; - (Positive)	- 3 within: C1 = read silent, aloud, discussion neutral; E = think, talk aloud, discussion emotion; C2 = read silent, aloud, discussion neutral	2	consecutive days	10' think, 10' talk, & 20' discussion	(people reached through advertisement)	18 to 33 years

8. Mendolia & Kleck (1993, study 1)	stress-inducing film (2 exposures of 3 min.)	E1 = talk emotion film; E2 = talk facts film; C1 = talk facts neutral film	1	-	2'	undergraduates	?	60	50%
9. Murray et al. (1989)	traumatic	E1 = write emotion; E2 = talk to psychotherapist; C1 = write trivial	2	2 days apart	30'	undergraduates	?	56	50%
10. Murray & Segal (1994)	traumatic; not talked about in details	E1 = write trauma-emotions; E2 = talk trauma-emotions; C1 = write trivial; C2 = talk trivial	4	consecutive days	20'	undergraduates	?	120	50%
11. Pennebaker & Beall (1986)	traumatic	E1 = write emotion-trauma; E2 = write trauma-facts; E3 = write trauma-combination; C1 = write trivial	4	consecutive days	15'	freshmen	?	46	26%
12. Pennebaker et al. (1987, study 1)	traumatic, or felt guilty. Not widely discussed	- 2 within: E1 = talk to recorder trauma; C1 = talk to recorder trivial	1	-	2 x 6'	undergraduates	?	24	25%
13. Pennebaker et al. (1987, study 2)	traumatic, or felt guilty. Not widely discussed	- 4 within: E1 = talk trauma; E2 = think trauma; C1 = talk trivial; C2 = think trivial	1	-	4 x 3'40"	undergraduates	?	48	100%
14. Pennebaker et al. (1988)	most traumatic; not talked about in details	E1 = write trauma; C1 = write trivial	4	consecutive days	20'	undergraduates	?	50	28%
15. Pennebaker et al. (1990)	coming to college	E1 = write thoughts & feelings; C1 = write trivial	3	consecutive days	20'	undergraduates	?	130	48%
16. Pennebaker & Francis (1996)	coming to college	E1 = write thoughts and feelings; C1 = write trivial	3	consecutive days	20'	undergraduates	?	72	39%
17. Petrie et al. (1995)	most traumatic; not talked about in details	E1 = write trauma; C1 = write trivial	4	consecutive days	20' to 30'	undergraduates	21.5	40	52.5%
18. Spert et al. (1994)	job loss	E1 = write emotion; C1 = write plans for the day/activities; C2 = no writing	5	consecutive days	20'	unemployed	54	63	98%

Note. E1, E2, and E3 = operationalisations of the experimental conditions; C1 and C2 = operationalisations of the control conditions.

^a The tabled N represents the largest number of subjects used in any statistical test in a study.

b. Outcome types

Because the effect of communication of emotion may vary according to the timing of measurement, outcome variables were recorded in function of their time-related measurement. Indeed, in the previous chapter, Knapp et al. (1992) used the communication of emotional experiences as a good means to induce emotions in the short term. It is likely that in the short term, the communication of negative emotions leads to the reactivation of negative feelings and symptoms. Previous reviews had also concluded that the communication of emotional experience leads to more distress or negative moods in the short term. On the contrary, in the longer term, previous reviews concluded that the communication of emotion was rather beneficial. Thus, in the present review, a short-term outcome was considered when studies had measured variables during or immediately after communication. An outcome was considered to be a long-term one when studies had measured variables after an interval of at least 24 hours after the final communication.

Various variables were used by the experimenters to assess participant's health. A summary of the various variables that were used by the experimenters to assess participant's health follows. Outcomes were grouped according to the first article of the constitution of the World Health Organization (1946) which stated that there are three main dimensions in health: physical, psychological, and social dimensions. In the reviewed articles, experimenters have mainly assessed physical health and psychological outcomes. Subtypes of outcomes in each of these main outcome types were also recorded according to their conceptual similarities, that is, where they attempted to measure the same construct. Social outcomes were rarely investigated and did not allow to draw a clear picture of the effects of communication of emotions on social health. They were thus excluded from the present review (see Section on outcomes not taken into account in the review).

Physical health outcomes.

Physical health outcomes were categorised according to six subtypes of outcomes. Changes in the autonomous nervous system (subtype 1) were assessed by changes in heart rate, systolic and diastolic blood pressure, skin conductance level, and skin temperature. Changes in the immune system (subtype 2) were assessed by changes in absolute number of lymphocytes (LYM), in number of T-helper lymphocytes (CD4), in number of T-cytotoxic lymphocytes (CD8), in number of natural killer cells (NK), in number of T lymphocytes (CD3), or in number of polymorphonuclear cells (PMN). Whether the immune system is functioning satisfactorily was also assessed by the lymphocyte response to antigens or mitogens, such as phytohemagglutinin (PHA) and concanavalin A (Con A), and by the natural killer cell activity (NKCA). Finally, assessment of the immune system included the measurement of levels of antibodies directed against specific common antigens, such as the number of hepatitis B antibodies (NHBA), or the number of Epstein-Barr virus antibodies

(EBV, a latent herpesvirus causing mononucleosis). Changes in biological health (subtype 3) included measures of body weight and of biochemical function referring to number of blood lipids (e.g., triglycerids, cholesterol, high density lipids and low density lipids), number of cells involved in liver function (e.g., uric acid, serum glutamic-oxaloacetic transaminase (SGOT), serum glutamic-pyruvic transaminase (SGPT)), and in immune function (e.g., globulin, albumin).

Objective physical health outcomes (subtype 4) were composed of the health centres' or physicians' records of the number of illness visits made by participants. Physical health was also measured by self-reported physical health questionnaires (subjective physical health outcomes, subtype 5). In these questionnaires, participants were asked to evaluate the number of illness visits they had made to a physician, the extent to which they had various physical symptoms (e.g., pounding heart, sore throat, diarrhoea, rash, headache) either while answering the questionnaire (short-term), or over a period of time (long-term), the number of illnesses caught over a period of time (e.g., flu, enteritis, angina), and the number of days they had restricted their activities due to illness.

Finally, health behaviours (subtype 6) were also assessed to measure physical health. Health behaviours have included the propensity for drug abuse (includes alcohol, pills, caffeine intake, and smoking), the number of hours of sleep, and the number of hours of physical exercise. Participants had to rate the extent to which they had performed each of these behaviours over a period of time.

Psychological outcomes.

Psychological outcomes that were assessed in the reviewed studies can be divided into seven subtypes of outcomes. First, psychological outcomes were assessed by a self-reported mental health questionnaire, the Symptom Checklist (SCL-90, Derogadis, 1977) which describes 90 psychiatric symptoms (subtype 1). This subtype of psychological outcome also included participant's reports of the number of visits they made to a professional for mental health problems. Self-reported mental health was only assessed in the long term. Psychological outcomes have included changes in cognitive functioning (subtype 2). In the reviewed studies, these changes were only assessed in the short-term (when disclosing a topic). Judges have rated the degree to which participants disclosing a particular topic showed signs of understanding or used alternative ways to explain their topic (Cognitive strategies). Participants have also rated whether they had communicated their topic in an organised and structured way (Organisation of communication).

Psychological outcomes also embodied changes in subjective well-being (subtype 3). Participants were asked to rate on Likert-scales whether they felt various positive or negative moods (e.g., anxiety, anger, happiness) when answering the questionnaire. Psychological outcomes also included measures of self changes (subtype 4). In the reviewed studies, they were assessed by judges who rated the degree to which participants' communication indicated

self-esteem changes (only in the short term). In addition, *performance and adaptive behaviours* (subtype 5) were also assessed. In the short term, these behaviours were evaluated by judges who rated the degree to which participants' communication indicated a possible change to problem solving or more adaptive behaviours. In the long term, they consisted of objective evaluations of performance or adaptive behaviours which were provided from academic or company records (i.e., absenteeism rate, grade point average, reemployment full time, reemployment for all types of jobs-including part-time jobs, and job search behaviours, such as the number of letters written, telephone calls given, or interviews made by the participants in order to get a job). They were also composed of participants' evaluations of whether they had acted differently than usual (Behaviour changes). Finally, performance and adaptive behaviours were also assessed by validated self-report questionnaires (i.e., College Adjustment Test (Pennebaker et al., 1990) which taps the degree to which students have experienced various thoughts and feelings about coming to college and the Transition Search/Behavior questionnaire (Spera et al., 1994) which taps various job search activities). Psychological outcomes also contained variables related to *perceived subjective benefits created by the participating in the experiment* (subtype 6). For example, participants were asked whether talking or writing about their emotions had helped them, whether it was meaningful to do, or whether they found comfort or insight in participating in the study. These perceived benefits of having participated in the experiment are different than *emotional recovery* outcomes (subtype 7). These latter outcomes relate to the evolution of the impact of specific emotional events. As mentioned earlier, emotional recovery is related to a specific object (an emotional event) whereas moods are diffuse or global affective phenomena that lack such an object (e.g., Frijda, 1993). In one reviewed study (M. A. Greenberg et al., 1996), emotional recovery was assessed using the avoidance and intrusion subscales of the Impact of Event Scale (IES, Horowitz, Wilner, & Alvarez, 1979). Two other types of emotional recovery outcomes were used in the reviewed studies, namely an emotional even-related reaction time test, and an emotional event-related thought generation task (Pennebaker & Francis, 1996).

Outcomes not taken into account in the review.

Social outcomes were hardly assessed in the reviewed studies. Only three social outcomes were measured in the studies. Two were related to the frequency of social sharing and need to socially share the topic that participants were assigned to write or talk about. The third social outcome was a measure of social affection assessed by one subscale of the Nowlis (1965) Mood Adjective Checklist. No other assessment of social relationship functioning, such as feeling of loneliness, or changes in intimacy or reciprocity in relationships, or number and quality of social contacts, were assessed. Very few studies assessed this type of outcome probably because only three of these had manipulated the communication in the context of a personal interaction (with a sharing target). All other studies have involved written

communication of emotion, oral communication while alone, to an audio-recorder, or to a confessor but without interaction. As this type of outcome variable has been underinvestigated in the reviewed studies, these outcomes were not taken into account in the overall results.

Some other reported results were excluded from the review either because they represented manipulation checks, or because they were unclassifiable. Variables were considered as manipulation check questions rather than health outcomes when participants rated whether they shared personal, emotional, traumatic, or trivial topics. Manipulation check questions have also included assessment of whether participants had previously shared or concealed the topic they had to write about in the experiment (M. A. Greenberg & Stone, 1992; Petrie, Booth, Pennebaker, Davison, & Thomas, 1995). One measure of corrugator muscle activity taken during sharing (in Pennebaker et al., 1987, Study 1) was also excluded because it represented a measure of emotional expression rather than a health or psychological outcome. One unclassifiable variable was found in Donnelly and Murray's (1991) study. They had asked participants to rate "how much emotional upset and painfulness they felt about the(ir) topic" (p.339). This variable was excluded from the review because the type of "topic" was different between conditions. Indeed, in the experimental conditions, it referred to the emotional event --and thus, represented an emotional recovery outcome--, but in the control condition, "topic" meant the participant's closet, bedroom, classroom, and wardrobe. The frequency of mental rumination about the topic participants were assigned to write about was excluded for the same reason (in Pennebaker & Beall, 1986 and in Pennebaker et al., 1990).

c. Evaluation of effects

One problem in assessing the effects of communication of emotion on people's health, like any other intervention, is the need to evaluate pre- to post-test measure changes. Three statistical procedures can be used for this: (1) a post-measure (either at short or long term) is subtracted from the pre-measure and between-groups differences are assessed using one-way analysis of variance (ANOVA or t-test); (2) between-group differences are assessed using one-way analysis of variance with pre-test measures as covariates (ANCOVA); and (3) between-groups differences are assessed using repeated measures analysis of variance (MANOVA) with the interaction between time and condition indicating the effect size.

Whether an outcome was considered positive or negative depended (1) on the significance level of the result and (2) on the type of dependent variable. An outcome was considered positive when participants in the experimental condition were found to have better health or psychological indices as compared to participants in the control condition. To illustrate, a significant *decrease* in number of illness visits to the physician and a significant *increase* in NK cell activity were both considered positive. On the contrary, an outcome was considered negative when participants in the experimental condition were found to have worse health or psychological indices as compared to participants in the control condition. To

illustrate, a significant *increase* in heart rate and a significant *decrease* in well-being were both considered negative. In order to decrease type II errors, when a trend was reported ($.10 < p < .05$), the effect was assimilated to a significant effect. In cases where an outcome was measured, but no information on the direction of the effect was provided (i.e., no effect, no significance level, no means and variances, no notification of significance), the effect was assumed to have no direction and was noted as "not reported results" (an overview of the proportion of dependent variables for which results were not reported in each reviewed study will be given later in this chapter).

When only two conditions were compared (t-test) and when a significant effect (or trend) was found, examination of the groups means directly indicated which condition was greater than the other. When studies involved more than two conditions and when a significant between-condition effect (in case of ANOVA and ANCOVA), or a significant interaction between time and condition (in case of MANOVA) was reported, post-hoc tests or contrasts were examined to determine which condition was significantly different from which other one(s). Then, an effect was considered as either positive or negative, only when outcomes of all experimental groups in which participants had talked or written about real past emotional or traumatic events were significantly different or tended to be significantly different than outcomes of control groups (participants who talked or wrote about trivial topics). In cases where only main effects or interactions between time and condition were reported as significant (no notification of whether post-hoc tests were significant), the direction of effect was noted according to the authors' interpretation.

For within-subjects designs, as in Knapp et al. (1992) and in Pennebaker et al. (1987, Study 1 and 2), where participants had consecutively to write and/or talk about their emotions and trivial topics, only short-term outcomes were taken into account.

When analyses were performed by authors on both compound scores and individual items (i.e., for mood outcomes) and when both results were presented for the same variables, the reporting of compound scores unless authors noted specific effects on an individual item as compared to other ones was privileged. Thus, in the review, either the compound, or the specific effects were recorded, but both were never included together for aggregation of results.

It is important to note that all studies reviewed here have tested multiple outcomes. However, including all outcomes in a given review could bias the analysis in favour of studies having many outcomes relative to other studies. Similarly to methods that are commonly used in meta-analyses, I have addressed this issue by using two strategies. First, the proportion of positive, negative, non significant, and not reported results using all of the outcomes found in the studies were computed. Second, the proportion of positive, negative, non significant, and not reported results per study and averaged these across studies were computed. Thus, these strategies yielded one set of results obtained from using outcomes individually and another set based on averages of the outcome data for each study.

2. Results

a. Specific physical health outcomes

Table 4.3 lists the short-term specific physical health outcomes and Table 4.4 lists the long-term specific physical health outcomes. As can be seen in Table 4.3, *short-term physical health outcomes* were assessed by three of the six subtypes of outcomes: changes in autonomous nervous system, in immune system, and in self-reported physical symptoms. The subtype of objective health outcomes as measured by the number of illness visits, the body weight, and most health behaviours are by definition long-term outcomes. These dependent variables could thus not have been investigated in the short term. However, biochemical blood measures and one health behaviour (smoking) could have been investigated in the short term.

As predicted, communication of emotion was found to negatively influence the autonomous nervous system in the short-term in a majority of the cases (14/19 outcomes were negative, based on 7 studies). This means that communication of emotions, compared to the communication of trivial topics, increased heart rate, systolic and diastolic blood pressure, skin conductance level, and decreased skin temperature. Whether it also negatively influenced the immune system (based on 3 studies) seems less clear because a majority of results were either not significant (8/15), or not reported (1/15). However, when significant, all results suggested a short-term detrimental effect of communication on the immune system (6/15 were negative). When considering studies that have assessed the same type of immune system variable, only one consistent significant result was reported, which is a decrease in T-helper lymphocytes (CD4) from before to after communication in the experimental group as compared to the trivial group. It is unclear whether communication of emotion also negatively influenced physical symptoms reporting (based on 5 studies). Indeed, a majority of results on symptom reporting were either not reported (5/10), or not significant (2/10). However, when reported and significant, results suggested a short-term detrimental effect of communication on physical symptoms reporting (3/10 outcomes were negative).

On the whole, examination of Table 4.3 revealed that, as predicted, communication of emotion was found to negatively influence short-term physical health in the majority of the cases. Indeed, respectively 52% and 62% of the total number of short-term physical outcomes were negative when including and excluding not reported outcomes (based on 10 studies). Almost no positive impact of communication of emotion on short-term physical health has been reported. Only one positive result on skin conductance level has been reported, when considering the evolution of skin conductance over four days of writing (Petrie et al., 1995).

Table 4.3 *Short-term Physical Health Outcomes for Studies Comparing Communication of Emotion and Communication of Trivial Topics*

Outcome	Positive		Negative		No direction		Total
	+	(+)	-	(-)	ns	nr	
Autonomous Nervous System	1		14		3	1	19
Heart rate			3		2	1	6
Systolic blood pressure			2	2			4
Diastolic blood pressure			2	1	1		4
Skin conductance level	1		2	1			4
Skin temperature			1				1
Immune System	0		6		8	1	15
Absolute number of lymphocytes					1		1
T-helper lymphocytes (CD4)			2				2
T-cytotoxic suppressors (CD8)					2		2
T-lymphocytes (CD3)					1		1
Natural Killer cells (NK/CD58)					1		1
Polymorphonuclear cells (PMN)			1				1
Basophil			1				1
Phytohemagglutinin (PHA)			1			1	2
Concanavalin A			1		1		2
Natural Killer Cell Activity					2		2
Number of Hepatitis B Antibodies							
Epstein-Barr Virus Antibody Titers (EBV)							
Biological Outcomes	0		0		0	0	0
Body weight							
Biochemical measures							
Objective Health	0		0		0	0	0
Number of illness visits							
Subjective Health (self-reported)	0		3		2	5	10
Number of illness visits							
Health questionnaire							
Physical symptoms			3		2	5	10
Upper respiratory symptoms							
Musculo-skeletal symptoms							
Restricted activity days due to illness							
Health Behaviours	0		0		0	0	0
Alcohol							
Anti-pain pills							
Caffeine							
Physical exercise							
Sleeping habits							
Smoking							
Total	1		23		13	7	44
Percentage	2.3		52.3		29.5	15.9	

Note. "+" = Significant positive health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "(+)" = Trend towards a positive health outcome. "-" = Negative health outcome. "(-)" = Trend towards a negative health outcome. "ns" = No significant difference between the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics.. "nr" = Variables were assessed but results were not reported.

Table 4.4 Long-term Physical Health Outcomes for Studies Comparing Communication of Emotion and Communication of Trivial Topics

Outcome	Positive		Negative		No direction		Total
	+	(+)	-	(-)	ns	nr	
Autonomous Nervous System	0		0		7	0	7
Heart rate					2		2
Systolic blood pressure					2		2
Diastolic blood pressure					2		2
Skin conductance level					1		1
Skin temperature							
Immune System	3		0		5	0	8
Absolute number of lymphocytes							
T-helper lymphocytes (CD4)					1		1
T-cytotoxic suppressors (CD8)					1		1
T-lymphocytes (CD3)							
Natural Killer cells (NK/CD58)					1		1
Polymorphonuclear cells (PMN)							
Basophil					1		1
Phytohemagglutinin (PHA)	1						1
Concanavalin A							
Natural Killer Cell Activity					1		1
Number of Hepatitis B Antibodies		1					1
Epstein-Barr Virus Antibody Titers (EBV)	1						1
Biological Outcomes	3		0		7	14	24
Body weight					1		1
Biochemical measures	2	1			6	14	23
Objective Health	5		0		2	0	7
Number of illness visits	3	2			2		7
Subjective Health (self-reported)	5		0		10	0	15
Number of illness visits	1				4		5
Health questionnaire	1				3		4
Physical symptoms					1		1
Upper respiratory symptoms	1						1
Musculo-skeletal symptoms		1					1
Restricted activity days due to illness		1			2		3
Health Behaviours	1		0		13	0	14
Alcohol		1			2		3
Anti-pain pills					3		3
Caffeine					2		2
Physical exercise					2		2
Sleeping habits					2		2
Smoking					2		2
Total	17		0		44	14	75
Percentage	22.7		0		58.7	18.6	

Note. "+" = Significant positive health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "(+)" = Trend towards a positive health outcome. "-" = Negative health outcome. "(-)" = Trend towards a negative health outcome. "ns" = No significant difference between the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics.. "nr" = Variables were assessed but results were not reported.

As can be seen in Table 4.4, *long-term physical health outcomes* were assessed by all subtypes of physical health. In the long term, only objective physical health measured by the number of illness visits recorded by the participants' health centre was positively influenced by communication of emotion (3/7 outcomes indicated significant improvements and 2/7 outcomes were trends in the same direction, based on 7 studies). Contrary to predictions, the pattern of results for the other subtypes of long-term physical health measures suggests that they are in the majority of the cases not influenced by communication of emotion. Autonomic nervous activity was never influenced by communication of emotions in the long run (7/7 outcomes were non-significant, based on 2 studies). Similarly, immune function was not found to be influenced by communication of emotion (5/8 outcomes were non-significant, based on 3 studies). Similar proportions of non-significant results were found for biological functioning (7/10 of reported outcomes were non-significant, based on 2 studies) and for self-reported physical health (10/15 outcomes were non-significant, based on 8 studies). Consistent with the conclusions of previous reviews, communication of emotion did not influence health-related behaviours (13/14 outcomes were non-significant, based on 3 studies). It should, however, be noted that communication of emotion never negatively influenced any of the long-term physical health outcomes (0/75 results were negative, based on 15 studies). When results reached significance, they were in the positive direction (10/75 results were significant positive effects and 7/75 were trends toward a positive outcome). These were due to a better functioning of particular immune indices (Phytohemagglutinin, number of Hepatitis B antibodies, and Epstein-Barr virus antibody titers), to a decrease of number of illness visits to physicians (objective and subjective), and to a decrease of physical symptoms reporting (upper-respiratory and musculoskeletal). With the exception of the decrease in number of illness visits to the health centre (objective physical health outcome), none of these positive results has yet been replicated.

On the whole, examination of Table 4.4 revealed that, contrary to predictions, communication of emotions did not significantly influence long-term physical health in a vast majority of the cases. Indeed, respectively 59% and 72% of the total number of long-term physical outcomes were non-significant when including and excluding not reported outcomes (based on 15 studies). However, when significant, the impact of communication of emotion on long-term physical health was never negative. This indicated that, at the very least, communicating one's emotions can do no physical harm in the long run. Finally, 23% and 28% of outcomes were positive and significant when including and excluding not reported outcomes. This indicated that the communication of emotion had beneficial effects on long-term physical health in about a quarter of the cases.

b. Specific psychological outcomes

Table 4.5 lists the short-term specific psychological outcomes and Table 4.6 lists the long-term specific psychological outcomes. As can be seen in Table 4.5, *short-term psychological outcomes* were assessed by all subtypes of outcomes but self-reported mental health and emotional recovery outcomes. The number of visits for mental health problem is by definition a long-term outcome. This dependent variable could thus not have been investigated in the short term. However, changes in emotional recovery and in self-reported mental symptoms could have been investigated in the short run. Short-term outcomes were investigated by cognitive, well-being, self, and performance and behaviour changes, and by the perceived benefits of the communication.

Short-term psychological outcomes revealed mixed results. Indeed, on the one hand, participants who talked about emotional or traumatic events reported more negative moods and less positive moods as an immediate consequence of sharing (29/49 negative well-being changes, only 1/49 positive well-being change). In other words, participants reported feeling more anxious, more sad or depressed, and more nervous after communication of emotion. This indicated that the communication of emotion has a detrimental effect on psychological functioning. On the other hand, the communication of emotion was consistently found to improve cognitive functioning, self-esteem, and adaptive coping as compared to the communication of trivial topics (all results were significant and in the positive direction, based on 4 studies). In addition, participants were also found to report more perceived benefits of the experiment as compared to participants who had communicated trivial topics (12/23 perceived benefits of the experiment, only 1/23 perceived detrimental effect of the experiment, based on 8 studies). To illustrate, participants reported that communicating one's emotions was meaningful and positive, that it allowed insight and helped them thinking differently. Altogether, these results indicated that communication of emotion has also a beneficial effect on psychological functioning.

Thus, when considering the overall total short-term psychological outcomes, the modal result is that communication of emotion is detrimental to psychological functioning (respectively, 35% and 41% of the outcomes were negative when including and excluding not reported outcomes). This result is only due to short-term subjective well-being changes, which were the most widely assessed outcomes in the reviewed literature (14 studies had assessed short-term well-being outcomes). In contrast to this detrimental effect, participants who had communicated emotions subjectively reported that participating in the experiment was beneficial to them. They were also found to report more positive cognitive, self, and coping changes. In other words, although participants reported feeling more anxious, more sad or depressed, they also perceived that communication of emotion was more meaningful, that it allowed more insight, and it helped them thinking differently.

Table 4.5 *Short-term Psychological Outcomes for Studies Comparing Communication of Emotion and Communication of Trivial Topics*

Outcome	Positive		Negative		No direction		Total
	+	(+)	-	(-)	ns	nr	
Self-reported Mental Health	0		0		0	0	0
Mental health questionnaire (SCL)							
Visits for mental health problem							
Cognitive Changes	5		0		0	0	5
Cognitive strategies (judges)	4						4
Organisation of communication	1						1
Well-being	1		29		9	11	49
Unreported mood						11	11
Negative mood (averaged score)			6		2		8
Anxiety			2				2
Anger			3				3
Sadness/Depressed			6		1		7
Fear			1				1
Confusion	1						1
Nervosity			1				1
Guilt			2				2
Positive mood (averaged score)			2		2		4
Happiness			3		2		5
In peace			1				1
Active			1	1			2
Fatigue and felt down					2		2
Self Changes	3		0		0	0	3
Self-esteem	3						
Performance & Behaviour Changes	4		0		0	0	4
Adaptive coping	4						
Absenteeism							
Grade point average							
Job search behaviours							
Reemployment							
College Adjustment Test							
Transition Search/Behaviour Quest.							
Behaviour changes							
Perceived Benefits of the Experiment	12		1		10	0	23
XP was meaningful	5						3
XP was comforting					1		1
Felt positive about XP	2				2		4
Felt positive about self	2						2
XP allowed insight	1						1
XP helped dealing with problems					1		1
XP enhanced control over problem					1		1
XP helped thinking differently	2						2
XP induced tension					1		1
Felt negative about XP					3		3
Felt negative about self			1		1		2
Emotional Recovery	0		0		0	0	0
Impact of event scale							
Event-related reaction time test							
Event-related thought generation task							
Overall total	25		30		19	11	85
Percentage	29.4		35.3		22.4	12.9	

Note. SCL = Symptom Checklist. XP = Experiment. "+" = Significant positive health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "(+)" = Trend towards a positive health outcome. "-" = Negative health outcome. "(-)" = Trend towards a negative health outcome. "ns" = Effect not significant. "nr" = Variables were assessed but results were not reported.

Table 4.6 Long-term Psychological Outcomes for Studies Comparing Communication of Emotion and Communication of Trivial Topics

Outcome	Positive		Negative		No direction		Total
	+	(+)	-	(-)	ns	nr	
Self-reported Mental Health		0		0	3	0	3
Mental health questionnaire (SCL)					1		1
Visits for mental health problem					2		2
Cognitive Changes		0		0	0	0	0
Cognitive strategies							
Organisation of communication							
Well-being		1		1	22		24
Unspecified mood items					8		3
Negative mood (averaged score)					3		3
Anxiety							
Anger					1		1
Sadness					2		2
Fear					1		1
Guilt					1		1
Positive mood (averaged score)					2		2
Happiness	1				2		3
Active					1		1
Fatigue & felt down			1		1		2
Self Changes		0		0	0	0	0
Self-esteem							
Performance & Behaviour Changes		3		1	10	0	14
Adaptive coping							
Absenteeism					1		1
Grade point average		2			1		3
Job search behaviours					3		3
Reemployment full time	1						1
Reemployment (all types of jobs)					1		1
College Adjustment Test				1	1		2
Transition Search/Behaviour Quest.					1		1
Behaviour changes					2		2
Perceived Benefits of the Experiment		3		0	1	0	4
XP was meaningful	2						2
XP was comforting							
Felt positive about XP							
Felt positive about self							
XP allowed insight							
XP helped dealing with problems							
XP enhanced control over problem							
XP had positive long-lasting effects	1				1		2
XP helped thinking differently							
XP induced tension							
Felt negative about XP							
Felt negative about self							
Emotional Recovery		0		1	3	0	4
Impact of event scale - Intrusion					1		1
Impact of event scale - Avoidance				1			1
Event-related reaction time test					1		1
Event-related thought generation task					1		1
Overall total	7		4		39	0	49
Percentage	19.9		3.9		76.2	0	

Note. SCL = Symptom Checklist. XP = Experiment. "+" = Significant positive health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "(+)" = Trend towards a positive health outcome. "-" = Negative health outcome. "(-)" = Trend towards a negative health outcome. "ns" = Effect not significant. "nr" = Variables were assessed but results were not reported.

It should be noted that the present review found that 29 to 34% of the total number of short-term psychological outcomes were positive respectively when including or excluding not reported results, but that none of these beneficial effects of communication have been taken into account in previous reviews. This would explain why past reviews mainly found a negative impact of communication on short-term psychological outcomes.

As can be seen in Table 4.6, *long-term psychological outcomes* were assessed by all subtypes of outcomes but cognitive and self changes. Neither long-term cognitive functioning, nor self-esteem changes were evaluated in the reviewed studies. Long-term outcomes were assessed by measures of self-reported mental health, well-being, performance and behaviour, and emotional recovery changes, and by measures of perceived benefits of the experiment.

Most long-term psychological subtypes yielded non significant results. Indeed, 76% of the total number of long-term psychological outcomes were non-significant (note that all results have been reported in this category of outcomes). In particular, the short-term negative impact of communication of emotion on well-being completely disappears in the long run (22/24 outcomes were not significant; based on 6 different studies). Communication of emotion also does not influence self-reported mental health (3/3 non significant results, based on 3 different studies). Whether communication of emotion allows to better perform and change adaptive behaviours is not clear. Indeed, although communication tends to increase grade point average among students (2/3 positive trends) and increases the probability for unemployed people to find full time work, it had no effect on other types of adaptive behaviours (e.g., absenteeism among employees, adjustment to college, reemployment in all types of jobs, job search behaviours among unemployed people, based on 7 studies). In addition, two studies reported that participants in the experimental condition did not act (behave) more differently than usual as compared to participants in the trivial condition. Whether communicating an emotion leads to emotional recovery is also unclear. Communication was found to induce a negative rather than a positive effect on emotional recovery (1/4 outcome was negative and no outcomes were positive, based on 2 studies). Similarly to the results found in the short term, in the long term, participants in the emotion condition reported more subjective beneficial effects of having participated in the experiment than participants in the trivial condition (3/4 outcomes were positive, based on 2 studies).

It is important to note that beyond well-being and adaptive behaviours, other subtypes of long-term psychological effects were rarely investigated. Indeed, the long-term perceived benefits of communication were investigated in only 2 studies (4 outcomes), self-reported mental health outcomes in 3 studies (3 outcomes), and emotional recovery outcomes in 2 studies (4 outcomes). Moreover, the impact of communication of emotion on cognitive and self changes has not been investigated in the long term. Further investigation of all these subtypes of long-term psychological outcomes is thus needed.

c. Outcomes by study

Table 4.7 lists the results reported by each study by type of outcome (short- vs. long-term, physical vs. mental health). It also gives the percentage of positive, negative, non significant effects, and not reported results. As can be seen in this table, a total of 253 outcomes have been assessed in the 18 reviewed studies. The number of outcomes assessed by each study varied from a minimum of 2 variables in Pennebaker et al. (1987, Study 2) to a maximum of 36 variables in Francis and Pennebaker (1992). With the exception of Pennebaker et al.'s (1987) studies in which only short-term physical health variables were assessed, all other studies have assessed different subtypes of outcomes. Four studies only focused on short-term effects (Knapp et al., 1992; Mendolia & Kleck, 1993, Study 1; Pennebaker et al., 1987, Study 1 and 2) and one study focused only on long-term effects (Pennebaker et al., 1990).

One study reported only beneficial effects of communication of emotion (Esterling et al., 1994) and two studies reported only detrimental effects of communication (Pennebaker et al., 1987, Study 1 and 2). All other studies reported from 25 to 82% non significant effects. Finally, five studies did not report 6 to 42% of its results. Thus, outcomes widely varied from one study to another.

Because Pennebaker initiated the research on the effects of communication of emotion and because Pennebaker was involved in half of studies included in this review, it is tempting to believe that studies conducted in his laboratory led to more significant and more positive results as compared to studies that were conducted in other laboratories. As can be seen in Table 4.8, studies authored or co-authored by James Pennebaker have involved 58% of the total number of outcomes. Pennebaker et al. were the authors that did not report most of the outcomes (97% of the not reported outcomes). If one excludes these not reported outcomes from the analysis, a similar number of outcomes has been reported by Pennebaker and colleagues (52%) and by other authors (48%).

Table 4.7 Outcomes Assessed by Study and by Type of Outcome

Authors	Total	Short-term Outcomes						Long-term Outcomes						Total Percentage							
		Physical Health			Psychological Functioning			Physical Health			Psychological Functioning										
		+	-	ns	nr	+	-	ns	nr	+	-	ns	nr								
Cameron & Nicholls (1998)	7				1	2	2	1				3	29	71							
Donnelly & Murray (1991)	15				6	2	2		2			3	40	13	47						
Esterling et al. (1994)	4				3			1						100							
Francis & Pennebaker (1992)	36				2	5	2	1	3	6	14	3	14	14	30.5	41.5					
Greenberg & Stone (1992)	10	1			1	2	1		3	3		2	10	30	60						
Greenberg et al. (1996)	20				5	1		3	2	2	7	2	15	35	50						
Knapp et al. (1992)	16	7	4		5									75	25						
Mendolia & Kleck (1993, study 1)	5	2			1		2						40	40	20						
Murray & Segal (1994)	12				6	3	1		1			1	50	25	25						
Murray et al. (1989)	17	2	1		3	3	5		3				18	29	53						
Pennebaker & Beall (1986)	13	1	3		1			3	4			1	21.5	21.5	57						
Pennebaker & Francis (1996)	9				2	3		1		1	2		44	56							
Pennebaker et al. (1990)	11							1	6	3	1		33	17	50						
Pennebaker et al. (1987, study 1)	4				4									100							
Pennebaker et al. (1987, study 2)	2				2									100							
Pennebaker et al. (1988)	30	1	1		1	2		5	2	4	2	12	13	10	57	20					
Petrie et al. (1995)	25	1	3	5	1	2		4	1	5			12	20	32	36					
Spera et al. (1994)	17		1				1	1	8		1	5	12	82	6						
Total	253	1	23	13	7	25	30	19	11	17	0	44	14	7	3	39	0	21.3	28.6	41.4	6.9

Note. "+" = Significant or tendency toward significant positive health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "-" = Significant or tendency toward significant negative health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "ns" = No significant difference between the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "nr" = Variables were assessed but results were not reported.

Table 4.8 Comparison of Number of Outcomes (Percentage in parentheses) by Authorship

	<i>Pennebaker et al.' studies</i>	<i>Studies not authored by Pennebaker</i>	<i>Total</i>	<i>Student t test</i>
Number (percent) of short-term outcomes	40 (36%)	71 (64%)	111	2.94**
Number (percent) of long-term outcomes	76 (69%)	34 (31%)	110	2.10*
Number (percent) of physical health outcomes	65 (66%)	33 (34%)	98	3.23***
Number (percent) of psychological outcomes	51 (41%)	72 (59%)	123	1.89
Total number (percent) of reported outcomes	116 (52%)	105 (48%)	221	< 1
Positive outcomes	25 (50%)	25 (50%)	50	< 1
Negative outcomes	22 (39%)	34 (61%)	56	1.34
Non significant outcomes	69 (60%)	46 (40%)	115	2.14*
Number (percent) of not reported outcomes	31 (97%)	1 (3%)	32	5.30***
Total number (percent) of outcomes	147 (58%)	106 (42%)	253	2.58**

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

In total, 36% of the short-term results and 69% of the long-term results have been reported in Pennebaker and colleagues' articles. James Pennebaker was thus less interested in knowing whether communication of emotion would have beneficial effects in the short term and more interested in knowing whether it would have beneficial effects in the long run than other authors. Pennebaker and colleagues were also more interested in knowing whether communication of emotion has beneficial effects on physical health variables (66%) than other authors (34%). They were slightly less interested in investigating psychological outcomes (41%) than other authors (59%). This is consistent with Pennebaker's initial concern to test his inhibition theory which, at its origin, mainly postulated physical effects of communication of emotion. Interestingly and contrary to what might be expected, Pennebaker and colleagues reported more non significant effects (60%) than other authors (40%). Also contrary to expectations, when Pennebaker et al. reported significant results, these were not more often positive (25/47) than for the other authors (25/59), $t(105) = 1.46$, *ns*. The number of negative outcomes reported by Pennebaker and colleagues was also not significantly different as compared to the number of negative outcomes reported by other authors.

Thus, contrary to what might have been expected, the studies conducted by Pennebaker and his colleagues do not lead to more significant and more positive results as compared to the studies conducted by other authors. Because the beneficial effects of the communication of emotion may be difficult to replicate, researchers could think that a sort of personal factor linked specifically to the expertise of James Pennebaker, the instigator of the research on the effects of

disclosure of emotional upheavals, might have been at hand. The present results indicate that this belief should, however, be forsaken and that the effects generated by other research groups are as reliable and not significantly different than the ones generated by Pennebaker et al.

d. Overall outcomes

The next step in the review is to summarise all outcomes. Table 4.9 lists the outcomes of the review for an analysis based on the total number of outcomes and for an analysis based on the averaged outcomes from each study. It should be noted that results of both analyses were in the same direction. The first step in this section is to determine whether *temporal factors* influence the efficacy of communication of emotion. The second step is to determine whether *overall temporal effects are moderated by the main type of outcome* (whether physical, or psychological outcomes were considered). Finally, in order to determine whether communication of emotion is *generally* beneficial, the averaged outcomes for physical health outcomes, for psychological outcomes, and for all outcomes confounded will be examined.

Short vs. long-term outcomes.

As can be seen in Table 4.9, 41% of the total *short-term outcomes* were negative for both analyses based on total of outcomes and on averaged outcomes. This indicates that communication of emotion is associated with more negative outcomes in the short term than the communication of trivial topics. This result is consistent with previous reviews (Pennebaker, 1993b, 1997; Smyth, 1998). However, positive short-term outcomes were also reported. Indeed, respectively for the analysis based on total of outcomes and on averaged outcomes, 20 and 22% of effects were positive.

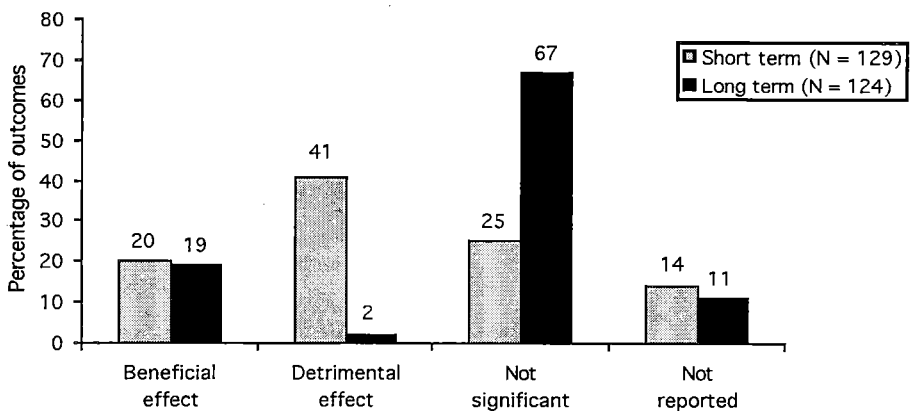


Figure 4.1 *Percentage of Short and Long-term Outcomes: Review Based on Total of Outcomes (N = 253) in Studies Testing the Effects of the Communication of Emotion (as Compared to the Communication of Trivial Topics)*

With regard to *long-term outcomes*, respectively for the analysis based on total of outcomes and on averaged outcomes, 67 and 71% of effects were not significant. Thus, contrary to previous empirical reviews, a vast majority of results were non significant. Interestingly though, 19 and 24% of the effects respectively for the analysis based on total of outcomes and on averaged outcomes were significant and positive. Finally, 2% of effects were negative for both analyses. Thus, almost no detrimental effects of communicating one's emotions were reported in the long run. In other words, in the short-term, the communication of emotion has a negative effect on outcomes, a result which is compensated in the long term (see Figure 4.1).

Physical vs. psychological outcomes.

The next step in the review is to determine whether short and long-term effects were moderated by *the main type of outcome*. In the short term, respectively for the analysis based on total of outcomes and on averaged outcomes, 2 and 4% of the results on physical health outcomes were positive and 52 and 58% of the results were negative. This indicated that, just after communication of emotion, there was almost no positive physical health effects and that a majority of these were negative. In the long term however, 59 and 61% of the results on physical health were non significant respectively for the analysis based on total of outcomes and on averaged outcomes. Although a vast majority of results were not significant, there was no negative physical consequences of the communication of emotion. All significant results on physical health in the long run were positive (respectively for the analysis based on total of outcomes and on averaged outcomes, 23 and 35% of effects were positive). The results for the analysis based on total of outcomes are depicted in Figure 4.2 so that the reader can visualise the contrasts between short- and long-term results on physical health.

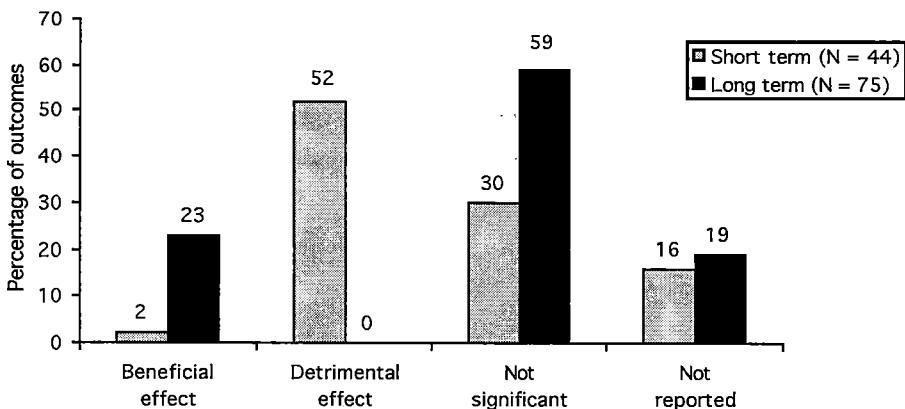


Figure 4.2 Percentage of Physical Health Outcomes: Review Based on Total of Outcomes (N = 119) in Studies Testing the Effects of the Communication of Emotion (as Compared to the Communication of Trivial Topics)

Table 4.9 *Summary of the Review of Studies Comparing Communication of Emotion and Communication of Trivial Topics*

Outcome type	Analysis Based on Total of Outcomes					Analysis Based on Averaged Outcomes				
	Total					Total				
	+	-	ns	nr	Number of Outcomes	+	-	ns	nr	Number of Studies
Physical health										
Short term	2.3%	52.3%	29.5%	15.9%	44	4.1%	58.1%	30.2%	7.5%	10
Long term	22.7%	0%	58.7%	18.6%	75	35.1%	0%	60.6%	4.3%	15
Total	15.1%	19.4%	47.9%	17.6%	119	25.4%	23.7%	43.5%	7.4%	18
Psychological outcomes										
Short term	29.4%	35.3%	22.4%	12.9%	85	25.3%	34.5%	24.3%	15.9%	14
Long term	14.3%	6.1%	79.6%	0%	49	19.9%	3.9%	76.2%	0%	12
Total	23.9%	24.6%	43.3%	8.2%	134	26.7%	25.1%	41.8%	6.4%	16
Total outcomes										
Short term	20.1%	41.1%	24.8%	14.0%	129	21.5%	40.6%	26.9%	11.0%	17
Long term	19.4%	2.4%	66.9%	11.3%	124	23.7%	1.6%	70.8%	3.9%	14
Total	19.8%	22.1%	45.5%	12.6%	253	21.3%	28.6%	41.4%	6.9%	18

Note. "+" = Positive health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "-" = Negative health outcome for the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "ns" = No significant difference between the condition(s) of communication of emotion as compared to the condition(s) of communication of trivial topics. "nr" = Variables were assessed but results were not reported.

For psychological outcomes, in the short term, 35% of the results for both analyses were negative effects and 29 and 25% of the results were positive effects respectively for the analysis based on total of outcomes and on averaged outcomes. Thus, percentage of short-term negative effects was slightly higher as compared to percentage of short-term positive effects. On the contrary, in the long run, respectively for the analysis based on total of outcomes and on averaged outcomes, 80 and 76% of the effects were non significant and 6 and 4% of the results were negative. Thus, the vast majority of results were not significant and almost no negative psychological effect was found. The results for the analysis based on total of outcomes are depicted in Figure 4.3 so that the reader can visualise the contrasts between short- and long-term results on psychological variables.

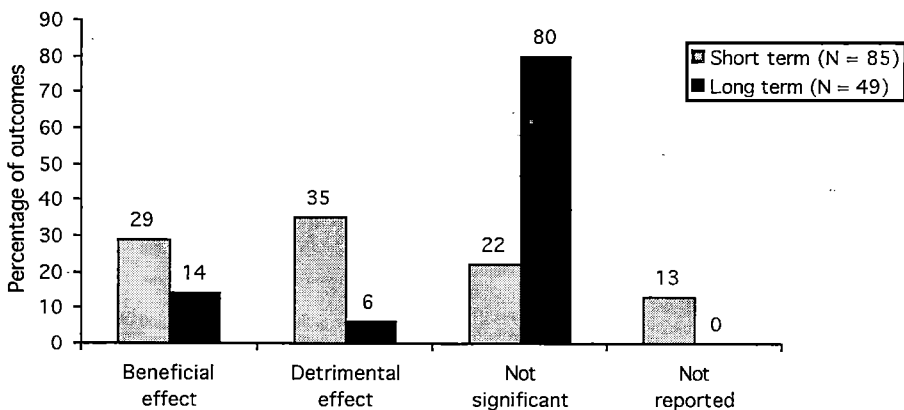


Figure 4.3 *Percentage of Psychological Outcomes: Review Based on Total of Outcomes (N = 134) in Studies Testing the Effects of the Communication of Emotion (as Compared to the Communication of Trivial Topics)*

Total outcomes.

The summary of total health outcomes revealed mixed results. Indeed, the modal percentage of outcomes is respectively for the analysis based on total of outcomes and on averaged outcomes, 46 and 41%. These results represent outcomes for which no significant difference between the communication of emotion and the communication of trivial topics was found. Moreover, similar percentages of positive and negative total health outcomes were found with a slightly higher proportion of negative total outcomes. Thus, contrary to previous empirical reviews, this pattern suggests that there are neither obvious beneficial overall effects, nor strong detrimental overall effects of communication of emotion over the communication of trivial topics. The pattern of results of both total physical health outcomes and total psychological outcomes were similar to the ones of total health outcomes (see Figure 4.4).

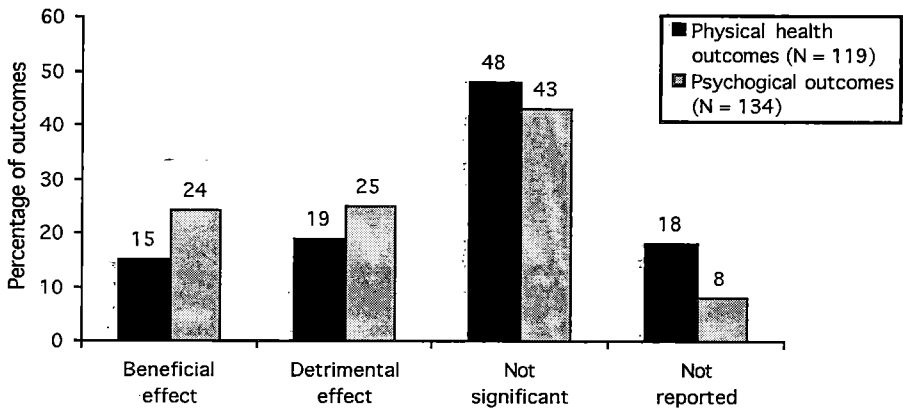


Figure 4.4 *Percentage of Total Outcomes for Physical Health and Psychological Outcomes: Review Based on Total of Outcomes (N = 253) in Studies Testing the Effects of the Communication of Emotion (as Compared to the Communication of Trivial Topics)*

3. Conclusions

On the whole, the results of the present analysis conducted on the empirical literature indicate that, in contrast to the conclusions of previous reviews, the overall beneficial effect of communicating an emotional or traumatic event is not proven. Indeed, there are as many detrimental effects of the communication of emotions as beneficial effects. However, similarly to previous reviews, results indicated that the detrimental effect on physical and psychological health is essentially due to the short-term effect of communication of emotions. Indeed, in the long-term, this negative effect almost disappears. However, even if the communication of emotional experiences does not lead to detrimental effects in the long term, a majority of long-term results were not significant. This indicated that, contrary to what was expected according to lay people and scientific views and to previous reviews of the literature, the communication of emotions is not *overly* beneficial for people's health. It is in about 20% of the outcomes that the communication of emotion leads to physical health and psychological benefits.

5. Factors influencing the effects of communication of emotion

The next step in the empirical review was to specify the variables through which the effects of communication of emotion may be attenuated or enhanced. The present review already showed that the effects of the communication of emotion depend on the timing of measurement and on the type of variables that are assessed. First, it is crucial to carefully consider the *timing of measurement*. Indeed, in the short term, negative outcomes were twice as frequent as positive outcomes and in the long term, almost no negative outcomes were reported. In some studies, the examination of results suggests that it may also be essential to take into account the *precise* timing of measurement rather than just whether variables were assessed in the short or in the long term. For example, Knapp et al. (1992) observed that communication of emotion led to reductions in lymphocyte responsivity to mitogens (PHA and Con A) during communication of emotion (i.e., detrimental to physical health), but that this effect disappeared immediately after communication of emotional topics. Another example is found in Francis and Pennebaker's (1992) study. The authors found that the communication of both emotional and trivial topics was more beneficial as compared to no communication on absenteeism among employees during the period of the experiment and at three months but that this effect was not significant one and two months after the experiment. Thus, these results suggest that it may be important to measure outcome variables several times.

Second, the present review also gave evidence that it is necessary to distinguish between *physical health variables* and *psychological variables*. Some findings suggested that communication of emotion can affect physical health variables and psychological ones in divergent directions. A notable example is given by Melanie Greenberg et al. (1996) who preselected college women for trauma presence and randomly assigned them to write about real traumas, imaginary traumas, or trivial events. Compared with participants in the latter condition, those in both trauma groups made significantly fewer illness visits at a 1-month follow-up. With respect to psychological variables, however, the real-trauma participants showed less favourable results than the other two groups. Specifically, they reported more fatigue and avoidance at the one-month follow-up.

Within the broad outcome categories of physical health and psychological functioning, some *subtypes of outcome variables* were more likely to be influenced by the communication of emotion than others. To illustrate, seven studies investigated the impact of communication of emotion on both short-term subjective well-being and perceived benefits of the experiment (Donnelly & Murray, 1991; Francis & Pennebaker, 1992; M. A. Greenberg & Stone, 1992; Murray et al., 1989; Murray & Segal, 1994; Pennebaker & Francis, 1996; Petrie et al., 1995). Findings indicated that the communication of emotion affected these two short-term psychological outcomes in divergent directions. Indeed, with the exception of Pennebaker and Francis's (1996) study in which no significant effect was found on subjective well-being, all other studies found that communicating one's emotions was accompanied by a lower subjective

well-being, but that participants also reported more perceived benefits of having communicated their emotions.

Finally, within the same subtype of outcome variables, some *operationalisations* are also more likely to be influenced by communication of emotion than other ones. To illustrate, T-helper lymphocytes (CD4) were found to be influenced by the communication of emotion in the short term, whereas T-cytotoxic suppressors (CD8) were not. Thus, beneficial effects of communication of emotion depend on the type of outcome that has been investigated. *The present review indicated that one needs to pay careful attention to the precise operationalisation of the outcome variable.*

The question was raised as to whether other variables influence the effects of communication of emotion. One wondered (1) whether the effects vary as a function of individual or cultural differences, (2) whether the effects depend on the length and number of communicating sessions, (3) whether it is better to write or talk about the emotional events, (4) whether the effects generalise over any emotional or traumatic event, and (5) whether specific aspects of the emotional experiences, such as event-related facts or feelings, need to be addressed in order to influence outcomes. A first way to answer these questions is to examine the conclusions of previous empirical reviews. A second way is to examine whether the studies that were reviewed here answer these questions.

1. Previous reviews of the literature

In his recent empirical review, Pennebaker (1997) addressed each of the above questions. None of the discussed variables was said to influence the effects of disclosure of emotions. It was concluded that "when individuals write or talk about personally upsetting experiences in the laboratory, consistent and significant health improvements are found. The effects are found in both subjective and objective markers of health and well-being. The disclosure phenomenon appears to generalise across settings, most individual differences, and many Western cultures, and is independent of social feedback." (1997, p. 164) Thus, according to Pennebaker, the disclosure effect is very strong and generalised. However, as noted before, such conclusions should be regarded with caution because, among other reasons, Pennebaker did not report the direction, nor the significance of the results of the reviewed studies.

In Smyth's (1998) review of the writing paradigm, only some of the above questions have been addressed. In this review, the effects of the writing paradigm were reviewed essentially in the long run. The influence of the time of measurement on the effects of communication of emotion was thus not considered. In addition, Smyth only reviewed literature on the impact of written communication of emotion. Thus, Smyth did not investigate whether it is better to write or talk about the emotional events. Moreover, Smyth did not investigate whether emotional or factual aspects of the emotional experiences need to be addressed in order to influence outcomes. Finally, he did not examine cultural differences.

Smyth, however, considered the type of outcomes as a variable influencing the effects of written communication of emotion. Results indicated that only health behaviours were not influenced by the writing intervention. Thus, it was concluded that written communication of emotion is beneficial for reported health, psychological well-being, physiological functioning, and general functioning. Gender was found to influence the overall effect across outcome type. Males were found to benefit slightly more than females within the overall outcome, but not on each type of outcomes considered separately. The longer the time period over which writing interventions were spaced, the greater the effect of the writing paradigm on overall outcome was. But again, this effect was not found on each type of outcomes considered separately. The length or number of the writing sessions also failed to affect this relationship.

As noted at the beginning of this chapter, Smyth's review did neither include 8 studies that were considered in the present review, nor some dependent variables related to health and well-being. Thus, Smyth's review either did not answer the above questions, or its conclusions were based on part of the existing literature on the effects of the communication of emotion. Next, the questions will thus be examined in light of the reviewed studies.

2. Review of the selected literature

First, *do individual or cultural differences moderate the effects of communication of emotions?* Seven of the 18 above reviewed studies have tested the main effect of gender on various outcome measures (e.g., symptom reporting, well-being). However, they never tested the interaction between communication and gender. Thus, one cannot know whether gender moderates the impact of communication of emotion. Other individual differences were rarely investigated. Dispositional disclosure (Pennebaker et al., 1987) and dispositional optimism (Cameron & Nicholls, 1998) were the only other individual differences investigated. High disclosers, persons who were perceived by judges to be more stressed and to give a more personal description of their emotional experience, were found less autonomically aroused (lower SCL) while talking about traumas than were low disclosers. Optimistic individuals, persons who tend to expect positive outcomes under conditions of uncertainty, were found to benefit more from the communication of emotions as compared to pessimists (reduction of illness-related clinic visits at the 1-month follow-up). These findings have, however, not yet been replicated. It is thus too soon to generalise the beneficial effects of communication of emotion over any individual because such differences have been underinvestigated. With regard to cultural differences in the effects of communication of emotion, all but one laboratory that conducted the studies were located in the United States of America. Thus, contrary to Pennebaker's (1997) conclusion, it is again too soon to generalise the beneficial effects of communication of emotion to "many Western cultures". One is in need of further replication in other countries of the world.

Second, *do the effects depend on the length and number of communicating sessions?*

None of the reviewed studies has explicitly investigated such a question. However, the reviewed studies have variously asked participants to write for 1 (e.g., Mendolia & Kleck, 1993, Study 1) to 5 days (Spera et al., 1994). The length of communication sessions has ranged from 2 minutes (Mendolia & Kleck, 1993, Study 1) to a total of 120 minutes (e.g., Donnelly & Murray, 1991). The timing of sessions varied from two consecutive days (Knapp et al., 1992) to four sessions separated by a week (Francis & Pennebaker, 1992). Inducing participants to talk about their emotions once for two to six minutes was sufficient to induce short-term negative physical effects in Mendolia and Kleck (1993, Study 1) and in Pennebaker et al. (1987, Study 1 and 2). Long-term outcomes were not considered in these three studies and one does not know whether talking for so few minutes is effective in the long term. However, Melanie Greenberg et al. (1996) tested whether writing about emotions once for 30 minutes influenced long-term physical and psychological outcomes. This short induction was sufficient to produce positive long-term physical health outcomes (on number of illness visits to the health centre, and on self-reported upper respiratory and musculo-skeletal symptoms). It also induced more long-term fatigue and avoidance of the event. Thus, consistent with Smyth (1998) and Pennebaker's (1997) conclusions, the effects of communication of emotion do not depend on the length or number of communication sessions.

Third, *do the effects depend on whether one writes or talks about the emotional event?*

Only two studies have explicitly compared writing versus talking about emotional experiences in a controlled manner. In Esterling et al. (1994), significant differences in Epstein-Barr virus antibody levels were found at the 3-week follow-up indicating that participants who had talked about their emotions benefited more from communication of emotions than participants in the written expression condition. In contrast, Murray and Segal (1994) found that although talking about emotional experiences allowed more emotional expression (i.e., they used more emotional words during the 20 minutes of communication), writing and talking were very similar in their effects. Thus, no clear conclusion can be drawn from the reviewed studies.

Fourth, *do the effects generalise over any emotional or traumatic event?* Most of the studies did not investigate this question. One study has distinguished disclosed and undisclosed trauma (M. A. Greenberg & Stone, 1992). No significant difference between disclosed and undisclosed traumas was found on physical or mental health. The same authors also investigated whether participants who had disclosed more severe traumas would report fewer health problems in the months following the study compared with low-severity trauma participants. Results indicated that this was the case (on reported physical symptoms). One other reviewed study has distinguished imaginary traumas from real traumas (M. A. Greenberg et al., 1996). In this study, college women were randomly assigned to either write about real traumas, imaginary traumas, or trivial events. Imaginary-trauma participants were significantly less depressed than real-trauma participants at immediate post-test, but they were similarly angry, fearful, and happy. Compared with participants in the control group, both trauma groups

participants made significantly fewer illness visits at 1-month follow-up. This result suggested that the communication of emotion per se leads to beneficial physical effects in the long run, even when one writes about imaginary traumas. Thus, with the exception of the severity of the trauma, it seems that the effects of communication of emotion were not mediated by the type of event one communicates.

Finally, *are there specific aspects of the emotional experiences that need to be communicated in order to influence outcomes?* Only two studies distinguished between factual and emotional aspects of the emotional episode (Mendolia & Kleck, 1993, study 1; Pennebaker & Beall, 1986). In the study conducted by Mendolia and Kleck (1993, Study 1), participants were instructed to talk either about their emotional reactions to an emotion-inducing film, about the sequence of events within it, or the sequence of events within a neutral film. Emotion condition participants were more autonomatically aroused during a second immediate exposure to the emotional film than were fact condition participants. This result confirmed previous short-term effects of reactivation of emotions among participants who had communicated their emotions. In Pennebaker and Beall's (1986) study, students were asked to write either about their deepest thoughts and feelings (emotion condition), or about both the emotions and facts surrounding a past personal trauma (combination condition). They were compared to students who only reported facts surrounding their trauma or who, in a control condition, wrote about trivial topics. At a 6-month follow-up, only students in the combination condition showed less frequent visits to the campus health centre and students in both emotion conditions reported fewer self-reported illnesses as compared to students in the two other conditions. Thus, the communication of event-related feelings is more detrimental to people in the short-term and more beneficial in the long run as compared to the communication of event-related facts. Although future research should replicate these findings, they suggest that the impact of communication is mediated by the aspect of the emotional experience that is communicated.

To summarise, within the ranges of length and number of sessions studied, the research has not shown differences in the effects of communication of emotion according to the length or number of communication sessions. Whether the effects depend on the mode of communication (i.e., whether one writes or talks) or whether they are influenced by individual or cultural differences is not clear. Indeed, few studies have investigated these differences and results have rarely been replicated. It seems that the impact of communication of emotion will be greater when one communicates the feelings associated with severe emotional events. Although many studies have attempted to identify some of the variables that mediate or moderate the effects of communication of emotion, it appeared difficult to draw reliable conclusions because few results were either replicated, or consistent.

6. Conclusions

The goal of this review was to examine whether the communication of emotional experiences is beneficial to the person's health and well-being. The present review indicated that *the effects of communication of emotion depend on the precise time of measurement and the precise type of outcome variable assessed*. Results demonstrated that, in the short-term, communication of emotion leads to detrimental physical health, and especially to the activation of the autonomous nervous activity. In the long run, these detrimental physical effects completely disappear. Although a majority of long-term results were not significant, when they reached significance, they revealed positive long-term beneficial effects of communication of emotion. These were due to a better functioning of some indices of the immune system, to a decrease of number of illness visits to physicians, and to a decrease of physical symptoms reporting. The autonomous nervous system and health behaviours were not influenced by the communication of emotion in the long run.

In the short term, psychological variables are also influenced by the communication of emotion. As expected, detrimental effects of communication were found on well-being. However, participants who had communicated their emotional or traumatic events also reported various perceived benefits of having participated in the experiment. Although few studies investigated other short-term psychological health outcomes, results revealed beneficial effects on cognitive strategies used when communicating, on self-esteem, and on adaptive coping behaviours. In the long run, in the vast majority of the cases, the communication of emotion does not influence psychological variables. However, when results were significant, they were more often positive than negative. Positive long-term psychological effects were due to increases in grade point average among students, to the full time reemployment of unemployed people, and to perceived benefits reported after having participated in the experiment.

In addition to time of measurement and type of dependent variable assessed, the present chapter addressed other variables that may influence the effects of communication such as individual and cultural differences, the content of communication, the type of trauma, the number and length of communication sessions, and the mode of communication. However, conclusions often relied on single studies and were thus only tentative.

On the whole, *the positive impact of communication of emotion is thus not as strong and generalised as other reviews* (Littrell, 1998; Pennebaker, 1997; Smyth, 1998) *have suggested*. How come that past reviews led to more optimistic conclusions? The present review leads to the conclusion that the communication of emotion does not *generally* lead to *overall* beneficial effects. The point here is not to say that the communication of emotions has *no beneficial effects*. Rather, I argue that the communication of emotional experiences is *not overly beneficial for any variable at any time*. Thus, the present review indicated that the answer is a complex one. This was not the case in previous empirical reviews because they did not examine in sufficient depth the effects of communication of emotion according to the time evolution. They

also used broad categories of physical health and psychological well-being. I have shown that one needs to pay careful attention to the precise dependent variable that is assessed. In other words, when the communication of emotion is beneficial for one operationalisation of physical health, this does not mean that this effect can be generalised to any other operationalisation of physical health. The same holds for psychological variables.

The uniqueness of the present review also consisted of having shown that there are both beneficial *and* detrimental effects in the short term. Indeed, while the communication of emotions increases physical symptoms and negative moods in the short term, it also induces perceived benefits in the person who has communicated his/her emotions. Even in the short term, it seems subjectively important for participants to have communicated their emotions. However, these beneficial effects were never considered in previous reviews. Indeed, these reviews had only considered short-term distress effects, that is effects on negative moods.

The research on the effects of communication of emotion in a controlled manner began only two decades ago. In this short period, 18 controlled experimental studies were conducted and published in journals with high standards. These studies have mainly focused on the physical impact of the communication of emotion on the immune system, on physician visits, or symptom reporting and on the psychological impact on subjective well-being. However, various other dependent variables have been underinvestigated. For example, one knows little about the effects of the communication of emotion on people's cognitive functioning (e.g., do people think less about the event? Did they assimilate the emotional information?), on the evolution of their self (e.g., does communication bring higher self-esteem? Does it change people's self-concept?), or on the evolution of their social relationships (e.g., do people feel less lonely after communication? Does it help them to feel more socially integrated?). These variables were almost not investigated. In addition, up to now, the direct effects of the communication of emotion on the recovery from the specific emotional event that was communicated were almost "forgotten". Although the literature on coping with emotional experiences or traumatic events suggested that the communication of emotions would help people to deal with the emotion-arousing event, this was not the main concern of previous research on the effects of communication of emotions. Indeed, Pennebaker, the initiator of the research in this field, was more interested in physical health and general well-being benefits. The purpose of the empirical research that is presented in the second part of this dissertation was to provide more scientific knowledge on these under-researched aspects.

Empirical part

Chapter 5. Introduction to the empirical chapters⁵

1. Previous findings and their implications

The theoretical part of this dissertation allowed to establish the following findings. First, in an overwhelming manner, *people share their emotional episodes*. People talk about what has happened to them and about what they have felt. The more the experience is intense, the more the process tends to persist over time. Second, *people believe that communicating their emotions is beneficial for their well-being and health*. The data of my surveys with this regard has shown that most people think talking about an emotional event will help them to relieve their emotions (see Chapter 2). Third, *during the last years, scientific literature has shown an important interest for the question about the relation between communication of emotion and well-being and health*. An important focus has been put on the expression of feelings. The disclosure of only the event-related facts is not considered as beneficial as the expression of all feelings related to the event. Fourth, the systematic review of the available literature *on the relation between the communication of emotions and well-being and health showed that communication is not overly beneficial for any variable and that it is essential to consider carefully timing of measurement and type of dependent variable that is assessed*.

The findings on the effects of the communication of emotion lead to the following implications or questions. First, the *communication of emotion is paradoxal*. On the one hand, when the memory of an emotional episode is accessed, the components of the corresponding emotional reaction (i.e., physiological, sensory, experiential) are also activated (e.g., Bower, 1981, Lang, 1983; Leventhal, 1984). That this is elicited during a communication situation was confirmed in a study wherein participants had first to describe a past emotional experience and then report what they experienced when sharing (Rimé, Noël, et al., 1991). Nearly all of the participants reported experiencing mental images of the emotional event as well as accompanying feelings and bodily sensations, suggesting that sharing itself elicits an emotion. This is consistent with data from the literature reviewed in Chapter 4. Indeed, it was shown that the communication of emotional episodes has an impact on autonomous nervous system responses as well as on well-being as assessed by moods. Thus, the communication reactivates the various components of the emotion, which in the case of negative emotion, should be experienced as aversive. On the other hand, sharing an emotion, whether positive or negative, is a behaviour that people develop willingly. Rimé, Noël, et al. (1991) indeed showed that reporting fear, sadness, or anger experiences was rated by only a minority of the subjects as

⁵ This part is based on Pennebaker, Zech, and Rimé (in press) and on Rimé, Finkenauer, Luminet, Zech, and Philippot (1998)

painful or extremely painful. Notwithstanding the reactivation of vivid images, feelings, and bodily sensations of a negative emotional experience, the sharing did not appear as aversive as one would have expected. This was further confirmed by subjects' answers to the question of whether they would be willing to undertake the sharing of another emotional memory of the same type as the first one. Indeed, 94 percent of the subjects gave a positive answer.

Thus, *if people are so eager to engage in a social process in which they will experience negative affect*, it seems *then* reasonable to speculate that individuals find some important benefit from the exposure to their emotions. *In other words, they should be driven to do so by some powerful incentive. What could be the rewards they find?* In Chapter 2, it was shown that people actually believe that sharing would relieve their emotions. Altogether thus, both people's behaviour and people's beliefs suggest that sharing an emotion would help the subject to recover from the emotion.

Second, the idea according to which the communication of emotional experiences leads to effects of "relief," of "resolution," of "liberation," or of "catharsis" is implicitly present behind the whole literature that was reviewed in Chapter 3 and 4. This idea of an effect of "resolution" of the emotional experience is largely widespread in a number of representations transmitted by contemporary psychological concepts. My purpose will not be to explicit, develop, and differentiate these representations. I think indeed that they do not represent as such complete theories explaining the resolution effects. Dozens of concepts exist that rely on this assumed "resolution effect." To take some examples, one can list the following concepts: catharsis, discharge, abreaction, venting, repetition-habituation-extinction, assimilation to long-term memory, accommodation (changing schemes), articulation and taking distance, translation into language, building up a narrative, completion of one's autobiography, achievement of symbolic mastery, reappraisal and reinterpretation, achievement of closure, overcoming goal-disruption, receiving social support. Each of these concepts *represent* precise hypothetical mechanism through which resolution can be reached because of putting the emotion into words. They, however, represent assumptions drawn from various theoretical backgrounds: psychoanalytical, behavioural-cognitivist, memory theories, cognitive theories of coping, motivation theories, or social psychology. There is no complete theory as such that has been developed in psychology on the resolution effects of the communication of emotional experiences. These effects have thus not been properly conceptualised in the theoretical literature.

Third, as shown in Chapter 4, the question of whether communication of emotion leads to emotional recovery was generally ignored by previous research on the effects of communication of emotion (see Chapter 4, this thesis). However, *if the representation according to which the communication of emotion leads to effects of resolution of the emotional experience, one should then observe that such communication has an impact on the alleviation of the emotional impact of episodes*, that is on whether people *recover* from their emotions or

whether communication of emotion decreases the arousal still elicited when a given emotional memory is reaccessed at its recall (Rimé, Finkenauer, Luminet, Zech, & Philippot, 1998).

The empirical part of this dissertation attempted to provide answers to the question of whether communication of emotional experiences leads to relief or to emotional recovery from the emotions. Although this question was never investigated in previous experimental research which were reviewed in Chapters 3 and 4, some correlative studies have been conducted on the relationship between naturally occurring communication of emotional episodes and emotional recovery. The results of these studies will thus be reviewed below. Then, in the last section of this chapter, my experimental contribution to this specific question will be outlined.

2. The relationship between communication of emotion and emotional recovery

Does communication lead to a reduction in the emotionality elicited by the memory of an emotional episode? Whereas this question was generally ignored by previous research, it represents an important focus in studies on social sharing. A first way to address this question consisted of examining the extent to which sharing developed spontaneously after an emotion contributed to later emotional recovery. Rimé et al. examined this question in most of their studies on social sharing involving a correlational design. Specifically, they tested the hypothesis of a positive correlation between the frequency of social sharing developed spontaneously after the emotional event and the degree of emotional recovery. The latter variable was usually assessed by the "recovery index" obtained from the difference between the initial and residual intensity of the emotion elicited by the event or its recall.

This correlational hypothesis was considered in various studies which can be distinguished by four different research strategies. The first strategy used a retrospective or "recall" procedure. As mentioned before in Chapter 1, in this type of research, volunteer respondents were instructed first to recollect and briefly describe an emotional episode that they recently experienced. They were then asked to answer a number of questions about their social sharing of this episode. For example, in one study, 50 participants were asked to complete these questionnaires in relation to one of the life events that had occurred to them between the 6 and 30 previous months (Rimé, Mesquita, et al., 1991, Study 6). Neither the amount of social sharing, nor the delay of social sharing were related to emotional recovery. In another retrospective study, 127 psychology students (Luminet et al., in press; Zech, Luminet, Rimé, & Wagner, 1999) were asked to report the most negative emotional event of the last three months. Result did not confirm the hypothesis that spontaneous social sharing of a negative emotional event was correlated with emotional recovery from the event. The results of these studies could, however, have been biased by the retrospective nature of the data (e.g., memory reconstruction bias, selection bias).

In a second research strategy, i.e., the "diary" procedure, participants reported daily about the most important emotional episode of the day and the event-related social sharing. Recovery was then assessed by the difference between the impact each daily event had when it occurred and its residual impact as rated several weeks later, at a follow-up (Rimé et al., 1994, Study 3). Again no significant relation was observed between the recovery index and extent of social sharing manifested when the event happened.

In a third research strategy, i.e., the "follow-up" procedure, people were contacted immediately after an emotional situation and were subsequently recontacted on several occasions. In one of these studies, people were contacted 10 days, 1 month and 3 months after the death of a loved one (Zech, 1994). Thirty-one bereaved persons completed questionnaires assessing the emotional impact the loss still had, as well as their related social sharing. Extent of social sharing reported for the 10-days period after the death of their loved one failed to predict emotional recovery at the one- and three-month follow-ups. Similarly, social sharing that was still reported at the one-month follow-up failed to predict later emotional recovery as assessed at the three-month follow-up. This suggested again that communicating one's emotions did not contribute to emotional relief. In another study using the follow-up procedure, 55 adults completed a questionnaire on the emotional impact of an activity inducing fearful sensations (i.e., roping down a cliff). They did so just after the activity. One week and one month after the activity, participants were then sent a questionnaire assessing their social sharing related to the activity as well as the remaining emotional intensity still elicited by the episode (Zech & Rimé, 1996). In addition to items assessing the frequency and need to socially share the emotional episode, some questions also investigated dimensions of social sharing that could better account for the recovery effect. For example, one can think that recovery should only occur when people share all the factual and feeling aspects of the event. In other words, it can be hypothesised that exhaustivity of social sharing is needed. One can also believe that emotional reactions should be expressed with full conviction and that it is only when physiological reactions are intense during social sharing that emotional relief will later be possible. Finally, one can hypothesise that relief would only be possible when partners of social sharing react positively (e.g., they understand, empathise, care, and support). Results revealed that none of these aspects of social sharing were correlated with later emotional recovery from the episode.

Finally, in a fourth strategy, two studies compared emotional memories that were socially shared and emotional memories that were kept secret (Finkenauer & Rimé, 1998b). In the first study, students recalled both a shared and a non-shared emotional event and rated various dimensions of the emotional experience. Results showed that neither the intensity of the emotion felt when the event occurred, nor the intensity of the emotion still felt at the time of responding, discriminated shared from non-shared emotional episodes. Also, non-shared emotional experiences were no more and no less negatively valenced than shared ones. A second study was conducted on a large sample of respondents whose age ranged from 16 to 70 years. This time, a between-subjects design was used and additional dependent variables were

included to assess event-related stress and traumatic impact. None of the results supported the hypothesis that non-shared events were more traumatic than shared ones. As in the first study, both types of events were equally negative. Assessments of stressfulness and traumatic impact in this study also failed to support the prediction that secret events would be less recovered from than shared ones. Overall, these studies on emotional secrecy suggested that talking about an emotional experience does not contribute to emotional recovery.

Thus, each of the studies that investigated the question of whether naturally occurring communication of emotion is related to later emotional recovery consistently yielded the same non-relationship. These data were perfectly consistent in this regard. In sum, together with the studies on shared and secret emotional memories, the correlational findings overwhelmingly suggested that communicating an emotional experience does not contribute to emotional recovery as such. Should it thus be concluded from these generally negative data that social sharing of emotion has no effect on emotional recovery? Pennebaker and colleagues suggested that qualitative aspects of sharing should be considered. In the study by Pennebaker and Beall (1986) mentioned earlier, writing about factual aspects of an emotional episode did not affect health variables, while writing about feeling aspects did. Emphasising the feeling dimension may thus be critical for social sharing to have some impact. Experiments involving various types of sharing were thus conducted in order to assess how far such a distinction has also consequences when emotional recovery is the assessed variable (Zech, 1999).

3. My contribution

In the present thesis, my empirical contribution will consist of the experimental study of the effects of communication of emotion on recovery. I did so in four experimental investigations. The purpose of the first experimental study was to explore some of the mechanisms that underlie the beneficial effects of communication of emotion on emotional recovery. It was expected that an emotion-focused communication (which can be regarded as similar to an emotional venting technique) and a communication focused on the meanings and consequences of the emotional event (which can be regarded as a cognitive restructuring or reappraisal intervention) would be more beneficial for emotional recovery than the communication of only facts related to the emotional event. These communications which focused on specific aspects of the emotional experiences were compared to a communication of emotions without constraints to share one or another aspect of the emotional event (which can be regarded as a free-association technique with the only restriction that as many details as possible should be given).

At the time the first experimental study was conducted, that is during the academic year of 1994-1995, it seemed evident that an interview of about 30 minutes would influence emotional recovery in a different manner from one condition to another. In fact, Experiment 1 relied upon the presupposition that socially sharing an emotion would contribute to emotional

recovery. At that time, most of the experiments that had been published had optimistically concluded that the communication of emotions had beneficial effects. Such manipulation was thus expected to "work". As most lay people, I strongly believed that talking about emotional events in an emotional manner would be helping people to recover from the emotion. As it will become evident in the following chapters, I had to face contradicting data and results that led me to revise my opinion.

The purpose of the second study was then to control for the unspecific factors that could have explained that participants in all conditions in the first experiment had benefited from the communication of their emotional experience. I thus tested whether the communication of emotion was indeed more beneficial than the communication of trivial topics. This study conducted in a laboratory setting tested whether the communication of emotion allows to recover from emotional experiences, and thus, as in Experiment 1, emotional recovery outcomes were assessed. In addition, the paradox of communication of emotion was empirically tested. People were expected to subjectively benefit from the communication of emotion because they were found inclined to share their emotions with others regardless of the aversive immediate effects of communication. It was thus expected that short-term physical symptoms and negative moods would be greater when participants had communicated their emotional event. It was, however, also expected that perceived benefits of the communication would be greater in the conditions where participants had communicated their emotions or the facts related to the event as compared to participants who did not communicate the emotional event (trivial condition). Finally, this study also assessed Pennebaker's measures of physical health to examine whether these effects could be replicated.

The purpose of the third study was then to investigate whether the concept of emotional recovery was valid but also whether communication of emotions of unrecovered events yielded more beneficial effects on emotional recovery and perceived benefits than the communication of recovered ones. In addition, it seemed necessary to investigate in more depth several additional variables related to the recovery from emotional experiences. Changes in the self-concept were assessed (self-esteem and clarity of the self). Finally, because communication of emotion happens in an interpersonal context, it was expected that beneficial interpersonal benefits could occur. A social integration variable, namely state of loneliness, which was not considered in previous studies in the literature was also investigated.

The purpose of the fourth study was to investigate specifically the differences in emotional recovery and in perceived benefits from the communication of emotions. It was expected that people would perceive benefits from any communication of emotional topics. However, only participants who had communicated their emotions related to an emotional event for which emotional recovery was assessed would indeed recover more as compared to participants who did not communicate this specific event. To test this hypothesis, a complex design with four conditions was needed. In one condition, participants communicated a specific emotional event whose emotional impact was assessed in the questionnaire. In a second

condition, participants communicated another emotional event not assessed in the questionnaire. A third condition controlled for the unspecific or common beneficial factors of communication to a person. Finally, a fourth condition controlled for recovery effects that would be only due to time evolution or to spontaneous remission.

In the general conclusions, the major results of the studies presented in this thesis will be summarised and discussed, together with their implications. It should be noted that the following empirical chapters are written in a way that makes it possible to read them independently. They are the basis of articles that will be submitted for publication. There is thus some repetition of theory, especially in the introductions to each chapter.

Chapter 6. Experiment 1 on the impact of four types of communication on emotional recovery

1. Introduction

There is little doubt that emotional and traumatic experiences can adversely affect physical and psychological well-being. In the fields of psychosomatics and health psychology, researchers have long known that psychological disturbance can lead to health problems. Alexander (1950), Seyle (1976), and other pioneers (e.g., Holmes & Rahe, 1967) have provided evidence that psychological conflict and emotional events can cause or exacerbate disease processes and that individuals who have suffered a major upheaval are more vulnerable to a variety of major and minor illnesses. The experience of emotional events also causes negative changes in psychological well-being. Following stressful life events, individuals commonly experience anxiety, confusion, helplessness, distress, and/or intrusive thoughts difficult to get rid off (e.g., Martin & Tesser, 1989; Silver & Wortman, 1980; Tait & Silver, 1989).

There is, however, also ample evidence that the ways people cope with emotional situations can influence their health and well-being (Lazarus, 1991a; Lazarus & Folkman, 1984). For example, the adverse effects of stress can be buffered by such things as reception of social support (e.g., S. Cohen & Syme, 1985; Swann & Predmore, 1985) or the reinterpretation of a negative emotional event in a positive light (e.g., Bulman & Wortman, 1977; R. L. Collins, Taylor, & Skokan, 1990; Silver & Wortman, 1980).

1. Talking helps to recover from the emotion

A commonly held assumption among lay people and in psychological literature is that talking about emotional experiences with others will help individuals to cope with their emotions. Indeed, in Chapter 2 of this dissertation, I have documented the finding that a vast majority of lay people share the belief that talking helps and is relieving. In the literature, dozens of psychological concepts exist that illustrate the idea that talking about emotional experiences decreases the emotional load created by emotional events. For example, in the last two decades, James Pennebaker (1989, 1993b) was influential in assuming and demonstrating that disclosing emotional upheavals has an impact on physical and psychological well-being. According to Pennebaker, confronting an emotional event through communication of emotions may be beneficial from at least two perspectives. First, individuals no longer need to actively inhibit or hold back their thoughts and feelings from others. Several studies have indeed indicated that

actively inhibiting ongoing behaviour is associated with both short-term autonomic activity and long-term stress related disease (e.g., Pennebaker & Susman, 1988). Putting a trauma into words, then, may reduce the long-term physical work of inhibition. Second, by talking or writing about the trauma, individuals may assimilate, reframe, or find meaning in the event (Pennebaker, 1993b). The failure to talk about or to translate the experiences into language is thought to impede the natural cognitive assimilation process. It was proposed, however, that when upsetting experiences are formulated, they are more likely to be understood and assimilated (Pennebaker, 1989, 1993b) and thus more likely to be recovered from.

In fact, most people take for granted that talking about one's emotions is beneficial for emotional recovery. The problem with this hypothesis is that it has only been indirectly tested. Indeed, as was mentioned in Chapters 4 and 5, beneficial effects of the communication of emotional experiences were found on psychological variables indexing better behavioural or adaptive performances. For example, first year college students were asked to disclose their feelings about coming to college and their academic performances (i.e., grade point averages) were then examined (Pennebaker et al., 1990, Pennebaker & Francis, 1996). In another study, staff members of a company were asked to disclose the most traumatic or emotional event of their life and the absenteeism at work was then subsequently examined (Francis & Pennebaker, 1992). In fact, the effects found on these types of variables are thought to be *mediated* by the cognitive assimilation of the emotional information that would result from the communication of emotions. In other words, such model presupposes that because people talk about the emotional event, they will assimilate emotional information and find meaning in the event. The assimilation of emotional information and finding meaning in the event are both *considered* as indices that people are recovering from the event (Horowitz, 1992; S. E. Taylor, 1983). In other words, people who communicate their emotions are expected to *recover* from the emotional event. However, behavioural or adaptive performances are not as such indexing emotional recovery. For example, people may show better performances because they learned new coping strategies, not because they coped with their emotions and recovered from the emotional event. *Thus, a direct test of this hypothesis requires examination of whether the communication of emotions helps to decrease the emotional impact caused by the event.* In contrast to previous studies conducted on the effects of communication of emotion which considered physical health measures or adaptive behaviours and performances, the study to be reported below assessed emotional recovery from the emotional episode.

2. Measures of emotional impact and recovery

Emotional recovery has been defined as a significant alleviation of the impact the memory of the emotional event has for the person (Rimé et al., 1998). Thus, emotional recovery is intrinsically linked to the emotional impact that the event elicits when thinking about it or when circumstances elicit its recall. It is conceived as the changes in intensity and duration

of the emotional experiences elicited when the event is remembered or reaccessed. The emotional recovery from an event can be measured by at least four means. First, as was shown in Chapter 1, the experience of emotion involves diverse classical dimensions: action tendencies, physiological, expressive, and subjective reactions (Arnold, 1960; Frijda, 1986; Lazarus, 1966; Ortony et al., 1988; Roseman, 1984; Scherer, 1984). Thus, within this perspective, the intensity of these emotional dimensions elicited when a person remembers an event will decrease when he/she recovers from it. Second, ample evidence was also reported in Chapter 1 that emotional events are commonly followed by cognitive and social processes related to the event (Rimé, Mesquita, et al., 1991; Rimé, Noël, et al., 1991; Rimé et al., 1992): A process of mental rumination and a process of social sharing of emotion. Emotional recovery can thus also be assessed by the evolution of these two long-lasting phenomena. Over time, successful recovery should involve fewer and fewer episodes of intrusive thoughts as well as a decrease of the need to share the event with others and actual sharing frequency.

In addition to the above variables indexing emotional impact, I wanted to assess two other ones which are commonly used in the trauma literature to indicate recovery from traumatic experiences: basic beliefs and the search for meaning in the emotional experience. Although these two indices of recovery were essentially studied after extreme or traumatic life events, these were included in the present research on less intense emotional events because it was postulated that *everyday life emotion and traumatic experiences are not two distinct phenomena*. Trauma should be conceived as the extremity of a continuum on which emotion is located on a more intermediate position (see Philippot & Rimé, 1998). *Although differing in intensity, I assumed that the processes at work in emotion and in trauma are similar in nature and would simply differ in intensity or in extent*. In the present research, emotional recovery was thus indexed by the restoration of basic beliefs and the ability to understand and find meaning in the emotional event. The theoretical and empirical bases on which each of these indices of emotional recovery rely will be explained in more details below.

The work with victims of traumatic experiences has indicated that people hold a number of basic beliefs about themselves and the world. People hold these mental schemas in order to gain a sense of coherence, predictability and control over events, themselves, their social environment, and the world in general and to maintain a positive view of life (Janoff-Bulman, 1985, 1989, 1992; Parkes, 1972; Marris, 1958; Tait & Silver, 1989). These mental schemas are referred to as basic beliefs because they involve information that most people hold to the extent that they were not traumatised or did not encounter important emotional events that challenged them. Emotional events were hypothesised to challenge people's basic beliefs about the world and themselves (Janoff-Bulman, 1992). In particular, Janoff-Bulman (1989, 1992) documented this hypothesis. Based on her research comparing nonvictims with traumatised persons, she found that three categories of basic beliefs are indeed challenged among victims: (1) people's belief that the world is a good place (e.g., "There is more good than evil in the world"), (2) people's belief that events in the world are meaningful, that they "make sense,"

and that they are distributed by chance (e.g., "Bad events are distributed to people at random"), and (3) people's belief that they are worthy, good, capable, and moral (e.g., "I am very satisfied with the kind of person I am"). When people recover from a traumatic event however, they reconstruct new basic beliefs that are typically not completely negative: malevolence, meaningfulness, and self-abasement do not characterise anymore their core schemas and their self- and worldviews become often positive (Janoff-Bulman, 1992). Thus, although they acknowledge and know that their prior beliefs were naive and recognise the possibility of tragedy, they do not allow it to pervade their self- and worldviews.

A number of investigators have also documented that, after traumatic or threatening events, individuals frequently search for some meaning or try to make sense out of their negative experiences (Bulman & Wortman, 1977; Chodoff, Friedman, & Hamburg, 1964; Cornwell, Nurcombe, & Stevens, 1977; Frankl, 1963; Glick, Weiss, & Parkes, 1974; Silver & Wortman, 1980; Tait & Silver, 1989; S. E. Taylor, 1983). The search for meaning involves the need to understand why an emotional event occurred and what its impact for one's life has been. One of the ways in which meaning is addressed is through causal attributions. By understanding the cause of an event, one may also begin to understand the significance of the event and what it symbolises about one's life. Finding meaning in a traumatic or emotional event is thought to be one way for dealing with and adjusting to the event (Frankl, 1963; Klinger, 1977; McIntosh, Silver, & Wortman, 1993; Thompson & Janigian, 1988; Wortman, Silver, & Kessler, 1993). Shelley Taylor (1983) for example supported this hypothesis on cancer patients. She found that when positive meaning was construed from the cancer experience, it produced significantly better psychological adjustment. Similarly, Silver, Boon, and Stones (1983) found that victims of incest who were able to make sense of their experience were less psychologically distressed and better socially adjusted than those who were unable to make sense of the event.

3. Variations in type of communication

How one communicates about an event may differentially influence outcome variables. At least, four different ways of communication can be distinguished: a detailed communication of the emotional experience, a communication of only emotional aspects of the experience, a communication of only factual aspects of the experience, and a communication of the meanings associated with the experience. Each of these will be described in more details below.

A number of investigators have used an intervention which requires participants to write or talk *continuously and in great detail* about emotional upheavals. This type of instructions was commonly used in the experimental studies which were reviewed in Chapters 3 and 4 (Cameron & Nicholls, 1998; Donnelly & Murray, 1991; Esterling et al., 1994; Francis & Pennebaker, 1992; Murray et al., 1989; Murray & Segal, 1994; Pennebaker et al., 1987, 1988, 1990; Pennebaker & Francis, 1996; Petrie et al., 1995; Spera et al., 1994). As noted, this intervention

was found effective in improving participants physical health and in helping them to perform better as compared to control participants who wrote about trivial topics. Structured or semi-structured communication of emotion, where a sharing-target instructs an individual to talk *in details* about the emotional experience, may thus be a powerful method of the expression of many aspects of the emotional event. Thus, asking individuals to communicate all event-related thoughts, feelings, and facts may well help people to recover from their emotional events.

Two other types of instructions have also been used in the literature. There are indeed suggestions that one may need to *focus on specific aspects of the emotional experiences*. This hypothesis is based on research conducted by Pennebaker and Beall (1986) and by Mendolia and Kleck (1993). In his first research on the impact of disclosure of emotion, Pennebaker had distinguished between focus on factual and emotional aspects of the emotional episode (Pennebaker & Beall, 1986). This study provided evidence that writing about emotion-related feelings was more beneficial to people's long-term physical health (i.e., on number of self-reported physical symptoms at the 4-month follow-up) than writing only about facts. The communication of both emotions and facts related to an emotional event was even more beneficial to people's health (i.e., on the number of clinic visits for illness at the 6-month follow-up). Research conducted by Mendolia and Kleck (1993) also addressed this issue but in the context of communication of emotion not confined to non-social situations. They had postulated that, in the short term, focusing on an objective description of the stressful event should reduce personal relevance and decrease stress. On the other hand, focusing on one's emotional reactions in response to the event should exacerbate threatening aspects of the event and increase stress in the short term. In the long term, then, a habituation process would explain why in the emotion condition a decrease of stress would occur. In other words, the arousal in response to talking about one's emotional reactions should decrease over time. In support of their hypotheses, Mendolia and Kleck (1993, Study 1) found that when participants had talked as shortly as during 2 minutes to the experimenter about their emotional reactions to a stressful film (emotion condition), they were more autonomically aroused in the short-term (i.e., higher skin temperature) than participants who had talked about the sequence of events within it (fact condition). However, in a second study which tested the long-term effects, emotion condition participants had lower levels of autonomic arousal while being exposed to the stressful film again 48 hours later. They also reported more positive affect (i.e., self-reported positive moods) after being exposed again to the stressful film than did fact condition participants. These findings suggested that participants in the emotion condition *had recovered more* from the emotion *in the days following the communication* than participants in the fact condition.

Finally, it was hypothesised that focusing on the communication of the meanings and consequences of the emotional event may equally lead to emotional recovery. This hypothesis has remained untested up till now. However, it relies on published observations according to which, after traumatic events, people search for the meaning of the event and finding meaning indexes emotional recovery (S. E. Taylor, 1983). Stimulating this cognitive need should thus

contribute to emotional recovery. Thus, if people are asked to identify and communicate the positive and negative consequences of the emotional event and the meanings that the emotional episode had for them during a structured interview, they should be expected to recover from the emotion. Indeed, by talking about the meanings and consequences of the emotional event, people may be expected to find meaning, realise which were these consequences, acknowledge that there may have also been positive consequences: in a sense, recover from the emotion.

4. Design of the present study

The present study was designed to address the issue of whether the communication of specific aspects of the emotional experience leads to more recovery from the emotion. In contrast to Pennebaker, I was interested in consequences of talking that are not limited to non-social situations. Psychology students were thus asked to interview a volunteer about a recent negative emotional episode. Before the interview, interviewees rated how far this episode still affected them. The interview consisted of the communication of the emotional episode. It was conducted according to one of four modalities to which student interviewers were randomly assigned: (1) focus on feelings and emotions related to the episode (*Emotion-focused condition*), (2) focus on the meanings and consequences for their life (*Meaning-focused condition*), (3) focus on factual description of the episode (*Fact-focused condition*), and (4) no specific focus but detailed communication (*Free-focus condition*). Detailed instructions had to be followed by interviewers in conducting each of the experimental conditions. As in Mendolia and Kleck (1993), the follow-up session was conducted several days later. During this follow-up session, interviewees again rated the impact that the emotional episode still had.

5. Hypotheses

As shown in Figure 6.1, it was predicted that participants in the *Emotion-focused* and in the *Meaning-focused* conditions would recover more from the emotion as compared to participants in the *Fact-focused* condition. It was expected that interviewers in the *Free-focus* condition would be able to induce a detailed communication of the various aspects of the emotional experience (i.e., emotions, facts, and meanings). If this was the case, participants in this condition were expected to recover more than *Fact-focused* participants. If not, they were expected to recover to a similar extent as compared to *Fact-focused* participants.

Emotional recovery from the emotional episode

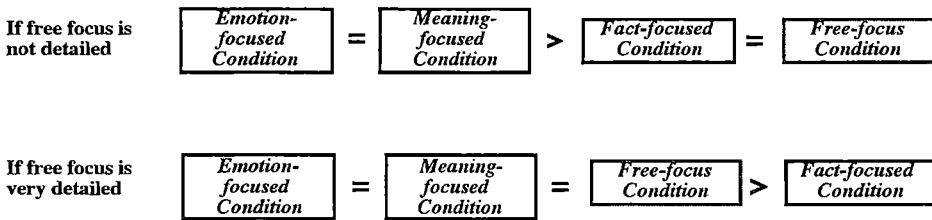


Figure 6.1 Theoretical hypothesis of Experiment 1

2. Method

1. Participants

One hundred and fifty-one psychology students (132 women and 19 men) enrolled in an advanced class on emotion each interviewed one of their relatives who had agreed upon a request to contribute to the student's training in the practice of interviewing. The students (interviewers) had to conduct an interview about a recent negative emotional episode experienced by the participant (interviewee). Interviewers received detailed instructions on how to conduct the interview. It was conducted according to one of four conditions to which they were randomly assigned. One hundred and fifty-one participants (106 women and 45 men) were thus interviewed. For different reasons (i.e., the interview was too short (< 10 minutes), the emotional episode was not recent thus, older than 3 years, see [Results](#) section), 21 of them (14%) were eliminated from the data.

The final sample consisted of 130 interviewees, with 94 women and 36 men. Interviewees' age ranged from 16 to 75 years ($M = 28.29$, $SD = 13.66$). A majority of them were students (60%). Other interviewees were workers, staff, or employees (24%), professional men/women (6%), house-keepers (4%), unemployed (3%), or retired people (3%). Most interviewees had education beyond the high school level (85%). Excluded interviewees did not differ from retained interviewees with regard to gender, $\chi^2(1, N = 151) < 1$, age, $t(149) < 1$, nor education level, $\chi^2(1, N = 151) = 1.91$, *ns*.

2. Procedure

Students in the third and fifth year of their curriculum for the undergraduate degree in psychology had chosen a class on emotion and expression. They were asked to collect data on emotional episodes. During a briefing session, the procedure was explained to them and they were prepared with regard to the interviewing instructions as well as ethical principles. The study *preceded* a phase during which they were taught about social sharing of emotion and the

hypotheses of the study. Interviewers were thus blind to hypotheses. Each student-interviewer randomly received an envelope with two sets of questionnaires, one for the pre-test measure and one for the post-test measure. In the envelope, they also received detailed instructions on how to conduct an interview with one of their relatives. In order to familiarise themselves with the procedure, they were asked to repeat the instructions and questions with one of their intimates. The whole procedure is depicted in Figure 6.2.

Interviewers were asked to find a person from their surroundings who would be ready to participate in a study on emotions. At the beginning of the first session, they asked the volunteer person to recall a recently experienced negative emotional episode that they still would like to talk about. Then, interviewees completed questionnaires assessing the emotional impact of the episode and the mental rumination and social sharing of the episode (cf. Measures section). Interviewers noted the time when the interview began. Instructions requested the semi-structured interview to last a minimum of 10 minutes. It consisted of the communication of the episode. For three conditions, detailed cueing questions were provided to interviewers.

In the Emotion-focused condition, the focus had to be on feelings and emotions experienced during the episode. Interviewees were told:

In an emotional situation, one usually experiences several different feelings or emotions. These feelings and emotions may sometimes be numerous and even sometimes in contradiction one with the other. I would like now to examine with you in great detail the diverse feelings or emotions that you have felt during this episode. For doing this, we will follow a list of possible emotions. For example, anxiety, interest, joy, sadness, anger, fear. For each of them, I will ask you to say whether you have felt it in this situation. If so, I will ask you to give me as many details as possible. I would like you to talk in detail about this emotion and tell me when you have felt it, what you have exactly felt, what was the intensity of the emotion, whether there were bodily sensations accompanying this emotion, and whether you showed what you felt or tried to hide it.

In the Meaning-focused condition, the focus had to be on the meanings elicited by the episode and on its impact on the person's beliefs and attitudes. Interviewees were told:

I would like to examine with you, in great detail, all meanings and consequences that the episode may have had for you. For doing this, we will follow a list of several questions that are intended to examine all types of possible consequences, positive and negative, that the episode might have had on you. For example, has this episode had positive or negative consequences on your self-image, your self-esteem, your self-confidence, your self-control, or on your relationships with others, your confidence in others, or on your future? For each question, I would like you to answer by giving as many details as possible.

In the Fact-focused condition, the focus had to be on the factual aspects and the description of the episode. Interviewees were told:

I would like to examine with you, in great detail and in the order of sequence of the events, all what happened during this emotional episode. Indeed, it is usual that during emotional episodes, one records all sorts of details, for example where you were, who was there, what you were doing, what was said and done. For doing this, we will take several questions that are intended to examine all possible elements. For example, what happened before, during and immediately after the episode? When was it? What were you doing and what have you done? What was happening around you? Who was there? What were these persons doing? Where were you exactly? Describe this place in great detail (colours, objects, noise, etc.). What exactly have you seen and heard? For each question, I would like you to answer by giving as many details as possible.

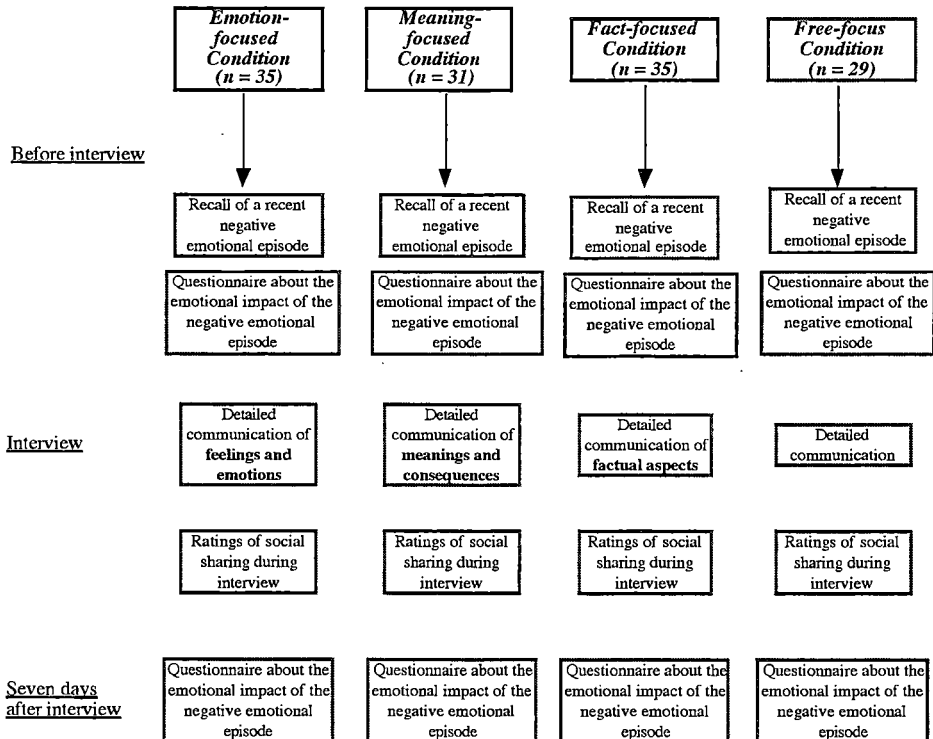


Figure 6.2 Procedure of Experiment 1

In a fourth condition, the interviewer had the interviewee talking in detail about the emotional episode with no specific focus (Free-focus condition). Interviewees were told:

I would like you to talk at great length and in great detail about all what happened during this emotional episode. I would like you to take your time and to tell me as many details as possible about what happened.

The interviewer was given no cueing questions but was asked to keep the conversation as long as possible and to ask questions only to show interest and to get more information. This had to be done in a non-directive way, that is carrying on with what the person said.

At the end of the interview, interviewees completed a questionnaire designed to check in how far the intended interviewing condition was actually met (i.e., ratings of social sharing during interview). When the interviewee answered these questions, the interviewer noted the time when the interview ended and briefly reported the type of emotional episode that the interviewee had talked about. Interviewees were then thanked for participation and an appointment was made for the follow-up session conducted 7 days later.

At the follow-up session, both Emotional Impact of the Episode Questionnaire and Mental Rumination and Social Sharing Questionnaire were completed again. Interviewees were then extensively debriefed and thanked for their contributions.

3. Measures

Emotional Impact of the Episode Questionnaire.

Emotional intensity scale. Interviewees rated on a 7-point scale (*not at all* (0) / *strongest upset ever possible* (6)), the extent to which they were upset when thinking about the emotional episode now.

Differential emotional scale. Interviewees rated, along 7-point scales (*not at all* (0) / *a great deal* (6)), how intensely the episode evoked the following primary emotions when thinking about it now (e.g., Izard et al., 1974): Interest, joy, sadness, anger, fear, anxiety, disgust, contempt, surprise, shame, guilt, and elation. Because negative emotions and negatively keyed positive emotions showed internal consistency (Cronbach's $\alpha = .82$), a total mean score of negative emotions was computed.

Bodily sensations. Interviewees rated along 7-point scales, (*not at all* (0) / *a great deal* (6)), the extent to which they were feeling the following bodily sensations while thinking about the episode now: (1) lump in throat, (2) heartbeat acceleration, (3) respiration changes, (4) chest oppression, (5) stomach sensations, (6) sweating, (7) feeling hot, (8) feeling cold, (9) muscle tension, (10) shaking, (11) muscle relaxation, (12) impression of boiling, and (13) feeling

warm or burning cheeks. Because these items showed internal consistency (Cronbach's $\alpha = .85$), ratings were averaged to obtain a bodily sensation score.

Action tendencies. Interviewees rated on 7-point scales, (*not at all* (0) / *very much* (6)), the extent to which they would like to perform the following acts: (1) going towards someone or something, (2) avoiding, going away, (3) hitting, kicking, destroying, (4) screaming, insulting, (5) saying bad words, (6) singing, dancing, laughing, (7) moving, (8) disappearing, (9) crying, (10) protecting oneself, and (11) feeling paralysed. Because these items showed internal consistency (Cronbach's $\alpha = .74$), ratings were averaged to obtain an action tendency score.

Basic beliefs. Interviewees rated on 7-point scales, (*not at all* (0) / *very much* (6)), the extent to which they felt that the episode still had an impact on the following areas of their lives: (1) their self-image; (2) the other's image of themselves; (3) their view of the world; (4) their view of other people; (5) their current life; and (6) their intimate friends' life. Again, these items showed internal consistency (Cronbach's $\alpha = .68$) and ratings were averaged to obtain a challenged basic beliefs score.

Search for meaning. Interviewees rated on 7-point scales, (*not at all* (0) / *very much* (6)), how far they still experienced event-related cognitive needs: (1) need to understand why and how it happened; (2) need to imagine how things would be if the episode had not occurred; (3) need to find words to express; (4) need to find understanding; (5) need to accept what happened; (6) need to forget what happened, and (7) need to find meaning in what happened. Because these items showed internal consistency (Cronbach's $\alpha = .76$), ratings were averaged to obtain a search for meaning in the episode score.

Remaining emotional impact. Interviewees finally rated on 7-point scales, (*not at all* (0) / *a great deal* (6)), how far the episode was (1) recovered from; (2) still painful; (3) still inducing emotional involvement; (4) still affecting them; (5) still involving hurting thoughts. Because these items, with the first item negatively keyed, showed internal consistency (Cronbach's $\alpha = .82$), ratings were averaged to obtain a remaining emotional impact score.

Mental Rumination and Social Sharing Questionnaire.

Mental rumination. Interviewees rated the frequency of their ruminations about the episode during the last seven days along a 7-point scale (*never* (0) / *6 times or more* (6)). Furthermore, they estimated on 7-point scales (*not at all* (0) / *very much* (6)) how far during the last seven days the event-related thoughts (1) had "popped up" in their minds; (2) had kept their attention; (3) had been long-lasting; (4) had involved vivid images; (5) had disrupted their current activities; (6) had been self-provoked; (7) had been difficult to eliminate; and (8) had been uncontrollable. Because these items showed internal consistency (Cronbach's $\alpha = .74$), ratings were averaged to obtain a mental rumination score.

Social sharing. Two aspects are usually considered in social sharing: the need to share and the quantity of social sharing (Rimé et al., 1992). Interviewees rated on a 7-point scale (*not at all* (0) / *a very strong need* (6)) how far they needed to talk about the episode during the last seven days. Additionally, they rated on two 7-point scales (*never shared* (0) / *shared 6 times or more* / *with 6 persons or more* (6)) how frequently and to how many persons they had talked about the episode during the last seven days. These two scales showed high internal consistency (Cronbach's $\alpha = .94$) and ratings were averaged to obtain a quantity of social sharing score.

Interviewees' ratings of extent of social sharing during the interview.

At the end of the interview, interviewees rated, on 7-point scales (*not at all* (0) / *a great deal* (6)), the extent to which they had shared during the interview (1) the facts and circumstances of the emotional episode (frame, place, context, witnesses, actions, etc.), (2) the emotional feelings that they experienced in this episode (feelings, emotions, etc.), and (3) the meanings that this episode have for them (views of themselves, of other people, of the world in general). These items served as manipulation check questions.

3. Results

1. Conformity to instructions and manipulation checks

Conformity to instructions.

Interviewers had been instructed to conduct an interview which would allow the interviewee to talk in details and at great length about their emotional episode. Interviews that had lasted less than 10 minutes were thus eliminated from the sample. This was the case for 16 interviews. Interviewees were also asked to recall a recent emotional episode. For homogeneity purposes, emotional episodes that had happened more than 3 years before the beginning of the study were also eliminated. This was the case for 5 additional interviewees. Thus, the sample on which analyses were conducted consisted of 130 interviewees, with 94 women and 36 men. Excluded interviewees tended to differ from kept interviewees with regard to condition, $\chi^2_{\text{Fischer}}(3, N = 153) = 8.03, p = .051$. Respectively, 10/39 interviewees (26%) in the Free-focus condition, 6/37 interviewees (16%) in the Meaning-focused, 3/38 interviewees (8%) in the Fact-focused, and 2/37 interviewees (5%) in the Emotion-focused condition were excluded. It is possible that because only interviewers in the Free-focus condition were given no specific cueing questions, it was more difficult for some of them to keep the verbalisation longer than 10 minutes. Respectively, 35 interviewees remained in the Emotion-focused condition, 35 in the Fact-focused condition, 31 in the Meaning-focused condition, and 29 in the Free-focus condition.

On average, interview lasted 29.13 minutes ($SD = 17.85$) with a minimum of 10 minutes of interview and a maximum of 105 minutes. A one-way analysis of variance (ANOVA) indicated that length of interview did not differ from one condition to another, $F(3, 126) < 1$, *ns*.

Manipulation checks.

Next step in controlling whether interviewers conformed to the instructions involved the check of the interviewees' rating of the extent to which they had talked about facts, emotions, and/or meanings related to their emotional episode. Because specific differences between groups were expected, between-groups differences were assessed using planned contrasts on interviewees' ratings of extent of social sharing during the interview. Means and standard deviations for these three items are shown in Table 6.1. A planned comparison tested whether interviewees in the Fact-focused and Free-focus conditions had talked more about factual aspects than interviewees in the Emotion- and Meaning-focused conditions. It yielded a highly significant result, $F(1, 125) = 45.79$, $p < .0001$, and thus confirmed that this was actually the case. A planned comparison tested whether interviewees in the Emotion-focused and Free-focus conditions had talked more about emotional aspects related to the episode than interviewees in the Meaning- and Fact-focused conditions. Again, the test yielded a highly significant result, $F(1, 126) = 6.34$, $p = .01$, and thus confirmed that this was actually the case. Finally, although interviewees in the Meaning-focused and Free-focus conditions were expected to have talked more about the meanings and consequences of the episode than interviewees in the Emotion- and Fact-focused conditions, this was not the case, $F(1, 125) = 1.61$, *ns*.

Table 6.1 Means (*SDs in parentheses*) of the Manipulation Check Questions as a Function of Sharing Condition

Measures	Conditions			
	Free-focus (<i>n</i> = 29)	Emotion-focused (<i>n</i> = 35)	Fact-focused (<i>n</i> = 35)	Meaning-focused (<i>n</i> = 31)
Talked about facts	5.03 (1.09)	3.71 (1.62)	4.63 (1.19)	2.70 (1.44)
Talked about emotions	4.14 (1.57)	4.49 (1.31)	4.03 (1.62)	3.23 (1.61)
Talked about meanings	3.52 (1.67)	3.46 (1.84)	3.26 (1.95)	4.00 (1.64)

Note. Measures could vary from 0 (*not at all*) to 6 (*a great deal*).

Although examination of the mean in the Meaning-focused condition suggests that interviewers in this condition were to some degree able to induce the communication of meanings and consequences of the emotional episode ($M = 4.00$) more than in the other

conditions (respectively for Free-focus, Emotion-focused, and Fact-focused, $M_s = 3.52, 3.46$, and 3.26), interviewees in this condition did not report having *significantly* talked more about the meanings of the episode than in the other conditions. This might have impaired the comparisons in emotional recovery that was induced by the manipulation. However, importantly, *each condition could be discriminated one from the other*. As expected, interviewers in the Free-focus condition were able to induce a very detailed communication of both the facts and feelings related to the emotional event. Interviewees in this condition are those who have talked in the most detailed manner both about the facts and emotions related to the episode. According to the efficacy found in previous studies that used this "detailed free-focus" instructions (e.g., Cameron & Nicholls, 1998; Pennebaker et al., 1987, 1988, 1990), they would be expected to recover more than participants in the other conditions because they were the ones who talked about the emotional experience with the more details. Interviewees in the Emotion-focused condition have talked in a very detailed manner about emotions, but not the facts related to the episode. Following the reasoning of Mendolia and Kleck (1993), they should benefit more than interviewees who have talked only about factual aspects of the emotional event. Interviewees in the Fact-focused condition have talked in a very detailed manner about facts related to the episode but not about their feelings and emotions. Although talking only about event-related facts should not be as beneficial as compared to the communication of emotional aspects, it should be more beneficial as compared to individuals who have talked about the episode in a less detailed manner about both the facts and emotions related to the episode (interviewees in the Meaning-focused condition).

Thus, after examination of the degree of social sharing during the interview, interviewees in the Free-focus condition were expected to recover more from the emotional episode as compared to interviewees in the Emotion-focused condition, who were themselves expected to benefit more than interviewees in the Fact-focused condition. Finally, interviewees in the Meaning-focused condition who have focused less on emotional and factual aspects of the emotional episode were expected to recover less than interviewees in any of the other conditions. This hypothesis drawn from the actually induced extent of social sharing during the interview is depicted in Figure 6.3.

Emotional recovery from the emotional episode

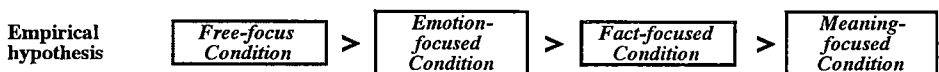


Figure 6.3 Empirical hypothesis of Experiment 1

Equivalence in emotional impact at the beginning of the study.

The final check before testing the impact of the four communication conditions on emotional recovery was to verify that interviewees were equivalent between conditions with regard to the dependent variables before the interview. Because emotional intensity, negative emotions, bodily sensations, action tendencies, challenged basic beliefs, search for meaning, and remaining emotional impact reflect a general emotional impact response, all seven facets were simultaneously subjected to a 4 X 7 (Condition X Emotional impact facet) between-within multivariate analysis of variance (MANOVA). Contrary to expectations, across all seven facets of emotional impact, a significant Condition effect, $F(3, 126) = 4.76, p < .01$, was obtained. Separate ANOVAs on each of the facets of emotional impact indicated that the above effects were attributable to significant effects on negative emotions and remaining emotional impact before the interview and to marginally significant effects on action tendencies and challenged basic beliefs before the interview. Post-hoc tests and examination of the means indicated that the emotional impact was more intense on these variables among interviewees in the Meaning-focused condition as compared to interviewees in the Free-focus and Emotion-focused conditions (see Table 6.2). One-way analyses of covariances will thus be used to control for these initial differences.

Table 6.2 Means (SDs in parentheses) of Emotional Impact Before Interview as a Function of Interview Condition

	Conditions				Effect
	Free-focus (n = 29)	Emotion- focused (n = 35)	Fact- focused (n = 35)	Meaning- focused (n = 31)	
Emotional intensity	3.00 (1.41)	2.80 (2.07)	3.60 (1.82)	3.39 (1.56)	1.46
Negative emotions	2.48 b (0.80)	2.48 b (0.87)	3.00 ab (0.88)	3.20 a (0.98)	5.51 **
Bodily sensations	1.42 (1.18)	1.11 (0.94)	1.35 (0.93)	1.58 (1.21)	1.11
Action tendencies	1.13 (0.80)	1.24 (0.97)	1.64 (1.07)	1.66 (1.04)	2.49 †
Challenged basic beliefs	2.55 (1.21)	2.14 (1.43)	2.77 (1.32)	2.95 (1.29)	2.39 †
Search for meaning	2.62 (1.57)	2.60 (1.59)	3.25 (1.47)	2.93 (1.41)	1.40
Remaining emotional impact	2.41 b (1.29)	2.79 b (1.42)	3.52 ab (1.24)	3.57 a (1.20)	6.04 ***

Note. Measures could vary from 0 to 6 and higher scores reflect greater emotional intensity, negative emotion, bodily sensations, etc. Means with different subscripts are significantly different at $p < .05$, using Bonferroni post-hoc test.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

The three facets of the Mental Rumination and Social Sharing Questionnaire before interview were simultaneously subjected to a 4 X 3 (Condition X Long-lasting Effects of Emotion). Across all three facets, no significant Condition effect was found, $F(3, 126) = 1.41, ns$. Mental rumination and social sharing were thus considered similar across conditions before the interview.

2. Description of the collected emotional materials

Of the 130 recent negative emotional episodes, 28% dealt with accidents, being in danger, or aggression situations, 15% with death including suicide of a close person, 15% with academic or professional problems, such as failing an examination or being fired, 11% involved health problems, and 10% centred on love relationship problems, such as braking up. Other topics included relationship problems with friends or relatives (9%), divorce, separation, or quarrels among or with parents (8%), or sexual problems (1%). The remaining episodes (3%) were related to fearful situations (e.g., getting lost, fear of air travel, fear of being followed and raped).

The episodes had occurred on average 5.65 months before the beginning of the study ($SD = 6.82$; *Minimum* = during the week of the interview; *Maximum* = 29 months ago). Conditions did not significantly differ with regard to the period of time elapsed since the episodes' occurrence, $F(3, 126) < 1$. Episodes were considered to be negative at their occurrence ($M = 4.78$; $SD = 1.21$). The valence of the episodes did not significantly differ from one condition to another, $F(3, 126) < 1$. The emotional intensity felt before the interview was on average 3.20 ($SD = 1.76$) on the scale from 0 = *no upset* to 6 = *strongest upset ever possible*. The current emotional intensity of the episodes did not significantly differ from one condition to another, $F(3, 126) = 1.46, ns$.

3. Does communication of emotion help to recover from the emotion?

Emotional impact of the episode. All seven facets of Emotional Impact of the Episode Questionnaire were simultaneously subjected to a 4 X 2 X 7 (Condition X Time X Emotional impact facet) between-within repeated measures multivariate analysis of variance (MANOVA). Across all seven facets of emotional impact, a highly significant Time effect, $F(1, 124) = 129.06, p < .0001$, was obtained. This indicated that the overall emotional impact had evolved from before the interview to seven days after the interview. In addition, a marginally significant Condition X Time interaction, $F(3, 124) = 2.08, p = .11$, was found. The MANOVA also yielded a significant Condition main effect, $F(3, 124) = 3.19, p = .026$, a significant Emotional impact facet main effect, $F(6, 744) = 80.86, p < .0001$, and a significant

Time X Emotional impact facet interaction, $F(6, 744) = 7.07, p < .0001$. No other interactions were significant ($F_s \leq 1$).

Separate repeated measures ANOVAs on each of the emotional impact facets indicated that highly significant main effects of Time were found on each of the emotional impact facets, indicating a lowering of emotional intensity, negative emotions, bodily sensations, action tendencies, search for meaning, and remaining emotional impact as well as a reconstruction of the interviewees' basic beliefs from before to after the interview. These MANOVAs also indicated that the marginally significant Condition by Time interaction was attributable to the significant Condition by Time interactions found on negative emotions, $F(3, 124) = 3.92, p < .05$, and remaining emotional impact, $F(3, 124) = 3.21, p < .05$. Group means are shown in Table 6.3. Because between-group differences had been found on the Emotional Impact of the Episode Questionnaire before the interview, one-way analyses of covariance with measures of emotional impact before the interview as covariates (ANCOVAs) were also used to check that these interactions were not due to pre-interview differences. Contrary to expectations, these ANCOVAs yielded non significant results on negative emotions, $F(3, 124) = 1.47, ns$, and on remaining emotional impact, $F(3, 124) = 1.66, ns$. This indicated that interviewing conditions did not differ in their capacity to elicit emotional recovery and that the significant Condition X Time interactions were due to the significant Condition main effect before interview.

Mental rumination and social sharing. The three facets of the Mental Rumination and Social Sharing Questionnaire were simultaneously subjected to a 4 X 2 X 3 (Condition X Time X Facet) between-within measures multivariate analysis of variance (MANOVA). Across all three facets, a highly significant Time effect, $F(1, 126) = 57.41, p < .0001$, was obtained. Contrary to expectations, no significant Condition X Time interaction was found, $F(3, 126) = 1.08, ns$. With the exception of the Facet main significant effect, $F(2, 252) = 24.10, p < .0001$, no other main effect or interactions were significant.

Separate repeated measures ANOVAs on each of the mental rumination and social sharing facets confirmed the above significant effect of Time and non significant Condition X Time interaction (see Table 6.3). These analyses thus indicated that mental ruminations, need of social sharing, and quantity of social sharing decreased from before to seven days after the interview. Interviewing conditions did, however, not differ in their capacity to change the cognitive and social aftermaths of recent negative episodes.

Table 6.3 Means of Facets of Emotional Impact of the Episode and Mental Rumination and Social Sharing Questionnaires by Condition Before and 7 Days After the Interview

	Conditions				Effect		
	Free- focus (n = 29)	Emotion- focused (n = 35)	Fact- focused (n = 35)	Meaning- focused (n = 31)	Condition	Time	C x T
Emotional intensity					1.45	70.13 **	< 1
Before the interview	3.00	2.80	3.60	3.39			
7 days after the interview	1.86	2.06	2.56	2.10			
Negative emotions					3.33 *	81.80 **	3.92 *
Before the interview	2.48 b	2.48 b	3.00 ab	3.20 a			
7 days after the interview	2.04	2.04	2.43	2.14			
Bodily sensations					1.16	41.65 **	1.18
Before the interview	1.42	1.11	1.35	1.58			
7 days after the interview	0.85	0.73	1.09	1.03			
Action tendencies					3.31 *	39.88 **	< 1
Before the interview	1.13	1.24	1.64	1.66			
7 days after the interview	0.71	0.76	1.29	1.05			
Challenged basic beliefs					1.66	29.82 **	2.12
Before the interview	2.55	2.14	2.77	2.95			
7 days after the interview	1.97	1.83	2.38	1.97			
Search for meaning					1.19	39.36 **	< 1
Before the interview	2.62	2.60	3.25	2.93			
7 days after the interview	1.90	2.11	2.45	2.24			
Remaining emotional impact					3.49 *	46.02 **	3.21 *
Before the interview	2.41 b	2.79 b	3.52 ab	3.57 a			
7 days after the interview	2.13	2.43	2.88	2.63			
Mental rumination					2.02	54.21 **	1.81
Before the interview	2.34	2.37	2.92	2.95			
7 days after the interview	1.79	2.04	2.37	2.14			
Need to share					1.77	38.57 **	< 1
Before the interview	2.38	2.86	3.11	2.74			
7 days after the interview	1.41	2.06	2.37	1.90			
Quantity of social sharing					< 1	15.66 **	1.70
Before the interview	1.64	1.87	1.81	2.23			
7 days after the interview	1.24	1.06	1.60	1.06			

Note. Measures could vary from 0 to 6 and higher scores reflect greater intensity of emotion, stronger need to share, etc. Means with different subscripts are significantly different at $p < .05$, using Bonferroni post-hoc test.

† $p < .10$. * $p < .05$. ** $p < .0001$.

4. Alternative explanation

In the present study, interviewing conditions did not differ in their capacity to elicit emotional recovery. However, it can be argued that interviewers were not sufficiently able to *induce* the specific communication asked in the instructions. Indeed, even if each group could be differentiated one from the other according to the extent of social sharing during the interview, one could think that these differences may not be sufficient to show significant differences in emotional recovery. In addition, interviewees in the Meaning-focused condition were not able to *significantly* induce more communication of the meanings and consequences of the event. Thus, if very extreme groups of interviewees were selected in each condition of communication according to their *actual induced extent of social sharing during the interview*, one may find significant effects on emotional recovery. In other words, one should select interviewees in the Fact-focused condition who have indeed highly communicated facts, interviewees in the Emotion-focused condition who highly communicated emotions and feelings, and interviewees in the Meaning-focused condition who highly communicated meanings and consequences during the interview. This hypothesis was tested. Interviewees in each of these three conditions were eliminated in function of their ratings on each of the respective items of extent of social sharing during the interview (i.e., when interviewees had rated less than 4 on the respective scales from *not at all* (0) to *a great deal* (7)). Accordingly, 7 interviewees in the Fact-focused condition, 9 in the Emotion-focused condition, and 11 in the Meaning-focused condition were excluded from the sample.

Again, the seven facets of emotional impact of the episode were simultaneously subjected to a 4 X 2 X 7 (Condition X Time X Emotional impact facet) MANOVA. Across all seven facets of emotional impact, a highly significant Time effect, $F(1, 98) = 120.03$, $p < .0001$, was obtained again. However, confirming previous conclusions, no significant Condition X Time interaction, $F(3, 98) = 1.42$, *ns*, was found. When testing between-group differences using separate ANCOVAs, these tests yielded non significant results on each of the emotional impact measures as well as on each of the mental rumination and social sharing measures (all p 's $> .15$). Thus, contrary to expectations, this indicated that the interviewing conditions had failed to elicit different levels of emotional recovery.

4. Discussion

The present study was designed to address the issue of whether the communication of specific aspects of the emotional experience leads to more recovery from the emotion. Some of the mechanisms that underlie the beneficial effects of communication of emotion on emotional recovery were explored. It was expected that an emotion-focused communication and a communication focused on the meanings and consequences of the emotional event would be more beneficial for emotional recovery than the mere communication of facts related to the emotional event. These communications which focused on specific aspects of the emotional

experiences were compared to a communication of emotions without constraints to share one or another aspect of the emotional event but which asked interviewees to give as many details as possible on the emotional experience. Consistent with the prediction that interviewers would be able to induce a very detailed communication of thoughts, feelings and facts, interviewees in the Free-focus condition indeed reported more social sharing during the interview as compared to interviewees in the other conditions. Thus, consistent with previous empirical studies which used this type of instructions, interviewees in this condition reported a very high level of social sharing. They were thus expected to recover more than interviewees in the other conditions.

Contrary to expectations however, none of the conditions significantly differed in the degree to which interviewees had recovered from the event at the follow-up. Thus, contrary to what Mendolia and Kleck (1993) had found on subjective well-being, in the present study, individuals who had communicated their emotions did not recover more than participants who had only communicated the event-related facts. Very consistent findings were found on each of the various facets assessing emotional impact. Even when participants were selected according to their actual levels of induced social sharing during the interview, none of the results revealed to be significant. This was very surprising. This suggested that either the communication of emotional experiences *is not beneficial* to recovery from an emotional event—an implication that would contradict all common assumptions in the literature and lay people's beliefs—or that *any* communication of emotional experiences, regardless of the aspect that is communicated, *is beneficial* to emotional recovery. At first sight, one would be inclined to trust this second hypothesis. Indeed, examination of the results indicated that, at the follow-up seven days after communication, all interviewees' emotional impact had decreased in intensity. Very significant time effects were found on each of the aspects of emotional impact. Namely, as compared to before the interview, at the follow-up, interviewees scored lower for intensity of felt emotions, action tendencies, bodily sensations, need to find meaning, need to share their emotions, and mental ruminations. Their basic beliefs had also been restored. Altogether, these observations indeed suggested that the communication of emotions had helped people to recover from their emotions. There is, however, a methodological problem that precludes one from concluding that this was indeed the case. This is discussed in more details below.

5. Study limitations

Because emotional recovery was observed in each of the interviewing conditions, it is possible that each of the communication conditions had elicited emotional recovery from the emotional episode. At the time the study was conducted, that is during the academic year of 1994-1995, it seemed evident that an interview of about 30 minutes would influence emotional recovery in a different manner from one condition to another. At that time, most of the experiments that had been published had optimistically concluded that the *communication of emotions* had beneficial effects. Such manipulation was thus expected to "work" as compared to

the communication of only facts (cf. Pennebaker & Beall, 1986; Mendolia & Kleck, 1993). As most lay people, I strongly believed that talking about emotional events *in an emotional manner* would be helping people to recover from the emotion *more than the communication of event-related facts*. Contrary to expectations, the results, however, indicated that the effects of communication of emotion was not mediated by the specific aspects of the emotional experiences that were communicated.

These results are inconsistent with the conclusions of the empirical review (Chapter 4, this dissertation), with Pennebaker and Beall's (1986) findings, as well as with Mendolia and Kleck's (1993) ones. The basic postulate of Mendolia and Kleck was that in the short term, people in an emotion condition would experience more distress, physical arousal, and negative moods than participants in the fact condition. In the long term then, habituation processes would occur in the emotion condition. The first limitation of the present study was that the short-term effects have not been investigated, and it is not known whether habituation processes may have happened in the Fact-focused condition as well as in the Emotion-focused condition. A future investigation should then assess *immediate effects of communication of emotion* to examine whether habituation processes may have been at work in both Fact- and Emotion-focused conditions.

A second limitation of the present study is that one cannot determine whether the communication of emotional experiences has *really* helped people to recover. Indeed, the observed recovery effects may be due to spontaneous remission (or regression to the mean), to the communication of the emotional experiences, or even to unspecific beneficial factors of the communication. Thus, a design controlling for the communication of non-emotional matters is required. As mentioned earlier in Chapter 3 and 4, a control group of individuals who did not communicate the event-related emotions or facts is needed to indicate whether the communication of emotional experiences is beneficial for the individual. A trivial control group would allow to control for the unspecific or common factors that may explain whether people in the present study have recovered *because they talked about their emotional experience*. More precisely, such a control group would allow to control for the time evolution and other "unspecific beneficial factors", such as the personal contact with the experimenter, the time spent doing something, and the completion of a task involving cognitive and verbal processing. The following study was conducted to remedy to this problem.

A third limitation of this study is that manipulation checks relied only on self-reported measures given by the interviewees just after the interview. Although significant differences were observed between conditions on the measures of extent of fact and emotion sharing during the interview, it is possible that interviewees were influenced in their reports by the instructions given. It was thus impossible to verify whether interviewees have indeed talked to different degrees about fact or emotion-related topics because the present study did not involve *objective measures*. In future investigation of these specific differences, video or tape-recordings of participants' actual social sharing content should be made.

6. Conclusions

To conclude, these findings suggest that the effects of the communication of emotional experiences on emotional recovery were not mediated by the specific aspects that were communicated about. Emotional recovery was observed in each of the conditions. However, the present design does not allow differentiation between effects that would be due to the *communication of emotional experiences* or to other unspecific factors. The next study was designed to explore these respective effects and to overcome the limitations of the present study.

Chapter 7. Experiment 2 on the impact of communication of emotion on emotional recovery, subjective well-being, physical health, and perceived benefits

1. Introduction

1. Controlling for unspecific beneficial factors: The use of a trivial condition

In the previous study, it was taken for granted that *talking about one's emotions would be beneficial for emotional recovery*. It was expected that emotional recovery would be differentially induced as a function of the focus of communication. This was not the case and the focus of communication did not mediate the effects of communication of emotion. The purpose of this second study was to control for the unspecific factors that could have explained that participants in all conditions in the first experiment had benefited from the communication of their emotional experience. I thus tested whether the communication of emotion was indeed more beneficial than the communication of trivial topics. This study, conducted in a laboratory setting, tested whether the communication of emotion allows emotional relief, and thus, as in Experiment 1, emotional recovery outcomes were assessed.

2. The focus of communication: Factual vs. emotional aspects

In the previous study, there were no short-term measures of physical symptoms or negative moods. It was thus not possible to indicate whether, as Mendolia and Kleck (1993) have suggested, participants in the Emotion condition experienced more distress in the short term as compared to participants in the Fact condition. According to their reasoning, this would then allow long-term habituation in the Emotion condition and thus help these participants to recover from their emotions. In the present study thus, the immediate effects of the communication of emotion were assessed by measures of physical symptoms and subjective well-being. If participants in both a factual-focused and an emotional-focused communication condition are not different in their reported physical symptoms and negative moods immediately after the communication, this could then explain why no differences between conditions were found on emotional recovery in the previous experiment. Indeed, if participants in both conditions experience an immediate reactivation of distress, they can thus be expected to benefit in the longer term from emotional recovery.

The hypothesis that both factual and emotional focused communication would reactivate immediate physical symptoms and negative moods is consistent with most of the literature in which a detailed but unfocused communication was induced. In comparison with control participants who do not communicate emotional topics, the communication of emotional experiences was found to reactivate immediate distress (e.g., Donnelly & Murray, 1991; Francis & Pennebaker, 1992; Knapp et al., 1992). Thus, it can be expected that people who give either a factual or emotional description of an emotional event will experience an immediate reactivation of distress.

3. Communication induces perceived benefits

Sharing an emotion is a behaviour that people develop willingly, regardless of the aversive immediate effects of communication. In addition, I have shown in Chapter 2 that people actually believe that sharing is beneficial. In fact, the review of previous studies on the impact of communication of emotion (see Chapter 4, this dissertation) indicated that participants who had communicated their emotional *subjectively benefit* from the communication of emotion. They perceived that it was meaningful, that it helped them to think differently about the event, and that they had felt positive effects from the communication (e.g., Cameron & Nicholls, 1998; Donnelly & Murray, 1991; Pennebaker et al., 1990).

Because people believe that talking about one's emotions is beneficial, they should report more beneficial subjective benefits when they talk about their emotional experiences as compared as to when they talk about trivial matters. In the same line of reasoning, people should also perceive more benefits when they specifically talk about their event-related feelings. Indeed, according to common sense, talking only about factual aspects should be perceived as "something less", or "less active" than the communication of feelings. Although this representation is common, the question still remains: *on which basis would people report benefits from the communication of their emotions?* Are these beneficial effects associated to *real benefits*? Or are they rather related to people's *belief* that communication of emotion should be beneficial? In the present study, these two possible explanations were empirically examined by testing of the relationship between, on the one hand, participant's perceived benefits of the communication and, on the other hand, people's beliefs about the effects of communication of emotion or the adjustment reached at follow-up.

4. Checking the manipulation

A limitation of the previous study was that checks on whether interviewees had focused on specific aspects of their emotional experience only relied on self-reported measures. In the present study thus, *objective measures* were used. *What happened during the interview was video and tape-recorded.* Judges decoded the videos and the interview was content analysed

with a computerised text analyser. These measures were compared with participants' self-reported measures. This allowed to determine whether participants were able to accurately report the degree to which they talked about focused specific topics.

5. Replication of previous studies on long-term physical health and well-being

This study also assessed dependent variables that were commonly used in previous research by Pennebaker and colleagues. Specifically, Pennebaker's measures of physical symptoms, number of illnesses, number of days of absence due to illness, and number of illness visits to the physician were also examined. These measures were used to check whether previous findings on the beneficial long-term physical effects of communication of emotion were replicable. This question was investigated because the empirical review had indicated that the effects of communication of emotion on physical health are not as obvious as it is usually assumed to be. Several studies had tested these effects on self-reported health measures. Results of these studies were mixed on this type of outcomes: some demonstrated a beneficial effect of the communication of emotion on subjective physical health, but other ones failed to show that communication of emotion had beneficial effects. These variables were thus assessed to examine this question. Finally, the effects of communication of emotional experiences on health behaviours and subjective well-being were also investigated. Although most of the previous studies had found no beneficial effects on these types of variables, I wanted to check whether this was indeed the case.

6. Design of the study

In this controlled experimental study, participants were randomly assigned to one of three conditions of communicating a memory with an experimenter (Zech & Rimé, 1996). In two of the conditions, participants were instructed to talk about the most upsetting episode which had happened in their lives. In one of these conditions, they were instructed to focus on their feelings related to the episode (Emotion condition). In the other, they were instructed to talk about the episode-related facts (Fact condition). In a third condition (Trivial), participants were instructed to talk about a trivial topic. This latter condition was included to control the non specific potential benefits elicited in communication situations. Dependent variables included ratings of emotional impact, physical symptoms, and subjective well-being. These were collected before, immediately after, one week, and two months after sharing. Participants also rated their physical health before communication and at the two months follow-up. Finally, at the end of the study, participants were asked whether they felt that the communication had been beneficial to them.

7. Hypotheses

The following hypotheses which are represented in Figure 7.1 were addressed:

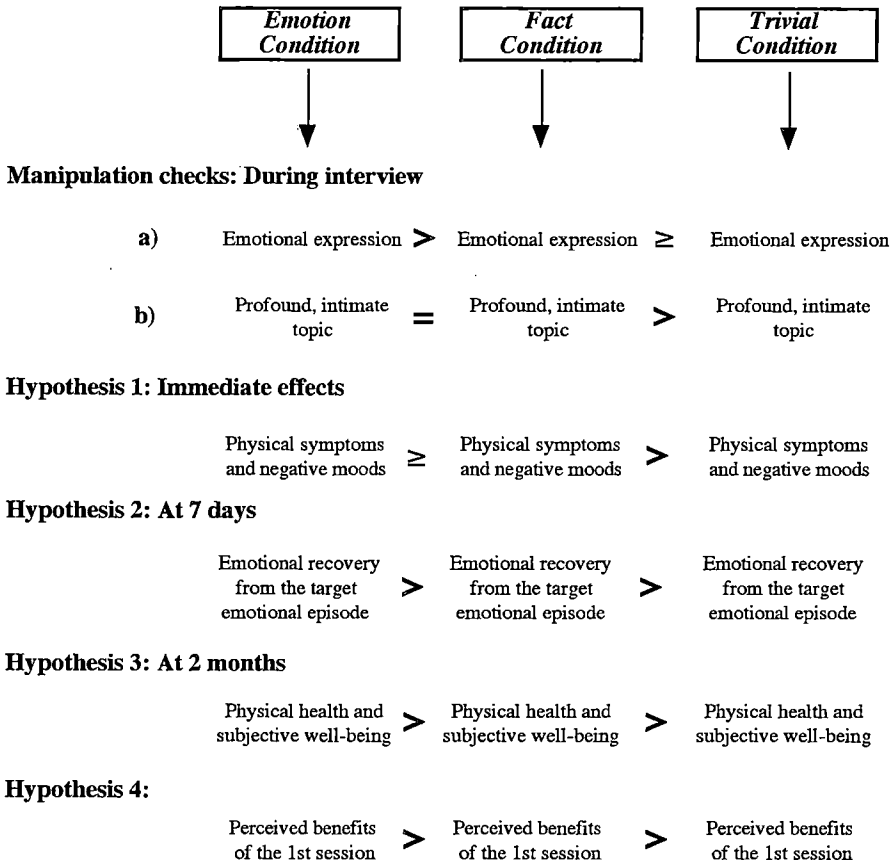


Figure 7.1 *Hypotheses of Experiment 2*

Manipulation check a. During the interview, participants in the Emotion condition will use more emotion words, talk more about emotional aspects, and communicate more the emotions they felt than participants in the Fact and Trivial conditions.

Manipulation check b. Participants in the Emotion and Fact conditions will talk about more profound and intimate, distressing, and important topics relative to participants in the Trivial condition.

Hypothesis 1. Immediately after the interview, participants who had communicated their emotional event will experience more physical symptoms and negative moods as compared to participants in the Trivial condition. Whether Emotion condition participants will experience

more physical symptoms and negative moods as compared to Fact condition participants was exploratory.

Hypothesis 2. At the follow-up session conducted 7 days after the interview, communication of event-related feelings will produce more recovery from the emotional event than the communication of event-related facts which will produce more recovery than the communication of trivial topics.

Hypothesis 3. At the follow-up session conducted two months after the interview, communication of event-related feelings will produce more long-term beneficial physical health effects than the communication of event-related facts which will produce more beneficial physical health effects relative to a Trivial condition. Whether long-term benefits from the communication of emotion will be produced on health behaviours or well-being was exploratory.

Hypothesis 4. Finally, participants in the Emotion condition will report more perceived benefits brought by the session of communication than participants in the Fact condition who will themselves perceive more beneficial effects than participants in the Trivial condition.

2. Method

1. Participants

Fifty-one undergraduate psychology students volunteered (16 males and 35 females) to participate to the study. Their mean age was 20.4 years ($SD = 1.15$; *Minimum* = 19, *Maximum* = 25). Participants received course credits in return for participation. They were randomly assigned to one of three conditions with the restriction that an equal number of participants were in each group (i.e., 3 X 17 participants). One student did not come at the one week follow-up. Additionally, 9 students did not complete the two-month follow-up. The sample was thus composed of 41 participants at the two-month follow-up, with 12 of them in the Emotion condition, 14 in the Fact condition, and 15 in the Trivial condition. Drop outs did not differ from completers with regard to the type of condition they were assigned to, $\chi^2(2, N = 51) = 1.74$, *ns*, to age, $t(49) < 1$, nor to gender, $\chi^2(1, N = 51) = 2.01$, *ns*.

2. Procedure

On the initial day of the experiment, the timing and requirements of the experiment were explained to the participants. Although they were not told the hypotheses, for ethical purposes, they were informed that they would have to recall one very important negative emotional episode and that the experiment would require them to talk either about a pre-assigned topic, or about one traumatic experience that had occurred in their life. To prevent bias, at that time,

neither the experimenter, nor the participant knew in which condition the participant would be assigned. Participants then filled out the informed consent form and received their course credits. Participants were then asked to recall the most upsetting emotional event of their life. The episodes were selected on five selection criteria: (1) the episodes needed to be very upsetting or traumatic, (2) negative, (3) they needed to have happened at a precise moment in time (and thus, not a situation that would last for days or weeks), (4) participants had to still think about it, and (5) participants still needed to talk about it. These criteria were used to select emotional events that were still very upsetting at the beginning of the study. When an episode was found, participants had to date it (month and year), to write down in few words which episode it was, and in how far they found the episode was negative at its occurrence (on a 7-point scale ranging from *not at all* (0) to *the most negative ever possible* (6)). Then, they completed the first battery of questionnaires assessing the emotional impact of the episode, their physical health, and well-being. The whole procedure is depicted in Figure 7.2.

After this first phase, participants were then randomly assigned to one of three conditions with the restriction that an equal number of participants were in each group: (1) the sharing of emotions related to the most upsetting episode of their life (Emotion condition), (2) the detailed description of facts related to the most upsetting episode of their life (Fact condition), or (3) the detailed description of a trivial topic (Trivial condition). The participants talked to the experimenter for 20 to 30 minutes following the instructions. The experimenter had a warm approach and made only statements in order to encourage a better understanding of the topic that was expressed by the participants and to keep participants talking in the frame of their assigned condition.

Participants in the Emotion group were told:

I would like that, for the following 20 to 30 minutes, you talk in detail about the various feelings and emotions you felt during the most upsetting episode of your life, the one about which you were thinking while answering the questionnaire. Therefore, I give you a list of several possible emotions. You can use it as a guide to find all emotions you felt. The important is that you profoundly examine all the emotions and feelings and that you express them. You should try to explain to me why you felt these emotions, and which where the implications this episode has had for you.

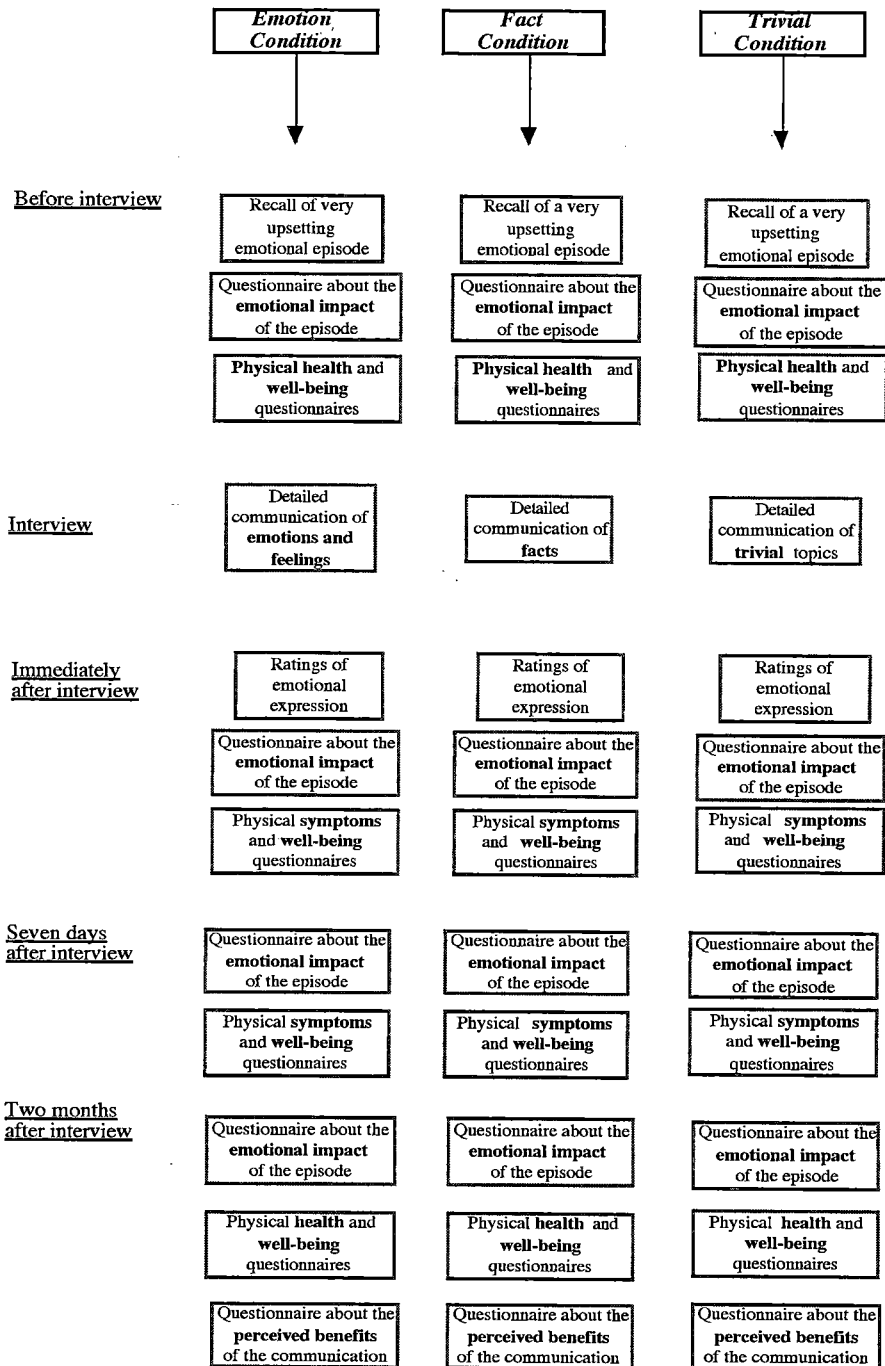


Figure 7.2 Procedure of Experiment 2

Participants in the Fact group were told:

I would like that, for the following 20 to 30 minutes, you talk in detail about the facts and circumstances that happened during the most upsetting episode of your life, the one about which you were thinking while answering the questionnaire. Therefore, I give you a list of several details which may be important when living an emotional episode. You can use it as a guide to find all details that were present in that situation. For each detail that suits the situation, try to give as more information as possible and to explain in detail what happened before, during, and at the end of the episode. I would like to know when and where it happened, who was there, what was said and done. The important is that you make a description of the episode and what happened as if you were telling a story, a purely descriptive narrative with a beginning, a corpus, and an end. I would like you thus to try to exclude the emotional aspects of this episode, this means that you should not enter in the way you felt about this situation.

Participants in the Trivial group were told:

I would like that, for the following 20 to 30 minutes, you talk in detail about the things and actions you perform during a day at the University, for example on Tuesday. Therefore, I give you a list of several moments of a day. You can use it as a guide to find the behaviours you do on a Tuesday of the week. For each moment of the day that suits what you do on Tuesday, try to give as much information as possible and to explain in detail what you do in the morning when you get up, when you wash yourself and have breakfast, if you go to lectures, etc. I would like to know when and where it takes place, who is there, what is said and done. The important is that you make a description of what you do on Tuesday as if you were telling a story, a purely descriptive narrative with a beginning, a corpus, and an end. I would like you thus to try to exclude emotional aspects of your talk, this means not enter in the way you feel about this situation. For example, "on Tuesday morning at 7.30 p.m. my clock rings, and I still stay in bed for 10 minutes, then I get up and slowly go to the door of my sleeping room, I open the door in order to go to the bathroom which is in front of..."

While they were talking, participants' discourse was continuously video- and tape-recorded with their consent. After the interview, participants again completed questionnaire assessing the emotional impact of the episode, their physical symptoms, and subjective well-being. In order to control the manipulation, questions examined the content of what they had talked about. Content analysis of the recordings were also used for this purpose.

After one week and two months, participants returned to the laboratory and the same emotional impact, physical symptom, and well-being questions were asked again. In addition to these questions, after two months, participants also rated their physical health. To maintain confidentiality, everyone was given a two-digit identification code that was used throughout the study rather than their names. The participants were then extensively debriefed and thanked.

3. Measures

Emotional impact of the episode measures.

As in Experiment 1, participants completed the Emotional Impact of the Episode Questionnaire and the Mental Rumination and Social Sharing Questionnaire. With the exception of the emotional intensity scale which was rated on a 10-point scale (*no upset* (1) / *strongest upset ever experienced in my life* (10)) instead of a 7-point scale, all facets and scales were the same as those used in Experiment 1. Thus, the Emotional Impact of the Episode Questionnaire included seven facets: emotional intensity scale, negative emotions, bodily sensations, action tendencies, challenged basic beliefs, search for meaning, and remaining emotional impact. The Mental Rumination and Social Sharing Questionnaire included three facets: mental rumination, need to socially share, and quantity of social sharing.

Health measures.

Pennebaker's Physical Symptom Scale (PPSS, Pennebaker, 1982). This questionnaire asks participants to rate, on 7-point scales, (*not at all* (1) / *a great deal* (7)), the degree to which they are currently experiencing each of 8 physical symptoms (e.g., racing heart or upset stomach). Average internal consistencies across several studies have been approximately .75 (Pennebaker, 1982). In the present sample, these items also showed internal consistency (Cronbach's $\alpha = .83$) and ratings were averaged to obtain a physical symptoms score.

Southern Methodist University Health Questionnaire (SMU-HQ, Watson & Pennebaker, 1989). This questionnaire lists 63 health problems, including acute infections, such as colds and flu; chronic problems, such as asthma; and serious illnesses, such as appendicitis and ulcers. Respondents checked any health problem they had encountered during the past two months.

Health-related behaviours. Participants reported the average number of (1) cigarettes they smoked per day, (2) cups of coffee they drank per day, (3) alcoholic beverages they drank per day, (4) hours they slept per night, and (5) anti-pain pills they took during the last month.

Illness data. Participants were asked the number of times during the last two months they had visited a physician for illness (visits for primary prevention and injuries were excluded) and the number of days during the last two months they had restricted their activities due to illness. Although previous studies assessed care-seeking rates by using medical records at a university health centre (Pennebaker et al., 1990; Pennebaker & Francis, 1996), this self-report measure was used because students in Belgium often return home for the week-ends and seek medical care both from their private general practitioners and from the university's health centres.

Negative Affectivity (NA). The 14-item Negative Emotionality (NEM) scale from Tellegen's Multidimensional Personality Questionnaire (MPQ; Tellegen, 1982) was used as a

trait NA measure. NA has been found to correlate with self-reported physical complaints (Watson & Pennebaker, 1989). NEM focuses on experience of negative affect and does not include somatic complaints or health-related items. High NEM scorers describe themselves as nervous, apprehensive, irritable, overly sensitive, and emotionally labile. This measure was used as a covariate in analyses testing the effects of communication of emotion on physical health measures.

Well-being measures.

Pennebaker's Negative Mood Scale (PNMS, Pennebaker, 1982). Participants rated, on 7-point scales (*not at all* (0) / *a great deal* (6)), the degree to which they were currently experiencing each of 8 negative moods (e.g., nervous, guilty, or not happy). Internal reliabilities (coefficient alphas) have previously been reported to be approximately .75 across several studies (Pennebaker, 1982). In the present sample, these items also showed internal consistency (Cronbach's $\alpha = .79$) and ratings were averaged to obtain a negative mood score.

Life satisfaction. On 7-point scales (*not at all* (0) / *a great deal* (6)), participants rated the extent to which they were satisfied with their (1) health, (2) love relationships, (3) work, (4) physical appearance, (5) financial situation, (6) intimate relationships, (7) public self, and (8) current life-situation. Internal consistency has previously been reported to be .78 (Finkenaue & Rimé, 1998a). Ratings were thus averaged to obtain a life satisfaction score (SLDS, Baker & Intagliata, 1982).

Manipulation check measures.

Several means were used to check that participants and interviewer had complied to the instructions. First, participants rated the content of what they talked about. Second, objective measures were taken from video- and tape-recordings.

Participant's ratings of interview. Just after the interview, participants rated, on 7-point scales (*not at all* (1) / *a great deal* (7)) the extent to which they (1) communicated all emotions they felt, (2) talked in a very detailed manner about emotional aspects, and (3) talked about profound or intimate topics. On similar scales, they also rated the degree to which they had talked about (1) distressing and (2) important topics.

Length of interview and respective talking time. Length of interview, respective talking duration of the participants and the interviewer, and the duration of the participants' crying spells and silence were measured from the video-recordings. Due to technical problems, two videos in the Emotion condition and one in the Fact condition could not be used. Statistical analyses were thus computed on 48 participants.

Content analysis. Every participant's audio-taped material was transcribed. Due to technical sound problems, this could not be done for one participant in the Emotion condition and one in the Fact condition. Statistical analyses were thus computed on a sample of 49

participants. Content of interview was analysed according to the number of emotion words spoken by the participants. To this end, in collaboration with Olivier Luminet and Robert Hoogenraad, I developed a French adaptation of the Linguistic Inquiry and Word Count (LIWC; Francis & Pennebaker, 1993) computer program. This text analysis program counts words related to emotions and cognitive processing. The emotion dimensions include percentage and number of negative emotion words (e.g., sad, hate, hurt, guilty) and positive emotion words (e.g., happy, joy, peaceful).

Perceived benefits from the study.

At the end of the study, participants were asked to rate, on 7-point scales (*not at all* (0) / *a great deal* (6)), of the extent to which (1) the communication session had a sense or was meaningful for them (in addition to the received course credits), (2) the communication session was useful to cope with the emotional episode, (3) the communication session was interesting to them, and (4) the communication session had influenced their perception of the emotional episode. These items showed internal consistency (Cronbach's $\alpha = .84$) and ratings were averaged to obtain a perceived benefits score.

Participant's beliefs about the effects of communication of emotions.

The two last questions of the final questionnaire assessed participant's personal beliefs about the effects of communication of emotion. They were asked to rate on 7-point scales (*not at all* (0) to *a great deal* (6)) the two following questions: (1) "Do you think that asking people to talk about an emotional event is relieving or helping them to cope with the event?" and "For yourself, is it relieving or does it help you to talk to someone you trust about an emotional event that happened to you?"

3. Results

1. Manipulation checks and social sharing characteristics

Objective measures of interview characteristics.

On average, the interviews lasted 20 minutes and 2 seconds ($SD = 4$ min. 0 sec.) with a range comprised between a minimum of 13 minutes 56 seconds and a maximum of 30 minutes 36 seconds. A one-way analysis of variance (ANOVA) on the interview length yielded a significant result, $F(2, 45) = 5.53, p < .01$. As can be seen in Table 7.1, Bonferroni post-hoc comparisons revealed that interview length was longer in the Emotion condition as compared to the Fact condition (on average 4 min. 20 sec. longer). However, as expected, no significant differences between conditions were found on the participant's total number of spoken words, $F(2, 46) < 1, ns$, on the duration of participant talking, $F(2, 45) = 1.51, ns$, nor on the duration

of the experimenter talking, $F(2, 45) = 2.11$, *ns*. Examination of means indicated that participants in the Emotion condition have spent slightly more time in silence, slightly more time crying, and slightly more time talking as compared to participants in the Fact condition. The experimenter in the Emotion condition has also spent slightly more time talking as compared to when in the Fact condition. Thus, the interview was significantly longer in the Emotion condition as compared to the Fact condition due to the *accumulation of small non significant differences* between participants in the Emotion condition and participants in the Fact condition. However, importantly, participants in the three conditions did not differ in time spent talking, nor did they differ in the number of words they used during the interview. The difference in total time may thus in fact represent the induction of slightly more emotionality elicited during the interview of participants in the Emotion condition as compared to participants in the Fact condition (e.g., more time in silence, more time crying)⁶. This hypothesis was confirmed by the analyses on the manipulation check questions.

Manipulation checks on degree of emotional expression.

In order to check the effectiveness of the manipulation, the total number of *emotion* words spoken by participants (the result of this objective measure is presented in Table 7.1) and participants' ratings of the extent to which they had talked about emotions, about profound and intimate, distressing, and important topics were examined (see Table 7.2). Participants in the Emotion condition were expected to use more emotion words, to talk more about emotional aspects, and to communicate more the emotions they felt than participants in the Fact and Trivial conditions. Analyses of variances yielded highly significant results for each of these three items. Bonferroni post-hoc tests confirmed that participants in the Emotion condition had indeed talked more and communicated more their emotions than participants in the Fact condition who themselves had talked more and communicated more their emotions than participants in the Trivial condition. Importantly, the objective measure of number of emotion words yielded very similar results as the self-reported measures of emotional expression given by participants. This suggested that participants were able to accurately report the degree to which they talked about focused specific topics. Participants in the Emotion and Fact conditions were expected to have talked about more profound and intimate, distressing, and important topics compared with participants in the Trivial condition. For each of these three items, ANOVA's again yielded highly significant results. Bonferroni post-hoc tests again confirmed the hypotheses.

⁶ To be sure that this difference in interview length did not account for the main results, I tested whether results changed when this variable was covariates in analyses of the impact of verbalisation of emotion. Total time of video never accounted for part of the variance in any of the analyses, neither as main effect (all F 's < 1), nor in interaction with time (all p 's > .13). Also, when the Condition by Time interactions had been significant in the analysis not considering interview length, it remained significant when covarying the interview length. When the Condition by Time interactions had been non significant, it also remained non significant when covarying the interview length. This indicated that interview length did not account for the results. This is consistent with the results of Smyth's (1997) meta-analysis which had indicated that length of writing session did not account for effect size on any type of dependent variable.

Table 7.1 Means (SDs in parentheses) of the Objective Manipulation Checks for the Emotion, Fact, and Trivial Conditions

Objective measures from recordings	Emotion (n = 15)	Fact (n = 16)	Trivial (n = 17)	Effect
Interview length	22' 27" a (5' 04")	18' 07" b (3' 31")	19' 43" ab (4' 01")	5.53 **
Duration of participant's talking	16' 25" (3' 21")	14' 12" (4' 10")	16' 01" (3' 52")	1.51
Duration of participant's crying spells	9" (23")	4" (10")	0" (0")	1.65
Duration of participant's silence	1' 06" ^a (54")	39" ^{ab} (20")	30" ^b (28")	4.29 *
Duration of experimenter's talking	4' 16" (1' 58")	3' 19" (1' 34")	3' 09" (52")	2.11
Participant's number of spoken words	2770.00 (880.46)	2589.19 (880.21)	2572.06 (822.90)	< 1
Participant's number of emotion words	59.06 a (26.42)	30.19 b (11.87)	13.18 c (8.28)	29.67 ****

Note. Means with different subscripts are significantly different at $p < .05$, using Bonferroni post-hoc test.

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .0001$.

Equivalence on the dependent variables before interview.

The last check before testing the impact of communication of emotion on emotional recovery, subjective health, well-being, and perceived benefits was to verify that participants were equivalent between conditions with regard to the dependent variables before the interview. As in Experiment 1, all seven facets of emotional impact were simultaneously subjected to a 4 X 7 (Condition X Emotional Impact Facet) between-within multivariate analysis of variance (MANOVA). As expected, across all seven facets of emotional impact, the Condition effect was not significant, $F(2, 48) = 1.10$, *ns*. Across all three facets of the Mental Rumination and Social Sharing Questionnaire, no significant Condition effect was found, $F(2, 48) = 1.41$, *ns*. Finally, none of the two measures of well-being and none of the nine subjective health measures differed between conditions before the interview (all ANOVA's yielded non significant results, all p 's $> .20$). These results confirmed that conditions were equivalent between conditions with regard to the dependent variables before the interview.

Table 7.2 Means (SDs in parentheses) of Subjective Manipulation Check Questions for the Emotion, Fact, and Trivial Conditions

<i>Participant's evaluation of the interview</i>	<i>Emotion (n = 17)</i>	<i>Fact (n = 17)</i>	<i>Trivial (n = 17)</i>	<i>Effect</i>
I talked in detail about emotional aspects	5.41 a (0.94)	3.71 b (1.49)	1.65 c (1.17)	40.54 ****
I communicated all emotions I felt	5.65 a (1.00)	3.41 b (1.73)	1.94 c (1.48)	28.72 ****
I talked about a profound and intimate topic	6.35 a (0.79)	5.12 a (2.00)	2.24 b (1.44)	34.14 ****
I talked about a distressing topic	4.53 a (1.81)	3.76 a (2.33)	1.65 b (1.32)	10.88 ****
I talked about an important topic	6.00 a (1.22)	6.12 a (1.22)	2.06 b (1.29)	56.20 ****

Note. Measures could vary from 0 to 6 and higher scores reflect greater expression. Means with different subscripts are significantly different at $p < .05$, using Bonferroni post-hoc test.

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .0001$.

2. Description of the collected emotional materials

Of the 51 reported traumatic episodes, 25% dealt with death or suicide of a family member, close friend, or pet, 20% involved relationship problems among or with close persons (e.g., quarrel, divorce, separation), and 16% centred on love relationship problems (breaking of relationship). Other topics included one's severe illness or a close person's serious health problem (14%), sexual harassment or abuse (8%), academic problem (6%), and witnessing a car accident (4%). The remaining episodes (7%) were a public humiliation, a drug problem, a suicide attempt, and hearing a bad news.

The episodes had happened on average 3 years and 8 months before the beginning of the study ($SD = 45.25$ months; *Minimum* = 1; *Maximum* = 177 months ago). Conditions did not significantly differ with regard to the period of time elapsed since the episodes' occurrence, $F(2, 48) < 1$. Although the events had happened long before the beginning of the study, this may not have influenced the possibility of recovery. Indeed, the emotional intensity felt before the interview was on average 6.29 ($SD = 2.36$) on the scale from 1 = *no upset* to 10 = *strongest upset ever experienced in my life*. Thus, at the beginning of the study, these emotional events were still very upsetting. As noted before, the current emotional intensity of the episodes did not significantly differ between conditions, $F(2, 48) < 1$. Confirming the instructions to recall a *negative* emotional event, episodes were rated as being highly negative at their occurrence ($M = 5.38$; $SD = .90$ on a scale from 0 = *not at all negative* to 6 = *the most negative event ever*

possible). The valence of the episodes did not significantly differ between conditions, $F(2, 47) < 1$.

3. Does communication of emotional episodes reactivate physical symptoms and negative moods?

Measures of physical symptom, negative moods, and life satisfaction just after the interview were examined to test the hypothesis that participants in the Emotion and Fact conditions would show more symptomatology and lower well-being than participants in the Trivial condition, and that participants in the Emotion condition might show more immediate symptomatology and lower well-being than participants in the Fact condition. Separate repeated measures ANOVAs on each of these measures were used. As expected, significant Condition $\times$ Time interactions on physical symptoms and negative moods were found (see Table 7.3). Post-hoc comparisons revealed higher levels of physical symptoms and negative moods immediately after communication for participants in the Emotion and Fact conditions compared with participants in the control group. The Emotion and Fact conditions did not significantly differ from each other. No significant effects were found on life satisfaction.

Table 7.3 *Immediate Effects on Physical Symptoms and Well-being as a Function of Interview Condition*

Measures	Conditions			Effect		
	Emotion (<i>n</i> = 17)	Fact (<i>n</i> = 17)	Trivial (<i>n</i> = 17)	Condition	Time	<i>C</i> $\times$ <i>T</i>
Physical symptoms				2.79 †	< 1	7.96 ***
Before the interview	1.49	1.33	1.32			
Just after the interview	1.63 a	2.11 a	0.74 b			
Negative moods				5.36 **	1.55	6.05 **
Before the interview	2.77	2.40	2.08			
Just after the interview	2.46 a	2.86 a	1.44 b			
Life satisfaction				< 1	< 1	< 1
Before the interview	4.12	3.92	3.96			
Just after the interview	4.13	3.92	3.89			

Note. Measures could vary from 0 to 6 and higher scores reflect greater physical symptoms, negative moods, and life satisfaction. Means with different subscripts are significantly different at $p < .05$, using Bonferroni post-hoc test.

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

4. Does communication of emotional episodes help to recover from the emotion?

Emotional impact of the episode.

All seven facets of Emotional Impact of the Episode Questionnaire were simultaneously subjected to a 3 X 2 X 7 (Condition X Time X Emotional impact facet) between-within repeated measures multivariate analysis of variance (MANOVA). Across all seven facets of emotional impact, a highly significant main effect for Time, $F(1, 47) = 37.11, p < .0001$, was obtained. Contrary to expectations, no significant Condition X Time interaction was found, $F(2, 47) < 1$. The MANOVA also yielded a significant Emotional impact facet main effect, $F(6, 282) = 88.51, p < .0001$, and a significant Time X Emotional impact facet interaction, $F(6, 282) = 15.07, p < .0001$. No other main effects or interactions were significant ($F_s \leq 1$).

Separate repeated measures ANOVAs on each of the emotional impact facets indicated that highly significant main effects for Time were found on most of the emotional impact facets, that is on emotional intensity, negative emotions, bodily sensations, action tendencies, and remaining emotional impact. Examination of the means in Table 7.4 indicated that the emotional impact had decreased from before to seven days after the interview.

Mental rumination and social sharing.

The three facets of the Mental Rumination and Social Sharing Questionnaire were simultaneously subjected to a 3 X 2 X 3 (Condition X Time X Facet) MANOVA. Across the three facets, a significant effect for Time, $F(1, 47) = 7.12, p < .01$, was obtained. Contrary to expectations, no significant Condition X Time interaction was found, $F(2, 47) < 1$. The MANOVA also yielded a significant Condition main effect, $F(2, 47) = 3.85, p < .05$, a significant Facet main effect, $F(2, 94) = 41.58, p < .0001$, and a significant Time X Facet interaction, $F(2, 94) = 10.15, p < .0001$. The triple interaction approached significance, $F(4, 94) = 2.17, p < .08$, and the Facet X Condition interaction was not significant ($F < 1$).

Separate repeated measures ANOVAs on each of the mental rumination and social sharing facets were used. As can be seen in Table 7.4, a significant Condition X Time interaction was found on the quantity of social sharing. Bonferroni post-hoc test revealed that neither pre-, nor post-interview differences were significant. Examination of the means indicated that while participants in both Emotion and Fact-conditions have talked slightly more about their event during the seven days following interview, Trivial condition participants had slightly decreased in their frequency of social sharing. This result is quite marginal as compared to all analyses of variances that have been performed. In addition, the two other ANOVAs on mental ruminations and need to share confirmed the non significant Condition X Time interaction found in the MANOVA. They also confirmed the significant effect for Time. Examination of the means indicated that mental ruminations and need of social sharing had decreased from before to seven days after the interview. Thus, on the whole, interviewing

conditions did not differ in their capacity to change the cognitive and social aftermaths of highly negative episodes.

Table 7.4 Means of Facets of Emotional Impact of the Episode and Mental Rumination and Social Sharing Questionnaires by Condition Before and 7 Days After the Interview

Measures	Conditions			Effect		
	Emotion (n = 17)	Fact (n = 16)	Trivial (n = 17)	Condition	Time	C x T
Emotional intensity				< 1	31.16 ****	1.31
Before the interview	6.00	6.75	6.06			
7 days after the interview	4.00	4.50	5.00			
Negative emotions				< 1	53.59 ****	< 1
Before the interview	2.99	2.98	3.02			
7 days after the interview	2.07	2.17	2.45			
Bodily sensations				< 1	22.34 ****	< 1
Before the interview	1.29	1.66	1.56			
7 days after the interview	0.86	1.06	1.00			
Action tendencies				< 1	6.67 **	< 1
Before the interview	1.31	1.29	1.53			
7 days after the interview	0.95	1.09	1.34			
Challenged basic beliefs				< 1	1.14	< 1
Before the interview	2.75	3.02	3.38			
7 days after the interview	2.69	2.75	3.30			
Search for meaning				< 1	< 1	1.91
Before the interview	2.30	3.02	3.08			
7 days after the interview	2.71	2.92	2.64			
Remaining emotional impact				1.78	9.31 ***	1.84
Before the interview	3.15	3.66	3.61			
7 days after the interview	2.67	3.14	3.57			
Mental rumination				< 1	7.18 **	< 1
Before the interview	2.39	2.82	2.68			
7 days after the interview	2.18	2.40	2.40			
Need to share				3.85 *	12.81 ****	< 1
Before the interview	2.24	3.25	2.88			
7 days after the interview	1.29	2.31	2.35			
Quantity of social sharing				2.69	1.44	3.60 *
Before the interview	0.35	1.09	1.35			
7 days after the interview	0.68	1.72	0.97			

Note. With the exception of the emotional intensity scale which could vary from 1 to 10, measures could vary from 0 to 6. Higher scores reflect greater intensity of emotion, stronger need to share, etc.

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .005$. **** $p < .001$.

5. Is communication of emotional episodes beneficial for well-being and physical health?

Measures of well-being and of physical health taken two months after the interview were examined to test the hypothesis that, after two months, participants in the Emotion and Fact conditions would show higher well-being, less symptomatology, would be in better physical health, and would show healthier behaviours than participants in the Trivial condition. Repeated measures analyses of variance (MANOVAs) were used on well-being measures. Repeated measures analyses of covariance (MANCOVAs) with Negative Affectivity as a covariate were used on subjective health measures.

Contrary to expectations, no significant Condition X Time interaction was found on any of the well-being or health measures, suggesting that the intervention did not influence these dependent variables. Thus, communication of emotion did not result in beneficial health effects, did not affect long-term subjective well-being, nor did it change health behaviours. Significant main effects for Time were found on negative moods, symptom reporting (physical symptoms and SMU-HQ), and use of anti-pain pills, $F(1, 36) = 6.50$, $p < .02$. Similarly to emotional impact results, examination of the means indicated that they had decreased from before to two months after the interview. No other main effects or interactions were significant for physical health or well-being data (i.e., life satisfaction, other health behaviours, illness data). Means of the main well-being and health measures are shown in Table 7.5.

Table 7.5 Means of Well-being and Health Measures by Condition Before and Two Months After the Interview

Measures	Conditions			Effect		
	Emotion (<i>n</i> = 12)	Fact (<i>n</i> = 14)	Trivial (<i>n</i> = 15)	Condition	Time	<i>C</i> x <i>T</i>
Negative moods				1.97	18.97 *****	1.03
Before the interview	2.82	2.30	1.96			
2 months after the interview	1.65	1.56	1.44			
Life satisfaction				< 1	< 1	< 1
Before the interview	4.09	4.06	4.10			
2 months after the interview	4.24	4.24	4.06			
Physical symptoms				< 1	29.56 *****	< 1
Before the interview	1.40	1.21	1.33			
2 months after the interview	0.45	0.52	0.30			
SMU-HQ				1.02	29.46 *****	< 1
Before the interview	4.58	6.07	5.50			
2 months after the interview	2.83	4.21	3.21			
Number of illness visits				1.18	< 1	< 1
Before the interview	0.25	0.21	0.43			
2 months after the interview	0.17	0.50	0.50			

Note. SMU-HQ = Southern Methodist University Health Questionnaire. Higher scores reflect greater negative moods, life satisfaction, etc.

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .005$. ***** $p < .001$.

6. Do people feel that the communication of emotion is beneficial?

Two months after the interview, participants rated on four scales in how far they estimated that the communicating session was beneficial for them (i.e., meaningful, useful to cope with their event, interesting to them, and had influenced their perception of the emotional episode). Because specific differences between groups were expected, between-groups differences were assessed using a planned contrast on the average score of perceived benefits. It was expected that participants in the Emotion condition would perceive that the communication session was more beneficial than participants in the Fact condition who themselves were predicted to perceive more benefits as compared to participants in the Trivial condition. As expected, the planned contrast yielded a highly significant result, $F(1, 39) = 8.61, p < .005$. As can be seen in Figure 7.3, participants in the Emotion condition ($M = 3.94$; $SD = 1.18$) rated the communication session as being more beneficial as compared to participants in the Fact condition ($M = 3.57$; $SD = 1.31$) who perceived the session as being more beneficial as compared to participants in the Trivial condition ($M = 2.60$; $SD = 1.22$).

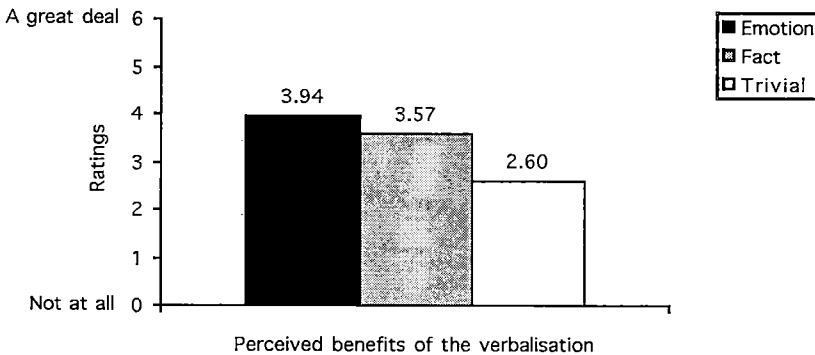


Figure 7.3 *Comparison of Participants' Ratings of the Perceived Benefits of the Communication Assessed at the Follow-up Conducted Two Months after the Interview*

Because people perceived benefits especially when they communicated *emotional topics*, I wondered whether people reported beneficial effects because they *believed that what they did in the experiment should be beneficial* or because they *really felt that it was beneficial*. For participants who had communicated their emotional event (i.e., participants in the Emotion and Fact conditions), the correlation between their score of perceived benefits on the one hand and their beliefs about the beneficial effects of communication on the other hand was tested. In addition, the score of perceived benefits was correlated with indices of emotional recovery, and

indices of evolution of physical health and well-being. These indices were computed by the difference between (1) the scores of emotional impact, well-being, or physical health at the beginning of the study (before interview), and (2) the respective scores assessed at the 2-month follow-up. To illustrate, an index of emotional recovery was calculated by subtracting the emotional intensity elicited when the memory of the episode was reaccessed at the 2-month follow-up from the emotional intensity elicited when the memory of the episode was reaccessed at the beginning of the study. Similarly, a well-being evolution index was computed by the intensity of negative moods at the beginning of the study minus the intensity of negative moods at the 2-month follow-up. The same procedure was applied to all variables that were found to have significantly evolved from before to two months after the interview (i.e., emotional intensity, negative emotions, action tendencies, bodily sensations, basic beliefs, search for meaning, remaining emotional impact, mental rumination, need for social sharing, negative moods, SMU-HQ, physical symptoms, and use of anti-pain pills).

Results of these correlations revealed that perceived benefits were significantly associated with the beliefs in the beneficial effects (respectively for the belief that communication is relieving and helping people to recover from their emotions and the belief that communication of emotion is relieving and helpful for the participant in particular, $r(26) = .39$, $p < .05$ and $r(26) = .44$, $p < .01$). One of the nine correlations between perceived benefits and the recovery indices yielded a highly significant result. The recovery index on negative emotions was associated with perceived benefits, $r(26) = .54$, $p < .005$. One correlation approached significance (i.e., recovery index on emotional intensity, $r(24) = .36$, $p = .08$) and the seven other correlations were not significant (all p 's $> .10$). Correlations with the four indices of evolution of well-being or physical health were never significant (all p 's $> .30$). Thus, perceived beneficial effects of the communication of emotional events were associated with the *belief* that communication of emotion should be beneficial. They were not overwhelmingly associated with the *real benefits* in recovery from the emotion. Finally, they were never associated with better physical health, or even with better subjective well-being.

4. Discussion

The present study was designed to address the issue of whether the communication of emotional experiences leads to more recovery from the emotion. It was expected that talking about a negative emotional experience would induce more emotional recovery than talking about trivial matters. In addition, I tested whether emotional recovery was mediated by specific aspects of the emotional experience which would be communicated: namely factual or emotional aspects.

Results confirmed that very different communications were induced. Participants in the Emotion condition had indeed talked more about their emotions and feelings related to a negative emotional event than participants in the Fact condition. This was confirmed by both

objective and subjective measures, suggesting that people were able to accurately rate what they talked about. Results also confirmed that participants in both the Emotion and Fact groups had talked about very important, profound, intimate, and distressing topics and that this was not the case among participants in the Trivial condition.

1. The effects of communication of emotion were NOT mediated by the focus of communication

Mendolia and Kleck (1993) reasoned that specifically talking about emotional aspects of the emotional events should mediate the effects on emotional recovery. Indeed, they had postulated that, in the short term, focusing on an objective description of the stressful event should reduce personal relevance and decrease stress. On the other hand, focusing on one's emotional reactions in response to the event should exacerbate threatening aspects of the event and increase stress in the short term. In the long term, then, a habituation process would explain why in an emotion condition a decrease of stress would occur. However, in the present study, even if participants had really focused on different aspects of their emotional experience, no differences between Emotion and Fact conditions on indices of immediate reactivation (i.e., physical symptoms and negative moods) were found. This would explain why in Experiment 1 Fact and Emotion-focused interviewees failed to differ in emotional recovery at the follow-up. Consistent with these findings, in the present study, participants in these two conditions had also recovered to the same degree seven days after the interview. This indicated that the effects of communication were not mediated by the focus of communication. Although inconsistent with Mendolia and Kleck's study, this would in fact be consistent with most of the previous research in which no distinction was made on the specific focus of communication (e.g., Donnelly & Murray, 1991; Francis & Pennebaker, 1992; Knapp et al., 1992). In these studies, just after the communication of emotional experiences, physical symptoms and negative moods were enhanced. Because this was also the case in the present study, it was thus really expected that habituation to intense emotions or that emotional recovery would have occurred in the Fact and Emotion conditions as compared to the Trivial condition.

2. Communication of emotional experiences did NOT lead to emotional recovery

Contrary to expectations, no significant effects of type of communication were found on emotional recovery between participants who had communicated their emotional event and those who had not. The present results thus failed to confirm that communication of emotional experiences leads to emotional recovery. Similarly to previous correlative findings by Rimé et al. (1992, 1998), the present study failed to offer evidence that communication of emotion contributes to recovery. However, similarly to findings of Experiment 1, all participants in the present experiment recovered from their emotions from before to seven days after the interview.

Thus, contrary to common sense, participants in the Trivial condition also recovered from their emotions. This suggested either that the unspecific factors associated with the contact with the experimenter, or with any communication are beneficial, or that they recovered due to spontaneous remission. A final possibility is that ratings had simply regressed to the mean.

3. Communication of emotional experiences did NOT lead to better physical health and well-being

Contrary to expectations, the present study failed to show that communication of emotional experiences is associated with subsequent physical health improvements. No significant differences were found over time between participants in the Emotion, in the Fact, and in the Trivial conditions on measures of visits to medical professionals for illness, self-reported physical symptoms, nor any other health measures. This is inconsistent with Pennebaker and his colleagues' findings (Pennebaker & Beall, 1986; Pennebaker et al., 1988). A first explanation of these contradictory results could be that, in contrast with Pennebaker's paradigm, the present study involved talking once rather than writing several times about emotional experiences. Would writing several times about emotional episodes have induced better physical health? It is possible. However, other studies which used the writing paradigm did neither replicate Pennebaker and colleagues findings on physical health (Corsini, 1999; Donnelly & Murray, 1991; M. A. Greenberg & Stone, 1992; Murray et al., 1989; Murray & Segal, 1994).

Several factors may have made it less likely that health effects would be found in this study. First, because participants at the University of Louvain consulted with private doctors as well as with university health centers, self-reports of doctor visits were used. This meant that illness visit data was subject to memory biases. It is possible that objective measures of physical health would have shown significant differences. This hypothesis is consistent with findings from Melanie Greenberg et al.'s (1996) study in which no significant effects were found on subjective measures whereas beneficial effects were on an objective health measure (i.e., records of health center visits for illness).

Second, information about number of doctor visits was not available for the 10 participants who dropped out. This may have lessened the statistical power necessary for finding the effect. Contrary to this hypothesis however, it should be noted that in Pennebaker and Beall's (1986) study, a similar number of participants were sufficient to show beneficial effects (i.e., in Pennebaker and Beall (1986), 42 participants at the follow-up assigned to one of four conditions vs. in the present study, 41 participants at the follow-up assigned to one of three conditions).

Third, it should be noted that some studies (Pennebaker & Beall, 1986; Pennebaker et al., 1988, 1990) did not report pre-test assessment of between-groups differences on all health measures. So, it is uncertain whether their randomisation procedures were successful. In the

present study, however, evidence was provided that no significant pre-test differences existed on each of the dependent variables. In addition, pre-test variations were controlled for using MANOVAs and testing the interaction between time and condition, thereby decreasing the likelihood of finding post-test differences.

Finally, it should be noted that in some previous studies which found significant effects on physical health measures, debriefing sessions occurred after the final experimental session but before the follow-up health assessment (Pennebaker & Beall, 1986; Pennebaker et al., 1990). During this debriefing session, "although explicit predictions about the outcome ... were not divulged, subjects were informed that one possible outcome of the experiment was that writing about traumatic experiences could have beneficial health effects in both the short run and the long run" (Pennebaker & Beall, 1986, p. 276). Debriefing session in the present study only occurred when participants had completed all phases of the study, thereby decreasing the likelihood of finding beneficial effects.

Consistent with the literature review presented in Chapter 4 but contrary to common expectations, long-term effects on health behaviours and subjective well-being were also not found. The question remains as to why participants in all conditions reported better physical health and well-being. It is possible that seasonal factors have influenced these self-report measures. The study started mid-February 1996 and data collection ended in May 1996. Pre-test assessments of physical health and well-being data were thus reported during the Winter period, when people were more likely to feel sick relative to the Spring season (period during which follow-up assessments were made).

4. Communication of emotional experiences led to perceived benefits

As expected, participants who have talked about their emotional event perceived more benefits from it as compared to participants who did not communicate it. Indeed, at the final follow-up, participants who had communicated their emotional event rated the interview as being more beneficial than participants in the Trivial condition. Participants who had focused on their emotions and feelings related to the emotional episode also reported more perceived benefits than participants who had focused only on factual descriptions of the episode. These results are paradoxical because, even if people do not recover from their emotions *because* they communicated their emotional event, they feel that it makes sense, that it is helpful to cope with their emotions, and that it is beneficial to communicate their emotions. This paradox may be explained by two ways. First, it is possible that people *really* benefited from the communication of emotion but that I did not tap these beneficial effects. This hypothesis would need to investigate other dependent variables that were not taken into account here.

Second, it is also possible that reported beneficial effects are based on some sort of illusion. By illusion, I do not mean that these benefits are opposite to facts, that is to actual adjustment. Rather, they may require looking at the facts in a particular light, because a different

slant would be conflicting with people's beliefs. The viewpoint that perceived benefits may rest on an illusion could seem cynical, but it may also be seen as very important for people's cognitive coherence or well-being. In other words, it is possible that people reported beneficial effects to uphold cognitive coherence with their beliefs. In support of this hypothesis, perceived beneficial effects of the communication of emotional events were found associated with the *belief* that communication of emotion should be beneficial. This was not the case with most of the *real benefits* in recovery from the emotion, or with beneficial physical health effects, or even with better subjective well-being. Although this finding, which is based on correlative results, should be interpreted with caution, it may suggest that these benefits are due to the the impact of their beliefs. Indeed, on the one hand, if they are asked to communicate their emotional experiences, they may subjectively report beneficial effects to maintain a cognitive coherence with their belief that it is beneficial. On the other hand, if they realise that they have recovered, that they feel better, or have better health, they may *attribute* these benefits to the communication of emotion. Although this causal attribution does not rely on reality, it may give the illusion to people that this is the case. These associations should be checked in future studies because of the low number of participants on which these correlations were calculated.

5. Future research

In the present study, participants in all conditions have recovered from their emotional events. It is now known that these effects were not due to the communication *of emotional events*. It is, however, not known whether participants in each condition, including the Trivial condition, have recovered because of the unspecific potential beneficial effects of the communication, or because of spontaneous remission. To distinguish these two possible effects, the design of a future study should include a group of participants who do not communicate any topic.

With regard to the perceived benefits, it is now known that they are associated with the communication of emotional events. It is, however, not known whether talking about any emotional matter would be perceived as beneficial and helpful. Whereas emotional recovery is intrinsically linked to the memory of a particular event and not to a general perception of well-being, it is possible that subjective benefits would be perceived when talking about any emotional event. This should be tested in a future study. Finally, up till now, these perceived benefits were essentially examined with general questions (e.g., was it meaningful, useful, interesting). Future studies should investigate in more depth whether these perceived benefits are related to perceived relief from the emotion, or to other perceived benefits (e.g., cognitive, interpersonal). If people indeed report perceived relief from the emotion but no objective indices of emotional recovery are found, this would suggest that these perceptions of recovery are based on an illusion.

6. New theoretical questions

Our results raise also other fundamental theoretical questions. In particular, one may wonder whether the concept of emotional recovery which fed the main dependent measures in my studies is valid. Indeed, it is really surprising that communication of emotional experiences does not help people to recover from their emotions. This is contrary to common beliefs, to most psychologists views, and to theoretical expectations. An empirical validation of the concept of emotional recovery is thus needed. Internal and external validity of the concept should be examined.

A second question is raised from the participants' reports that the experimental communication of emotion had been beneficial to them. In fact, it is possible that the beneficial impact of communication of emotion that participants perceived when they have communicated their emotions is caused by an improvement in other indices of adjustment than the ones which were considered here. It is thus necessary to address the question of how successful adjustment should be conceptualised and measured. In the present dissertation, successful adjustment is conceptualised as health and well-being. The present study measured three indices of adjustment: physical health, subjective well-being, and emotional recovery (including search for meaning and challenged basic beliefs). Other dimensions of adjustment have been emphasised in the literature. For example, investigators studying the coping process have identified that maintaining a positive self-concept is reflecting good adjustment with life crises (e.g., S. E. Taylor, 1983; Wortman & Silver, 1987). Another dimension is the degree of social engagement or interpersonal functioning (e.g., Peplau & Perlman, 1982; Weiss, 1973, 1982). These indices of adjustment should be examined to indicate whether the communication of emotion has a positive influence on each of these.

Thus, the aims of the next study were twofold. First, I examined whether recovered and unrecovered events could be differentiated on emotional impact measures (internal validity) or other adjustment indices not related specifically to the emotional event (external validity). Second, I investigated whether communication of emotion influences other types of dependent variables than emotional recovery. In the next study, in addition to emotional impact measures, the evolution of the self-concept and of perceived loneliness were thus assessed.

7. Conclusions

The present chapter indicates that the communication of emotion is not mediated by the focus of communication. However, consistent with the conclusions of my empirical review, this chapter suggests that one should pay careful attention to the type of dependent variable that is assessed and operationalised when one examines the question of whether communicating one's emotions helps. It is important to note that types of dependent variables are differently influenced by the manipulation. Whereas emotional recovery, long-term well-being (i.e.,

moods, life satisfaction), and subjective physical health were not influenced by the communication of emotions, subjective benefits of the communication of *emotional experiences* were created. In other words, after the experiment, participants did not objectively feel better about the event or in general, but they reported subjectively feeling better because of the communication of *emotions*. Overall thus, I do not claim that communication of emotional experiences is not beneficial as such. Rather, I argue that it may be important for people's feelings that it helped them. Before going on with the test of the implications of the present study for future research, one first needs to examine whether the concept of emotional recovery has empirical validity. This was the purpose of the third experimental study.

Chapter 8. Experiment 3 on the impact of communication of recovered vs. unrecovered emotional episodes on emotional recovery, self-esteem, clarity of the self, loneliness, and perceived benefits

1. Introduction

The question of this dissertation is whether socially sharing an emotional event helps the person who shares to recover from the emotional impact that the event still has. In other words, does communication of emotion help alleviating the emotions and feelings that remain when the person thinks or talks about the event? In previous correlative and experimental studies, no effect of the communication of emotions was found on emotional recovery (see Chapters 5, 6, and 7). In Experiment 2 however, participants who had communicated the emotional event reported perceived benefits of having communicated their emotions. Specifically, they felt that it was useful to share, that it was meaningful and good to share their emotions. Nevertheless, no difference between participants who had communicated the event and participants who had not were found in the extent to which they had recovered from the specific communicated event. In other words, individuals reported that communicating emotions helps recovery, but they actually did not recover more as compared to individuals who do not communicate emotional experiences.

In the present chapter, I address two fundamental questions. First, one may wonder whether the notion of emotional recovery on which my studies relied is valid. Both internal and external validity of the concept of emotional recovery will be considered. The internal validity can be checked by correlating emotional impact measures with recovery ratings. The external validity can be examined by correlating emotional and recovery measures with other indices of the adjustment to emotional experiences which would not assess the experiential component of the impact of the emotional event. A second concern is whether talking about *unrecovered* emotional episodes makes a major difference in outcomes as compared to talking about recovered episodes. Moreover, it is possible that perceived benefits were reported because communication of emotion induces other beneficial effects than emotional recovery ones. Thus, are there beneficial effects of the communication of emotion on other indices of adjustment to emotional events? These questions will be examined successively below.

1. The concept of emotional recovery and its internal validity

Emotional recovery is defined as the evolution over time of the arousal still elicited *when a given emotional memory is reaccessed*. When an individual recovers from an emotion, each of the components of the emotional experience are thought to decrease in intensity with time. For example, the emotional recovery process can be identified when a decrease of painful emotions is observed after a while, when felt bodily sensations while thinking about the event decrease with time, or when, with time, the need to share the emotional experience or the frequency of mental rumination about the event decline. In previous correlative studies, an index of emotional recovery was computed by the difference between the intensity of the emotion elicited at the occurrence of the event and the intensity of the emotion still elicited by the event at its recall later on (see Chapter 5). If the evolution of the measures of emotional impact of an episode indeed assesses emotional recovery, it would imply that they should be intercorrelated with people's ratings of whether they have recovered from that event or not.

In addition, when a person is asked to recall an emotional episode, the indices of emotional impact remaining *at recall* should be less intense for episodes that are recovered from than unrecovered ones. This hypothesis was recently addressed by Rimé, Hayward, and Pennebaker (1996). In this study, volunteer students were asked to recall an emotional experience "they had recovered from" and an emotional experience "they had not recovered from." For each, they rated initial and present emotional impact, as well as initial and present sharing frequency. The data showed that the two types of episodes elicited a comparable emotional impact at the time they occurred, but they differed *very markedly* in emotional impact they still had. As expected, emotional impact measures indicated and gauged recovery and thus confirmed that the notion of "recovery" makes sense. Interestingly, the two types of episodes did not differ in extent of social sharing reported for the period immediately following their occurrence. In addition, there were no differences in style of sharing adopted initially. "Sharing facts" and "sharing feelings" were rated comparably for recovered and unrecovered episodes. Thus, extent and type of naturally developed social sharing did not seem to make a difference as regards the feeling of having recovered from an emotion or not. These results were consistent with previous correlative studies which failed to find a significant relationship between emotional recovery and social sharing (see Chapter 5, this dissertation). Noteworthy, the two types of episodes did differ very markedly with respect to extent of social sharing reported by participants for the time of recall, as well as the need to share what they were feeling "now." Consistent with the idea that social sharing and need to socially share an event are indices of emotional impact (see Chapter 1, this dissertation), unrecovered events were eliciting a stronger need to share and more social sharing frequency than recovered events. Altogether, these observations thus supported the internal validity of the concept of "emotional recovery".

2. External validity of emotional recovery and the adjustment to emotional experiences

In fact, emotional recovery is considered as one dimension of the adjustment to emotional events. In order to study how communication of emotions is related to successful adjustment, it is necessary to address the question of how successful adjustment should be conceptualised and measured. Investigators studying the coping process have identified many characteristics thought to reflect good adjustment with life crises (e.g., Silver & Wortman, 1980). These include physical, mental and cognitive, emotional, and social aspects. Adjustment in fact refers to the degree of effective or healthy functioning. But what is effective functioning? It may represent very different levels of analysis. These may include keeping one's distress within manageable limits, maintaining a realistic appraisal of the situation, maintaining social integration or being able to carry out socially desired goals, maintaining a positive self-concept, and maintaining a positive outlook on the situation (see e.g., Friedman, Chodoff, Mason, & Hamburg, 1963; Haan, 1977; Hamburg & Adams, 1967; Meyers, Friedman, & Weiner, 1970). The difficulty in assessing adjustment is that people may be well adjusted at one of these levels and not at another one (e.g., functioning well socially but being unable to maintain a positive self-esteem, or the reverse).

In contrast with the research conducted by Pennebaker, colleagues, and other previous investigators who measured general adjustment outcomes (i.e., physical and mental health), I investigated emotional recovery from specific events. In other words, they assessed general physical and mental adjustment whereas my research relies in the study of a dependent variable that has never previously been investigated and which refers to the decrease of the emotional impact of an event over time. However, emotional recovery may, as other physical and mental health measures, be considered as an adjustment measure to the deleterious impact of emotional episodes. It may thus be correlated with other dimensions of adjustment.

In Experiment 2, physical health and well-being outcomes were considered. In the study described below, two other dimensions of the adjustment to emotional events were addressed to check the external validity of the emotional recovery concept. First, the self-concept was considered. Second, loneliness state, a social dimension of the adjustment to emotional episodes that was never considered in previous research on the impact of communication of emotion, was taken into account.

The self-concept

The self-concept is composed of two aspects, one which is relatively stable over time and situation (i.e., a trait) and the other which fluctuates (i.e., a state). Indeed, on the one hand, considerable evidence has been reported that the self-concept is persistent and stable and that people will actively seek information that confirms their self-concept and reject information that threatens their general view of self (Greenwald, 1980; Markus, 1977; Swann, 1985, 1987; Wylie, 1979). On the other hand, it is well known that situational factors can lead to momentary

changes in self-evaluation (Baumgardner, Kaufman, & Levy, 1989; Jones, Rhodewalt, Berglas, & Skelton, 1981; Kernis, Grannemann, & Barclay, 1989; Markus & Kunda, 1986; Rosenberg, 1986; Tesser, 1988). By intruding into one's life as an unexpected and arbitrary event, an emotional episode can affect two components of the self-concept that seem particularly important for health and well-being: (1) an evaluative component which is the self-esteem, and (2) a structural component which is the clarity of the self.

Self-esteem is defined as the valence (positive or negative) associated with the perception of oneself. Psychologists have long recognised the vitally important role that self-esteem plays in mental health and the guidance and direction of behaviour. People have a strong and pervasive need to maintain positive evaluations of themselves (S. E. Taylor, 1983). They maintain a relatively high level of self-esteem (i.e., a positive view of themselves) (Greenwald, 1980) and generally operate under the assumption that they are worthy and decent people (Janoff-Bulman, 1992). However, Heatherton and Polivy (1991) have adequately demonstrated that self-esteem is sensitive to laboratory and naturally occurring ego-threatening events (i.e., failure at resolving a puzzle, and failure at an examination). Experiencing a traumatic or emotional event may lead to serious questioning of the self-perceptions. Negative emotional or traumatic events usually activate negative self-images in the person (Janoff-Bulman, 1985). For example, people see themselves as weak, helpless, needy, frightened, and out of control. Self-esteem state may thus be a good measure of the degree of adjustment to emotional episodes.

The clarity or certainty of self-concepts is "the extent to which they are clearly and confidently defined." (p. 539) According to Campbell (1990), self-concepts have a structure of knowledge that is more or less clear or certain. As an emotional or traumatic event challenges the content of the self-concept, the clarity and structure of the self-concept is also thought to be challenged. In other words, people who experience an emotional or traumatic event should be less clear or confident in their view of themselves. Moreover, if emotional or traumatic events decreases one's self-esteem, the clarity of the self-concept may also be influenced. In support of this prediction, Campbell (1990) has demonstrated that self-concepts of low self-esteem people are characterised by less clarity or certainty than those of high self-esteem. This means that low self-esteem people have more poorly articulated notions of who or what they are. As a consequence, they are thought to be more dependent on, susceptible to, and influenced by external self-relevant stimuli. Thus, if emotional or traumatic events challenge one's self-esteem, it is also very likely that the clarity of the self-concept will also be challenged. Clarity of the self may thus also be a good measure of the degree of adjustment to emotional episodes.

Loneliness.

Definitions of loneliness emphasise that loneliness is an unpleasant, distressing experience that results from *perceived* deficiencies in one's social relationships or integration (e.g., Buunk, 1996; Derlega & Margulis, 1982; Peplau & Perlman, 1982). There are two approaches to the study of loneliness. First, characteriological theorists place the source of the

perceived deficiencies in a trait or individual difference that is determined by genetic predispositions and early development history (i.e., loneliness trait). For example, certain people are more prone than others to perceive themselves as a lonely person because of who they are, how they view themselves, and how they view social situations. Second, situational theorists place the source of the perceived deficiencies in the objective environment (i.e., loneliness state). For example, the loss of a partner is an event that is very likely to induce significant perceived loneliness due to the situation itself. With its powerful experiential components, an emotional state can elicit excessive self-focused attention, and thus induce a dissociation of the person from the social environment. Specifically, emotional or traumatic events may thus induce a feeling of loneliness. Indeed, when an emotional or traumatic event occurs, the person is the only person to face the problem, from his or her own point of view. The person might feel that he/she is the only person that can understand what happened, what he/she feels, why he/she reacted the way he/she did, etc. Adjustment to emotional episodes may require the person to feel again integrated in his/her group of intimates or relatives. Loneliness state may thus be a third good measure of the degree of adjustment to emotional episodes.

3. Effects of communication of emotional experiences and the degree of emotional recovery

An important concern raised by previous studies is that one could argue that emotional episodes that were talked about in these studies had already been recovered from or that they were not sufficiently intense to allow the observation of emotional recovery. This issue was raised in Chapter 7 when the characteristics of the emotional episodes discussed during the interview were presented. Evidence was provided that the communicated episodes were still very upsetting at the beginning of the study and that they should thus be unrecovered from. In addition, selection criteria of the recalled episodes were very precise and included characteristics of unrecovered events (e.g., it should be an event that you still think about, that you still want to talk about). Finally, it was shown that, over time, emotional recovery was possible because significant evolution of emotional impact measures occurred from before to after the interview. However, the idea cannot be completely ruled out that one should have explicitly asked participants to recall "unrecovered events." The study to be described below thus investigated the impact of the communication of emotional episodes that were recovered from in contrast with the impact of the communication of episodes that were unrecovered from.

4. The impact of communication on recovered and unrecovered events

In the study reported in Chapter 7, participants may have reported beneficial effects of the communication of emotion, not because they recovered from the event, but because other beneficial effects had occurred. In the study to be described below, the question of whether communication of emotion could induce benefits in the self-concept and in the loneliness states

was investigated. These hypotheses are likely for reasons that are explained in more details below.

Talking with supportive and empathic others may facilitate adjustment to emotional events in several ways. A first way may be the restoration of the self-concept. Indeed, self-esteem can be enhanced by communicating to persons that they are valued for their own worth and experiences and are accepted despite any difficulties or personal faults (S. Cohen & Wills, 1985). This type of support has been referred to as emotional support, expressive support, self-esteem support, ventilation, and close support (e.g., Cobb, 1976; Stroebe & Stroebe, 1996; Wills, 1985). Esteem support by means of communication of emotion may counterbalance threats to self-esteem that commonly occur as a response to emotional episodes. Changes in self-esteem and clarity of the self may thus well be observed as a result of the communication of emotional episodes.

A second way through which talking about emotional events may facilitate adjustment is the restoration of people's social integration. Spending time with others who listen carefully and comprehensively to their emotional episodes may help adjustment by fulfilling a need for affiliation and contact with others, by helping to acknowledge something that has been privately experienced, or by reassuring love and care. As a consequence, communication of emotion should help people to feel less lonely. Social sharing of emotion is thought to help the restoration of social bondings and the decrease of loneliness because it can decrease the *physical distance* between partners of social sharing of emotion. Indeed, it was shown that when intense emotions were shared, listeners reduced their use of verbal mediators in their responses. As a substitute, they manifested non-verbal comforting behaviours, like hugging, kissing, or touching (Christophe & Rimé, 1997). Second, social sharing of emotion may elicit *liking relationships*. A recent meta-analytic review indeed indicated that people who engage in intimate disclosures tended to be liked more than people who disclosed less and that disclosure was found to cause people to like their listeners (N. L. Collins & Miller, 1994). Third, when fundamental beliefs are challenged, basic security is undermined. In such situation, people are likely to search for *social support and coping assistance* (Schachter, 1959). By talking about their emotions with significant members of their social environment, people are thus likely to find social support and to feel more socially integrated and accepted (e.g., S. Cohen & Wills, 1985; Thoits, 1984; Wallston, Alagna, DeVellis, & DeVellis, 1983). Thus, researchers might be able to decrease feelings of loneliness by manipulating intimate self-disclosure or social sharing in the laboratory.

5. Design

In the present study, participants were interviewed about an emotional episode. In one condition, the episode had to be recovered. In the other one, it had to be unrecovered (i.e., still involving negative emotions when thinking about it). The interview consisted of a detailed

communication of the episode. Dependent variables included measures of emotional impact, state self-esteem, clarity of the self, loneliness state, and perceived benefits of communication.

6. Hypotheses

In the study presented below, it was expected that emotional impact measures would be strongly associated with recovery ones. Because emotional impact measures as well as self-concept and loneliness outcomes are supposed to reflect adjustment to emotional events, it was expected that these would be correlated one with another.

In addition, the following experimental hypotheses which are presented in Figure 8.1 were tested:

Hypothesis 1. Indices of emotional impact at the occurrence of a recovered emotional event will be similar in intensity relative to these indices for an unrecovered emotional event.

Hypothesis 2a. When remembering an emotional event, the reported emotional impact at the moment of recall of a recovered emotional event will be markedly smaller in intensity relative to the emotional impact for an unrecovered emotional event.

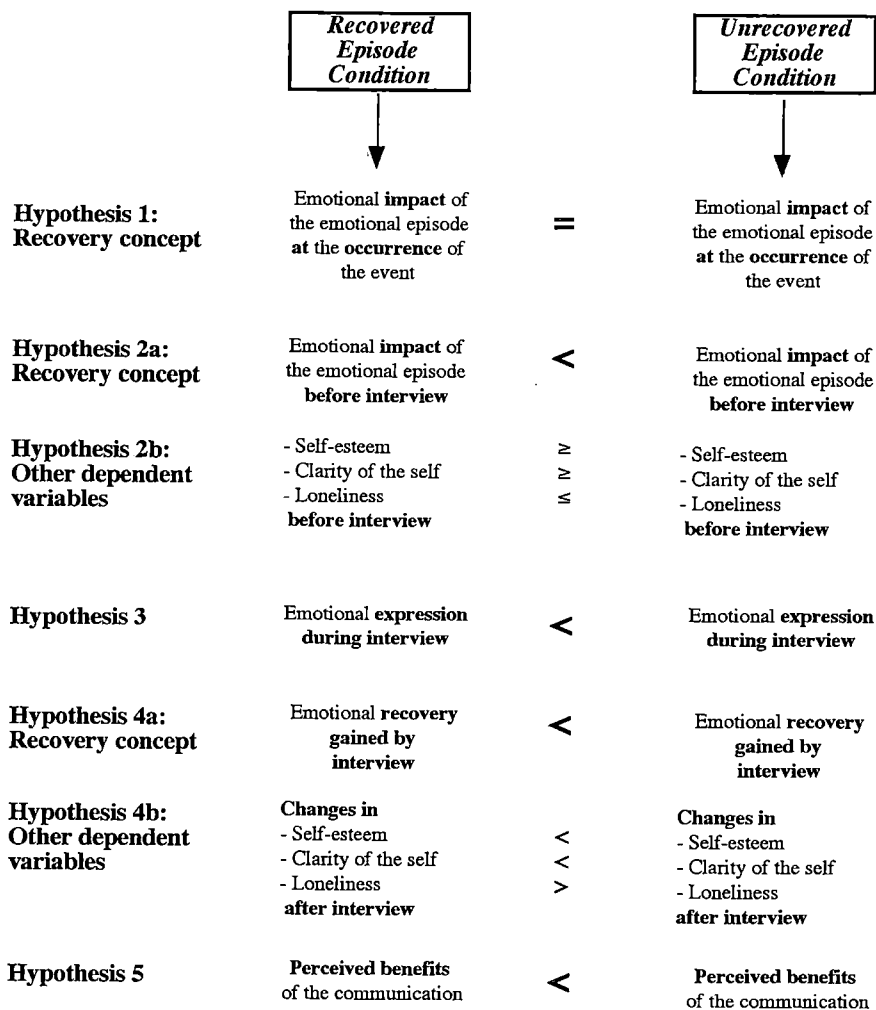
Hypothesis 2b. Whether the reported self-esteem and clarity of the self at the moment of recall of a recovered emotional event will be similar or greater in intensity relative to self-esteem and clarity of the self when remembering an unrecovered emotional event was exploratory. Whether the reported loneliness state at the moment of recall of a recovered emotional event will be similar or smaller in intensity relative to loneliness when remembering an unrecovered emotional event was also exploratory.

Hypothesis 3. During communication, indices of emotional expression will be less present when talking about a recovered emotional event relative to when talking about an unrecovered one.

Hypothesis 4a. After a detailed communication of an emotional event, people will recover less from their emotions when they talked about a recovered emotional event than when they talked about an unrecovered event.

Hypothesis 4b. Three days after a detailed communication of an emotional event, people will benefit more from the communication of an unrecovered emotional episode than from the communication of a recovered one. This will be indicated by more self-esteem, more clarity of the self, but less loneliness in the group where they talked about an unrecovered emotional event.

Hypothesis 5. Finally, people will report less perceived benefits brought by the session of communication when they talked about a recovered event than when talking about an unrecovered one.

Figure 8.1 *Hypotheses of Experiment 3*

2. Method

1. Participants

One hundred and eighty-three psychology students (152 females and 31 males) enrolled in an advanced class on emotion interviewed two of their relatives who had agreed upon a request to contribute to the student's training in the practice of interviewing. Each student (interviewer) received an envelope with questionnaires and detailed instructions for conducting two interviews, one on a recovered episode, and the other on an unrecovered episode. To avoid long questionnaires with many items, four types of questionnaires existed. Interviewers were randomly assigned to receive one of the four types of questionnaires. Respectively, 46, 47, 48, and 42 interviewers received the questionnaires assessing the emotional impact of the episode, the loneliness state of the interviewee, the clarity of the self of the interviewee, and the self-esteem state (see Measures section). Interviewers were instructed to start interviewing in a random order either on the recovered, or on the unrecovered episode.

In total, 366 participants were interviewed (241 women and 125 men), with half of them on a recovered negative emotional episode, and half of them on an unrecovered negative episode. Manipulation checks were conducted in order to verify whether interviewers had followed the instructions for selecting a recent negative episode and for conducting a detailed interview. Forty-nine interviewees (13%) had to be eliminated from the data for different reasons (i.e., the emotional episode was not recent (more than 3 years ago), missing date of occurrence of the episode, the interview was too short (< 10 minutes), see Results section). Retained interviewees did not differ from excluded interviewees with regard to the type of questionnaire received, $\chi^2(3, N = 366) = 3.08$, *ns*, nor to the type of episode (recovered vs. unrecovered) they were assigned to talk about, $\chi^2(1, N = 366) = 1.16$, *ns*.

The final sample consisted of 317 interviewees (204 women and 113 men), with respectively 155 interviewees in the recovered episode condition and 162 in the unrecovered condition. Interviewees' age ranged from 15 to 82 years ($M = 26.50$, $SD = 11.07$). Interviewees did not differ between conditions (recovered vs. unrecovered) with regard to their age, $t(315) < 1$, or gender, $\chi^2(1, N = 317) = 1.82$, *ns*. A majority of them were students (69%). Twenty-three percent of the interviewees were employed people. The rest were unemployed (5%), retired people (2%), and house keepers (1%). The vast majority of interviewees (90.5%) had education beyond the high school level (> 12 years of education). Respectively, 75, 83, 84, and 75 interviewees have answered the questionnaires assessing the emotional impact of the episode, the clarity of the self, the loneliness state, and the self-esteem state. Interviewees did not differ between type of questionnaire they received with regard to their gender, to the type of antecedent situation, initial emotional intensity elicited by the episode, or date of episode (for all tests, p 's > .16). They slightly differed with regard to their age, $F(3, 313) = 3.66$, $p = .01$, with interviewees who received the impact questionnaire

being older ($M = 29.59$; $SD = 6.98$) than interviewees who received the clarity of the self questionnaire ($M = 24.11$; $SD = 12.30$). There are, however, no theoretical or empirical reasons to believe that this 5-year difference in age for the type of questionnaire received may have influenced the results.

2. Procedure

As in Experiment 1, students in the third and fifth year of their curriculum for the undergraduate degree in psychology who had chosen a class on emotion and expression were asked to collect data on emotional episodes. During a briefing session, the procedure was explained to them and they were prepared with regard to the interviewing instructions as well as ethical principles. The study *preceded* a phase during which students were taught about communication of emotion and the hypotheses of the study. When conducting the experiment, interviewers were thus blind to hypotheses. Each student-interviewer received an envelope with three sets of questionnaires, one for the pre-interview measures, one for immediately after the interview, and one for the follow-up conducted 3 days after the interview. In the envelope, they also received two sets of detailed instructions on how to conduct the interviews. The whole procedure is depicted in Figure 8.2.

They were asked to find a person from their surroundings who would be ready to participate in a study on emotions. At the beginning of the first session, interviewers asked the interviewee to recall a recent negative emotional episode which had some importance in their life and about which he/she would be willing to talk. In a Recovered episode condition, interviewees were asked to recall an episode which was recovered. They were told:

I would like you to recall a recent episode that provoked in you a strong negative emotion. It needs to be an episode, thus something that happened at a precise moment in time, and not a situation that would have lasted several days or weeks. It needs to be an episode from which you have recovered, this means that when you think about it, you do not feel any sadness, pain, nor any other similar painful emotions.

In an Unrecovered episode condition, interviewees were asked to recall an unrecovered episode. They were told:

I would like you to recall a recent episode that provoked in you a strong negative emotion. It needs to be an episode, thus something that happened at a precise moment in time, and not a situation that would have lasted several days or weeks. It needs to be an episode from which you have not recovered, this means that when you think about it, you still feel sadness, pain, or other similar painful emotions.

Interviewers were asked to randomly start interviewing according either to the Unrecovered episode condition, or to the Recovered one. When interviewees had found an episode corresponding to the instructions, they were given the pre-interview questionnaires.

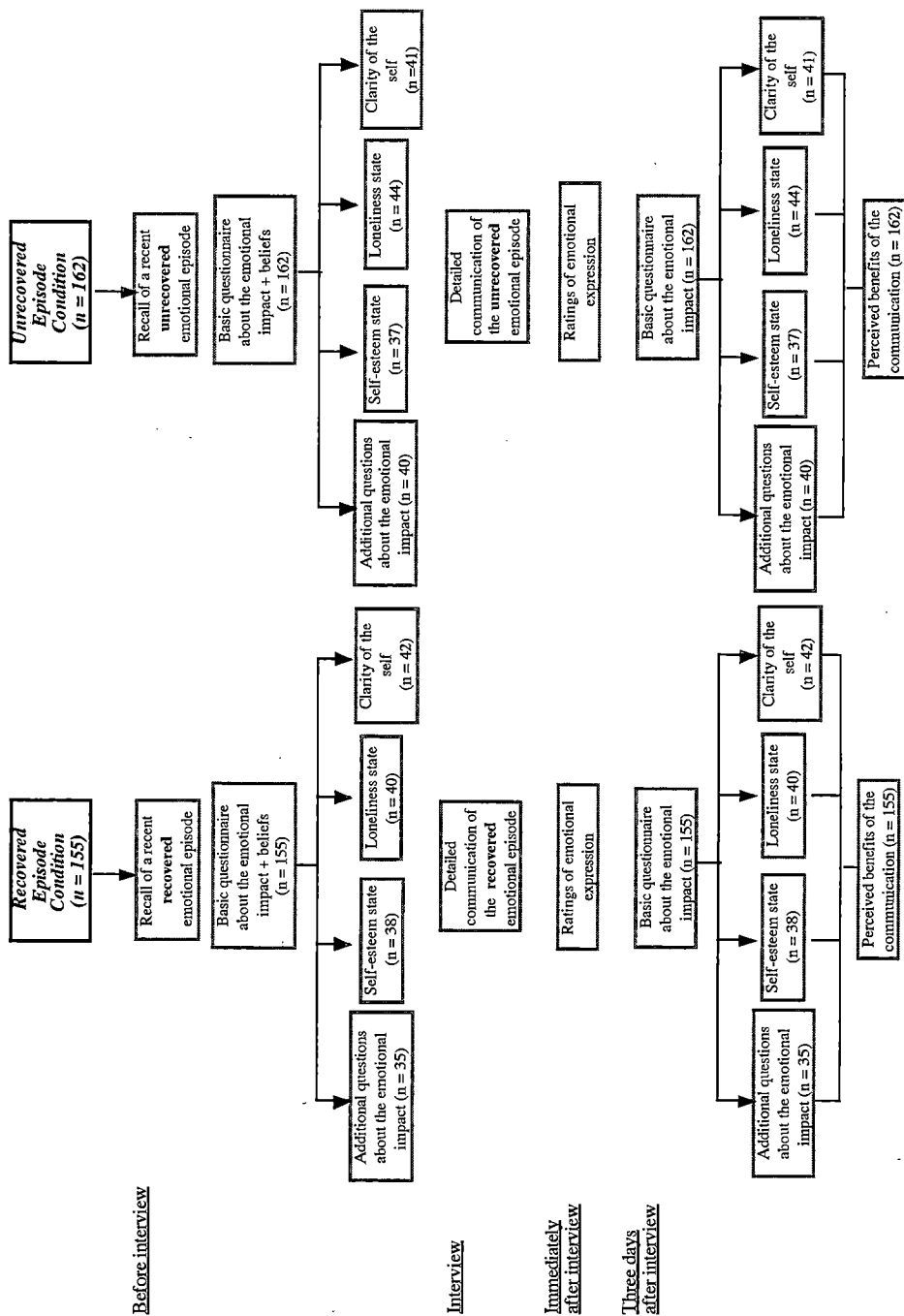


Figure 8.2 Procedure of Experiment 3

Then, a detailed interview of about 30 minutes was conducted. The interview consisted of a detailed description of all circumstances that were involved in the emotional episode, of all feelings and emotions that were felt, as well as all meanings and consequences that the episode might have had on the person. The interview had to be conducted in a non-directive manner, the interviewee having the initiative of the discussion, and the role of the interviewer being to react with interest and to gather the most detailed information. Interviewers noted the time when the interview began.

At the end of the interview, interviewees answered the post-interview questionnaire while the interviewer noted the time when the interview ended and rated both the interviewee's and their own emotional reactions to the interview. An appointment was then made with the interviewee for the follow-up session conducted after three days.

At the follow-up session, interviewees again answered the questionnaires. They were then extensively debriefed and thanked for participation.

3. Measures

In addition to questions intended to describe what happened during the interview, six dependent variables have been investigated: (1) the emotional impact of the episode; (2) the clarity of the self; (3) the self-esteem state; (4) the loneliness state; (5) the perceived benefits of communication of emotion, and (6) the beliefs about the effects of communication of emotion. In an envelope, interviewers had received, together with the instructions for conducting the interviews, one of four types of questionnaires. Every questionnaire assessed the emotional impact of the episode (i.e., initial and current emotional intensity scale, remaining emotional impact of the episode, initial frequency and current need of social sharing), the extent of social sharing during the interview, the perceived benefits of the interview, and the beliefs about the effects of communication of emotion. In addition, one questionnaire investigated in a more detailed manner the emotional impact of the episode (i.e., initial negative emotions, search for meaning, two additional remaining emotional impact questions, initial social sharing delay and current social sharing frequency, and current mental rumination). A second questionnaire included an adapted and translated version of the Clarity of the Self-Concept Scale (Campbell, 1990). A third questionnaire included a translated version of the State Self-Esteem Scale (Heatherton & Polivy, 1991). And a fourth questionnaire included a translated version of the revised ULCA Loneliness Scale (Buhrmester, Furman, Wittenberg, & Reis, 1988; D. W. Russell, Peplau, & Cutrona, 1980).

Emotional Impact of the Episode Questionnaire.

Because it was preferable to have a similar number of questions in each of the four types of questionnaires, a short version of the Emotional Impact of the Episode Questionnaire was used. It included the following scales and items:

Emotional intensity scale. Interviewees rated on a 11-point scale (*no upset* (0) / *strongest upset ever experienced in my life* (10)) the emotional impact of the episode at its occurrence and when thinking about it now (asked before and immediately after the interview, as well as at follow-up).

Differential emotional scale. At pre-interview, interviewees rated, along 7-point scales (*not at all* (0) / *a great deal* (6)) how intensely the episode evoked the following primary emotions: Sadness, anger, fear, disgust, shame, and guilt at its occurrence. Because there was no internal consistency between these six items (Cronbach's $\alpha = .32$), no averaged score was computed.

Search for meaning. At pre-interview and at follow-up, interviewees rated on 7-point scales (*not at all* (0) / *very much* (6)), how far they still experienced event-related cognitive needs: (1) need to understand why and how it happened; (2) need to put order in what happened, (3) need to find words to express; (4) need to find understanding; (5) need to find meaning in what happened, (6) need to remember the details of what happened, (7) need to modify what happened, and (8) need to imagine how things would be if the episode had not occurred. Because these items showed internal consistency (Cronbach's $\alpha = .79$), ratings were averaged to obtain a search for meaning score.

Remaining emotional impact of the episode. At both pre-interview and follow-up, interviewees rated on a 7-point scale (*not at all* (0) / *a great deal* (6)), how far they had recovered from the episode (recovery). In the more detailed questionnaire assessing the emotional impact of the episode, interviewees also rated on the same scales how far (1) event-related thoughts were still painful (painfulness); and (2) they still felt involved by the episode (involvement). These three items showed internal consistency with the recovery score negatively keyed (Cronbach's $\alpha = .89$). They were thus averaged to obtain a remaining emotional impact score.

Social sharing. At pre-interview, interviewees rated the delay elapsed between the episode's occurrence and the first social sharing (*on the day of the episode's occurrence / during the 2 to 3 following days / during the first week / during the first month / later / never*). At both pre-interview and follow-up, interviewees rated on a 7-point scale (*not at all* (0) / *a very strong need* (6)) how far they needed to talk about the episode. They also rated on a 7-point scale (*never shared* (0) / *shared 6 times or more* (6)) the frequency of their social sharing.

Mental rumination. At pre-interview and at follow-up, interviewees rated the frequency of ruminations about the episode (during the last three days) along a 7-point scale (*never* (0) / *6 times or more* (6)). In addition, they estimated on 7-point scales (*not at all* (0) / *very much* (6)), whether these thoughts (1) disrupted their current activities; and (2) were difficult to eliminate. These items showed internal consistency (Cronbach's $\alpha = .77$), they were thus averaged to obtain a mental rumination score.

Clarity of the Self-Concept Scale.

The Clarity of the Self-Concept Scale (Campbell, 1990) was used to evaluate the clarity participants had in their self-concept. Clarity of the self-concept is indicated (1) by the extremity of the respondents' self-descriptions (see below) and (2) by the confidence they have in their self-descriptions (Campbell, 1990). This scale is composed of 15 pairs of adjectives. Interviewees were asked to indicate how they viewed themselves on each of the 30 adjectives (7-point scales) and then to rate how confident or sure they felt about each of their self-ratings on 7-point scales (*not at all confident / very confident*). The 15 pairs consisted of the adjectives predictable / unpredictable, silly / serious, tactful / candid, unconventional / conventional, assertive / soft-spoken, solemn / light-hearted, gentle / boisterous, deliberate / spontaneous, competitive / co-operative, quiet / outspoken, independent / dependent, cautious / risky, ambitious / laid-back, extravagant / thrifty, and yielding / dominant. One measure of extremity was calculated for each interviewee which was the number of extreme responses (i.e., 1, 2, 6, 7 as opposed to 3, 4, 5) on each of the adjectives. Ratings nearer to the midpoint of the scale are expected to reflect lower confidence in themselves (Campbell, 1990). A measure of confidence was calculated for each interviewee which was each subject's average confidence rating for the 30 items (Campbell, 1990). The questionnaire was titled Current Thoughts to highlight the importance of momentary feelings.

State Self-Esteem Scale.

The State Self-Esteem Scale was demonstrated to be sensitive to natural fluctuations, to self-esteem manipulations induced in the laboratory, and to a clinical therapy program (Heatherton & Polivy, 1991). This scale is composed of 20 items measuring three factors: (1) performance, (2) social, and (3) appearance self-esteem. For example, the item "I feel confident about my abilities" represents performance self-esteem state. The item "I am worried about whether I am regarded as a success or failure" represents social self-esteem state. The item "I feel satisfied with the way my body looks right now" represents appearance self-esteem state. Each item is scored on a 5-point scale (1 = *not at all*, 2 = *a little bit*, 3 = *somewhat*, 4 = *very much*, and 5 = *extremely*). The questionnaire was titled Current Thoughts to highlight the importance of momentary feelings.

The following instructions were also designed to highlight current feelings of self-esteem:

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW.

Revised ULCA Loneliness Scale.

The Revised ULCA Loneliness Scale measures the state of loneliness (Buhrmester et al., 1988; D. W. Russell et al., 1980). It is composed of 20 items scored on a 4-point scale (1 = *not at all*, 2 = *seldom*, 3 = *sometimes*, and 4 = *often*). Interviewees were asked to rate in how far the sentences best described the way they felt in the last three days (e.g., "I have felt isolated from the others"; "I could find companionship when I wanted"; "There were people to whom I could talk"). Half of the items were negatively keyed. In the present sample, the 20 items showed high internal consistency (Cronbach's $\alpha = .91$) and ratings were summed to obtain a loneliness score.

Participant's beliefs about the effects of communication of emotions.

Before interview, every questionnaire assessed participant's personal beliefs about the effects of communication of emotions. They were asked to rate on 7-point scales (*not at all* (0) to *a great deal* (6)), whether they believe that talking about an emotional event is helpful, and whether they believe that talking about one of their emotional experiences to someone they trust is relieving for them.

Description of the interview.

Interviewee's ratings of extent of social sharing during the interview. Immediately after the interview, interviewees rated, on 7-point scales (*not at all* (0) / *a great deal* (6)) the extent to which they (1) had talked in a very detailed manner about emotional aspects (feelings, emotions, etc.), (2) had overtly expressed strong emotions, and (3) were detached or not implicated by what they were talking about.

Interviewer's ratings of extent of social sharing during the interview. Immediately after the interview, interviewers rated, on 7-point scales (*not at all* (0) / *a great deal* (6)), the extent to which the interviewee (1) had talked in a very detailed manner about emotional aspects (feelings, emotions, etc.), (2) had overtly expressed strong emotions, and (3) was distant, detached during social sharing. In addition, interviewer's rated on the same 7-point scales the extent to which he/she (1) had overtly expressed his/her emotions, (2) was upset by the sharing of the episode, and (3) felt distant, detached during social sharing.

Perceived benefits of the interview.

Immediately after the interview, interviewees rated on 7-point scales, (*not at all* (0) / *a great deal* (6)), the extent to which they (1) felt understood, (2) were satisfied with the interview, and (3) felt at ease. They also rated on the same 7-point scale the extent to which talking about their emotional episode had made them feel good. At the follow-up session conducted 3 days after the interview, they again rated this latter question, as well as the following questions about the perceived benefits of the interview: (1) whether it was

meaningful, (2) whether it was useful, (3) whether it had influenced their perception of the episode. These four items showed internal consistency (Cronbach's $\alpha = .85$) and ratings were averaged to obtain a perceived benefits of communication score.

3. Results

1. Conformity to instructions

As in Experiment 1, interviewers had been instructed to conduct an interview which would allow the interviewee to talk in detail and at great length about their emotional episode. Interviews that had lasted less than 10 minutes were thus eliminated from the sample. This was the case for 2 interviews. Interviewees were also asked to recall a recent emotional episode. After inspection of the data, I realised that some events had happened really long ago, that is more than five years ago, for some more than 10 years ago (the oldest episode had happened 27 years before the beginning of the study). A cut-off point of 3 years was used to differentiate "recent" from "old" episodes. Thus, for homogeneity purposes, emotional episodes that had happened more than 3 years before the beginning of the study were eliminated. This was the case for 40 additional interviewees. In addition, missing values were found on one of these two items (length of interview and date of occurrence) for 7 interviewees. Thus, the sample on which analyses were conducted consisted of 317 interviewees. Retained interviewees did not differ from excluded interviewees with regard to the type of questionnaire received, $\chi^2(3, N = 366) = 3.08, ns$, the type of episode (recovered vs. unrecovered) they were assigned to talk about, $\chi^2(1, N = 366) = 1.16, ns$, their gender, $\chi^2(1, N = 366) = 2.46, ns$, nor type of antecedent eliciting emotion, $\chi^2(3, N = 366) = 1.70, ns$. Excluded interviewees were slightly older ($M = 31.84$; $SD = 14.52$) than retained interviewees ($M = 26.50$; $SD = 11.07$), $t(346) = -2.46, p < .05$. Excluded interviewees also tended to have a lower level of education (9 interviewees were excluded on 39 that had an education level below the high school level, thus 23.1%) as compared to retained interviewees (40 interviewees were excluded on 327 that had an education level beyond the high school level, thus 12.2%). Interestingly, interviewees with a low education level were older ($M = 34.31$; $SD = 18.63$) than those with a high education level ($M = 26.37$; $SD = 10.31$), $t(346) = -2.61, p < .05$. It is possible that interviewees with a lower level of education had difficulties in conforming to the instructions. Respectively, 155 interviewees remained in the Recovered episode condition and 162 in the Unrecovered episode condition.

2. Description of the collected emotional materials

To allow standardisation and possible future cross-cultural comparison type of event experienced were coded according to Scherer et al.'s (1986) categorisation. This categorisation has been developed for investigation of cultural differences in type of basic emotions and type of situations that induce emotional experiences. It involves four antecedent emotions (joy, sadness, fear, and anger) which are respectively subdivided into 21, 20, 26, and 22 antecedent situations. The events were coded by two judges for antecedent emotions and situations. Disagreements were resolved by mutual discussion.

Of the 317 recent negative emotional episodes, 57% dealt with an antecedent emotion of sadness, 20% with fear, 20% with anger, and 1% with joy situations (e.g., receiving a good news such as the unexpected marriage of one's best friend, but this is rather negatively appraised and leads to negative emotions). The description of 2% of the episodes ($n = 6$) was missing. Twenty-nine percent of the antecedent situations dealt with death or permanent separation from a close person, 24% involved relationship problems with close persons or groups, 10% centred on the failure to achieve what was hoped for in an achievement-related situation (e.g., failure to pass an examination), and another 10% on traffic problems such as accidents. Other topics included physical aggression by others or to others (7%), physical pain or sickness (5%), receiving bad news (e.g., not selected for a job) (4%), or temporary separation (1%). The remaining episodes were related to a variety of antecedent situations such as free-floating feeling, solitude, loss or damage of objects, rituals or anniversaries, conscious risk-taking, fear of adverse effects from external forces (e.g., thunderstorms), unexpected time loss, end of pleasurable experience (e.g., end of holiday) (a total of 8%, 25 episodes). Finally, 6 episodes were uncodable according to the classification (e.g., "discovery of bags containing human body parts", "love affair event").

3. Internal and external validity of the emotional recovery concept.

Internal validity of emotional recovery.

To test the internal validity of the emotional recovery concept, interviewees' ratings of the intensity of the emotional event and their need to share the event at the beginning of the study were correlated with their ratings of the extent to which they felt they had recovered from their event. These measures were expected to be intercorrelated one with the other.

As can be seen in Table 8.1, the various measures of the emotional impact were intercorrelated. As expected, emotional intensity was highly and positively correlated with the need to share (31% of common variance). In addition, the degree to which interviewees estimated the recovery from their emotional event was highly and negatively correlated with emotional intensity and need to share at the beginning of the study. Thus, the more people

estimated that they had recovered from their emotional episode, the less they reported emotional intensity (49% of common variance) and the less they needed to share their emotional event (20% of common variance). These results are in support of the idea that emotional impact measures indicate and evaluate emotional recovery and that emotional recovery was validly assessed.

External validity of emotional recovery.

To test the external validity of the concept of emotional recovery, the measures of emotional impact and recovery were correlated with the scores of self-esteem state, clarity of the self, and loneliness at the beginning of the study. Because emotional impact, self-concept and loneliness states were hypothesised to reflect degree of adjustment to emotional episodes, it was expected that they would share a common variance. Correlations were only possible for three items assessing emotional impact (emotional intensity, need to share, and recovery ratings). Indeed, these were the only systematically included in the four types of questionnaires handed out to interviewers.

As can be seen in Table 8.1, two of the newly considered adjustment measures were significantly associated with the ratings of emotional intensity and recovery from the emotional episode. Correlations were in the expected directions. Indeed, emotional intensity was negatively associated with self-esteem state and its factors, whereas it was positively associated with loneliness state. The reverse associations were found for the correlations with emotional recovery. Correlations with need to share yielded a less clear picture. Indeed, only tendencies toward significance were found for correlations with self-esteem state, loneliness, and one factor of the clarity of the self-concept (extremity). These tendencies were, however, in the expected direction. Indeed, the more interviewees felt the need to share, the less they had self-esteem and clarity of the self and the more they felt lonely. Finally, clarity of the self was neither associated with emotional intensity, nor with recovery.

As expected thus, these results indicated that the more people feel upset when remembering an emotional episode, the lower their self-esteem and the higher their feeling of loneliness were. Although common variance shared by these measures is rather low (between 4 to 9%), these findings suggest that emotional impact, need to share, self-esteem, and loneliness may well assess the same underlying construct of adjustment to emotional events.

Table 8.1 Intercorrelations Between the Four Types of Dependent Variables at the Beginning of the Study

	Emotional impact (<i>N</i> = 317)			Self-esteem state (<i>N</i> = 75)			Loneliness state (<i>N</i> = 84)		Clarity of the self (<i>N</i> = 83)	
	1	2	3	4	5	6	7	8	9	10
Emotional impact										
Emotional intensity (1)	--									
Need to share (2)	.56***	--								
Recovery item (3)	-.70***	-.45***	--							
Self-esteem state (4)	-.29**	-.19†	.40***	--						
Social factor (5)	-.16	-.16	.28*	.85***	--					
Appearance factor (6)	-.27*	-.15	.34**	.72***	.38**	--				
Performance factor (7)	-.30**	-.15	.34**	.75***	.42***	.43***	--			
Loneliness state (8)	.29**	.18†	-.40***	--	--	--	--	--		
Clarity of the self										
Extremity (9)	-.08	-.18†	.11	--	--	--	--	--	--	--
Confidence (10)	-.10	-.04	.10	--	--	--	--	--	.59***	--

Note. Degrees of freedom vary: for correlations between emotional impact measures *df* = 317; for correlations with or between self-esteem state measures *df* = 75; with loneliness state *df* = 84; and with or between clarity of the self measures *df* = 83.

† *p* < .10. * *p* ≤ .05. ** *p* ≤ .01. *** *p* < .0001.

4. Were recovered and unrecovered episodes similar at their occurrence?

Results of Rimé, Hayward, et al.'s (1996) study indicated that the emotional impact felt *at the occurrence* of unrecovered and recovered episodes was similar in intensity. They also showed that initial social sharing did not differentiate recovered and unrecovered episodes. In addition to these variables, the present study investigated date of occurrence and delay of first social sharing, as well as the type of episode experienced and the type of basic emotion that the episode elicited at its occurrence. Because the number of interviewees that answered the emotional impact questions varied according to the type of questionnaire they had received, between-groups differences were subjected to a multivariate analysis of variance (MANOVA) only for the 6 emotions of the Differential Emotional Scale. Separate Student t-tests were used for the other items.

Initial emotional impact.

Results indicated that the chosen episodes tended to have occurred longer ago when a recovered episode was remembered ($M = 37.25$ weeks old; $SD = 36.74$) as compared to when an unrecovered episode was recalled ($M = 30.42$ weeks old; $SD = 36.01$), $t(315) = 1.67$, $p < .10$. Contrary to the findings of Rimé, Hayward, et al. (1996), interviewees reported that the emotional impact of unrecovered episodes was slightly more intense at their occurrence ($M = 7.77$; $SD = 1.80$) than the impact of recovered episodes ($M = 7.21$; $SD = 1.81$), $t(315) = -2.74$, $p < .01$. The initial intensity of emotions also tended to be higher across all six emotions, $F(1, 73) = 3.07$, $p < .10$. Separate ANOVAs on each of the six emotions indicated that this effect was attributable to a higher level of initial sadness for unrecovered episodes ($M = 4.58$; $SD = 1.95$) as compared to recovered episodes ($M = 3.69$; $SD = 1.81$), $t(73) = -2.04$, $p < .05$. The effect was also attributable to initial disgust which tended to be higher in the unrecovered episode condition ($M = 1.74$; $SD = 2.08$) as compared to the recovered episodes condition ($M = 2.63$; $SD = 2.44$), $t(73) = -1.67$, $p < .10$. Episodes were similar with regard to initial intensity of anger, culpability, shame, and fear (all F 's < 1). Consistent with the reported initial intensity of basic emotions, results on codings of the type of event experienced indicated that interviewees recalled unrecovered episodes that were more anticipated by sadness situations (59% of the situations for unrecovered episodes and 41% of the antecedent situations for recovered episodes), in comparison with recovered episodes that were anticipated by more fear situations (69% of the antecedent situations for recovered episodes and 31% of the situations for unrecovered episodes), $\chi^2(4, N = 311) = 15.93$, $p < .005$.

Thus, results revealed that the type of recalled emotional episodes was different for an unrecovered episode and for a recovered one. They indicated that, when asked to recall an unrecovered episode, interviewees remembered more easily sadness inducing episodes. These sad situations may well be more long-lasting or more difficult to recover from than fear inducing situations. The emotional impact felt at the occurrence of the episode was reported as

being slightly more intense in the unrecovered condition as compared to the recovered condition. This is contrary to the results of previous study by Rimé, Hayward, et al. (1996). However, mean differences between the recovered and unrecovered conditions were small. In addition, the possibility cannot be ruled out that these differences are due to reconstruction memory bias. Moreover, they may be due to emotional contagion. Indeed, the emotional intensity felt when asked to recall an unrecovered episode should be much more intense than the one felt when asked to recall a recovered episode. This intensity felt at recall may have influenced the reported initial intensity of emotion for the occurrence of the event. As will be shown in the next section discussing differences in current emotional impact, this hypothesis is quite likely.

Initial social sharing.

Interestingly, interviewees in the recovered and unrecovered groups recalled very similar episodes with regard to the delay of first social sharing and to the frequency of initial social sharing (both F 's < 1). This suggested that, consistently with previous correlative studies on naturally developed social sharing, frequency or delay of social sharing does not help people to recover from their emotions.

5. Are recovered and unrecovered episodes different now?

The principal check for testing the validity of the emotional recovery concept was to verify that unrecovered episodes were eliciting more emotional impact *at the beginning of the study* than recovered ones. Because date of occurrence and initial intensity of emotional impact differed from one condition to another, they were covariates to exclude the possibility that such initial differences would play a role in these analyses. Between groups differences in ratings of the emotional impact of the episodes were assessed using a series of ANCOVAs on the measures of emotional impact instead of MANCOVAs because degrees of freedom varied from one dependent variable to another. The present study also examined differences in current self-esteem state, clarity of the self, and loneliness at the recall of recovered and unrecovered episodes using a series of Student t -tests.

Emotional contagion?

As suggested above, it should first be noted that the emotional impact felt when answering the questionnaire may have influenced interviewee's ratings of the emotional impact for the occurrence of the event (which led to small difference in means between recovered and unrecovered episodes). In other words, a bias of emotional contagion may have been implicated. This is suggested by examination of Figure 8.3, which shows small differences in emotional intensity at the occurrence of recovered episodes or unrecovered episodes while massive differences were found on emotional intensity at their recall at the beginning of the

study.

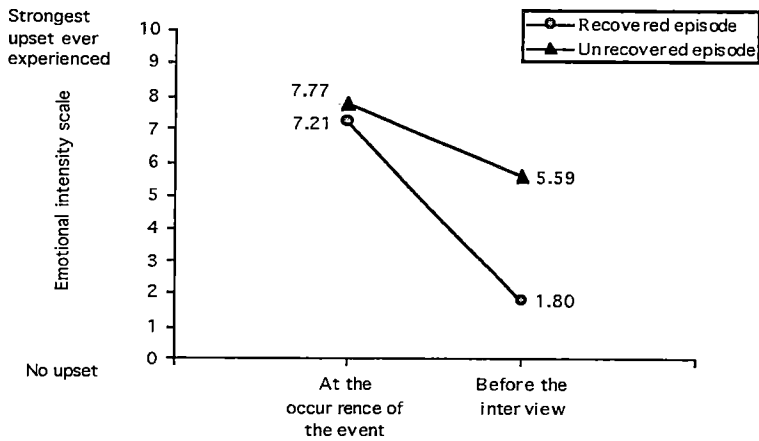


Figure 8.3 Interviewees' Ratings of the Emotional Intensity of the Episode Retrospectively at the Occurrence of the Event and at Recall Just Before the Interview

Emotional impact measures.

As can be seen in Table 8.2, results on the emotional impact questions showed marked expected differences between recovered and unrecovered episodes. Unrecovered episodes were rated as being more upsetting, implying more search for meaning, and involving more remaining emotional impact. As expected, unrecovered episodes were also rated as being less recovered as compared to recovered episodes. Results also indicated that unrecovered episodes elicited more need to share them, more current social sharing frequency, and more mental rumination than recovered episodes.

Other adjustment measures.

As can be seen in Table 8.3, no significant difference was found on the interviewees' clarity of the self. However, interestingly, interviewees who had recalled an unrecovered episode inclined in reporting themselves as being more lonely than interviewees who recalled a recovered episode, $t(82) = -1.95$, $p = .054$. Moreover, interviewees who recalled an unrecovered episode also tended to report a lower self-esteem state as compared to interviewees who recalled a recovered episode. This difference in self-esteem state was due to the factor of appearance self-esteem, $t(73) = 1.86$, $p = .07$.

Table 8.2 *Adjusted Means (SDs in parentheses) of Interviewees Ratings of Their Recovered and Unrecovered Episodes Before the Interview*

<i>Measures</i>	<i>Recovered episode</i>	<i>Unrecovered episode</i>	<i>df</i>	<i>Ancova</i>
Current emotional intensity	1.91 (1.58)	5.48 (2.17)	1, 313	298.21 ***
Search for meaning	1.54 (1.09)	2.87 (1.20)	1, 71	25.75 ***
Remaining emotional impact	1.28 (1.18)	3.74 (1.22)	1, 71	67.68 ***
Recovery item	4.97 (1.31)	2.86 (1.43)	1, 313	180.35 ***
Current need to share	1.60 (1.38)	2.74 (1.67)	1, 313	43.04 ***
Current sharing frequency	0.56 (0.85)	1.19 (1.95)	1, 71	2.76 †
Mental rumination	0.97 (0.83)	2.58 (1.41)	1, 71	34.25 ***

Note. Higher scores reflect greater intensity of emotion, stronger need to share, etc.

† $p < .10$. * $p \leq .05$. ** $p \leq .01$. *** $p < .0001$.

Table 8.3 *Means (SDs in parentheses) of Interviewees Ratings of Their Recovered and Unrecovered Episodes Before the Interview*

<i>Measures</i>	<i>Recovered episode</i>	<i>Unrecovered episode</i>	<i>df</i>	<i>Student t</i>
Self-esteem state	71.08 (8.41)	66.76 (11.54)	73	1.85 †
Social factor	25.32 (4.44)	23.76 (6.81)	73	1.18
Appearance factor	19.13 (3.51)	17.59 (3.66)	73	1.86 †
Performance factor	26.63 (3.00)	25.41 (4.14)	73	1.47
Loneliness state	33.35 (11.64)	38.57 (12.74)	82	-1.95 *
Clarity of the self				
Extremity	16.24 (4.81)	15.76 (5.78)	81	< 1
Confidence	5.77 (0.81)	5.78 (0.66)	81	< 1

Note. Higher scores reflect greater intensity of emotion, stronger need to share, etc.

† $p < .10$. * $p \leq .05$. ** $p \leq .01$. *** $p < .0001$.

Thus, similarly to previous study by Rimé, Hayward, et al. (1996), *marked* significant differences between the recovered and unrecovered episodes were observed with regard to each of the measures of emotional impact felt at the beginning of the study. All differences were in the expected direction. When episodes were unrecovered, they also elicited more need to be socially shared, they were still more frequently shared, and were more ruminated about than recovered episodes. These results indicated that emotional impact measures assessed recovery from episodes. This suggested that the measures on which my studies relied were indeed valid.

The clarity of the self did not show differences between recovered and unrecovered conditions. This indicated that this measure did not reflect emotional recovery. However, differences were found on loneliness state and self-esteem state. In contrast with emotional impact measures, these were small. This indicated that people who were asked to *remember* an unrecovered emotional event felt more lonely and had a lower self-esteem than people who remembered a recovered emotional event. Interestingly, the idea that people who *have* an unrecovered episode have also less self-esteem or feel more lonely can be excluded because interviewees were randomly assigned to recall either an unrecovered, or a recovered event. Explanations in terms of stable characteristics are thus here not likely. Thus, consistent with findings of previous studies on self-esteem and loneliness states, the present results indicated that self-esteem and loneliness are sensitive to laboratory occurring emotional events (here, the recall of the episode). Consistent with the predictions, these measures may thus be indicating adjustment to emotional events.

6. What happened during the interview?

The question is raised as to whether interviewees and interviewers in the Unrecovered episode condition had behaved in a different manner as compared to interviewees in the Recovered episode condition. It was expected that interviewees would show and express more their emotions in the Unrecovered episode condition.

Interview length was on average 6 minutes longer with unrecovered episodes ($M = 44.80$ min.; $SD = 20.96$) as compared to recovered ones ($M = 38.95$ min.; $SD = 19.16$), $t(315) = -2.59$, $p < .01$. Between-group differences were thus assessed using a series of ANCOVAs on interviewees' and interviewers' ratings of what had happened during the interview with interview length as a covariate. As can be seen in Table 8.4, results from both the interviewees and the interviewers' ratings indicated that interviewees in the Unrecovered episodes condition had overtly expressed more emotions, and were less distant than interviewees who were in the Recovered episodes condition. Interviewers had also shown more emotion, were more upset by the communication, and felt less distant in the Unrecovered episode condition as compared to the Recovered episode condition. Interestingly, they did, however, not talk more about emotions in the Unrecovered episodes condition. This suggested that talking about unrecovered

episodes indeed elicited more reactivation of the emotions than talking about recovered episodes even if interviewees did not talk more about their emotions.

Table 8.4 *Adjusted Means (SDs in parentheses) of Interviewees Ratings of the Extent of Social Sharing During the Interview*

<i>Measures</i>	<i>Recovered episode (n = 155)</i>	<i>Unrecovered episode (n = 162)</i>	<i>ANCOVAs</i>
<i>Interviewee's rating</i>			
I talked about emotions	4.35 (1.40)	4.44 (1.32)	< 1
I overtly expressed emotion	2.43 (1.80)	3.36 (1.68)	22.56 ***
I was distant	2.21 (1.93)	1.44 (1.64)	14.45 ***
<i>Interviewer's rating</i>			
Interviewee talked about emotions	3.74 (1.52)	4.02 (1.38)	3.06 †
Interviewee expressed emotion	2.38 (1.69)	3.63 (1.58)	45.83 ***
Interviewee was distant	1.98 (1.69)	1.19 (1.48)	19.33 ***
I overtly expressed my emotions	1.55 (1.37)	1.96 (1.35)	7.00 **
I was upset by the communication	2.46 (1.59)	3.39 (1.60)	26.16 ***
I felt distant	2.18 (1.71)	1.73 (1.60)	5.80 **

Note. Measures could vary from 0 to 6 and higher scores reflect greater sharing of emotion, expression of emotion, and distance.

† $p < .10$. * $p < .05$ ** $p \leq .01$ *** $p < .0001$

7. Impact of the interview on recovered and unrecovered episodes

Interviewees were expected to benefit more from the communication of an unrecovered emotional episode than from the communication of a recovered one. It was expected that, after a detailed communication of an emotional event, people would *recover less from their emotions* when they talked about a recovered emotional event than when they talked about an unrecovered event. Benefits of the communication of emotion will also be indicated by more *self-esteem*, more *clarity of the self*, but less *loneliness* in the group where they talked about an unrecovered emotional event. Because degrees of freedom varied from one dependent variable to another, the dependent variables of related facets were subjected to 2 X 2 (Recovery X Time) between-within repeated measures analyses of covariance (MANCOVAs). Because date of the event's occurrence and interview length had systematically varied between

conditions, these variables were covariates in the analyses.

Emotional impact of the episode.

As can be seen in Table 8.5, for all seven variables related to the emotional impact of the episode, highly significant Recovery main effects were found. Examination of the means confirmed that the emotional impact of recovered episodes was less intense as compared to the emotional impact of unrecovered episodes. In addition, significant or marginally significant main effects for Time were found for 4 of the 7 measures related to the emotional impact of the episode. Examination of the means indicated that the emotional intensity, the remaining emotional impact, and the need to socially share had decreased from before to after the interview. It also indicated that episodes were more recovered from after than before the interview. Finally, significant Recovery X Time interactions were found on 4 of the 7 dependent variables related to the emotional impact of the episodes. Consistent with expectations, although the emotional impact of recovered episodes remained stable over time, it decreased for unrecovered episodes.

Self-esteem state, loneliness state, and clarity of the self.

Contrary to expectations, no significant Recovery X Time interaction was found on any of the other dependent variables assessing adjustment (see Table 8.5). A significant main effect of Time was found on the measure of extremity of clarity of the self. Examination of the means indicated that interviewees were less extreme in their self-descriptions three days after the interview as compared to before the interview. No other significant main effect for Time was found on self-esteem state, loneliness state, and clarity of the self. A significant Recovery main effect was found on the loneliness state. Examination of the means in Table 8.5 confirmed previous results on the loneliness state before the interview, indicating that recalling unrecovered negative episodes is associated with more loneliness than it is the case for recovered ones. Also similarly to previous pre-interview results, interviewees in the Recovered episode condition had slightly higher self-esteem state than interviewees in the Unrecovered condition. On the whole, these results suggested that loneliness and self-esteem may well reflect degree of adjustment to emotional episodes. However, they indicated that the communication of emotional episodes did not influence self-esteem state, loneliness state, nor clarity of the self.

Table 8.5 *Comparison of Interviewees' Ratings of Their Recovered and Unrecovered Memories Before Interview and at Follow-up*

<i>Measures</i>	<i>Conditions</i>		<i>Effects</i>		
	<i>Recovered episode</i>	<i>Unrecovered episode</i>	<i>Recovery</i>	<i>Time</i>	<i>R x T</i>
Emotional intensity ^a			279.74 ****	40.64 ****	16.07 ****
Before interview	1.80	5.59			
Three days after interview	1.50	4.42			
Search for meaning ^b			26.88 ****	1.85	< 1
Before interview	1.47	3.04			
Three days after interview	1.41	2.64			
Remaining emotional impact ^b			78.19 ****	3.40 †	4.40 *
Before interview	1.17	3.84			
Three days after interview	1.19	3.38			
Recovery item ^a			203.24 ****	9.71 **	5.16 *
Before interview	5.01	2.83			
Three days after interview	5.08	3.32			
Need to share ^a			62.61 ****	28.39 ****	1.43
Before interview	1.54	2.80			
Three days after interview	1.18	2.21			
Social sharing frequency ^b			4.90 *	< 1	4.19 *
Before interview	0.43	1.33			
Three days after interview	0.66	0.93			
Mental rumination ^b			43.91 ****	2.06	2.41
Before interview	0.80	2.74			
Three days after interview	0.81	2.42			
Self-esteem state ^c			3.16 †	< 1	< 1
Before interview	71.08	66.76			
Three days after interview	71.61	67.54			
Social factor ^c			1.45	2.33	< 1
Before interview	25.32	23.76			
Three days after interview	26.00	24.11			
Appearance factor ^c			3.11 †	< 1	< 1
Before interview	19.13	17.59			
Three days after interview	19.13	17.81			
Performance factor ^c			1.71	< 1	< 1
Before interview	26.63	25.41			
Three days after interview	26.47	25.62			
Loneliness State ^d			4.93 *	< 1	< 1
Before sharing	33.63	38.98			
Three days after interview	33.35	38.57			
Clarity of the self					
Extremity ^e			< 1	6.15 *	< 1
Before interview	16.24	15.76			
Three days after interview	14.90	14.90			
Confidence ^e			< 1	< 1	< 1
Before interview	5.77	5.78			
Three days after interview	5.82	5.82			

Note. Higher scores reflect greater intensity of emotion, stronger need to share, etc.

^a *N* = 317. ^b *N* = 75. ^c *N* = 75. ^d *N* = 84. ^e *N* = 83.

† *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001. **** *p* < .0001.

8. Perceived benefits from communication of emotion: Do people feel that talking helped them?

To test whether interviewees in the Unrecovered episode condition reported more perceived benefits from the communication of emotion than interviewees in the Recovered episode condition, ANCOVAs with date of occurrence of the event and length of interview as covariates were used on interviewees' immediate and follow-up ratings of perceived benefits.

The effects of communication on perceived benefits.

Immediately after the interview, interviewees had rated in how far they felt understood and satisfied with the interview, whether they felt at ease, and whether talking about their emotional episode made them feel good. Results revealed that interviewees who had talked about Unrecovered episodes felt less at ease ($M = 4.81$; $SD = 1.33$) than interviewees who had talked about Recovered episodes ($M = 5.20$; $SD = 1.10$), $F(1, 311) = 9.55$, $p < .005$. Interestingly, the two groups reported being understood by the interviewer and satisfied with the interview to the same extent (respectively, $F(1, 311) < 1$ and $F(1, 311) = 1.98$, *ns*). Noteworthy, ratings were very high (respectively, for the item "you felt understood" and for the item "you were satisfied with the interview", $M = 5.15$; $SD = 1.06$ and $M = 5.12$; $SD = 1.14$, on scales from 0 (*not at all*) to 6 (*a great deal*)). Interviewees in the Unrecovered episodes condition, however, reported that interview made them feel better ($M = 4.03$; $SD = 1.60$) as compared to interviewees in the Recovered episode condition ($M = 3.16$; $SD = 2.06$), $F(1, 311) = 15.18$, $p < .0001$.

At the follow-up conducted three days after the interview, interviewees rated in how far they found that the experiment had been meaningful and useful, whether they thought that the interview had influenced their perception of the emotional episode, and whether talking about their emotional episode had made them feel good. It was expected that participants in the Unrecovered condition would perceive the interview as being more beneficial as compared to participants in the Recovered condition. A significant condition effect was found on the average score of these four perceived benefits, $F(1, 311) = 7.22$, $p < .01$. As expected, interviewees who had talked about unrecovered episodes perceived more beneficial effects of the communication ($M = 3.72$; $SD = 1.27$) as compared to interviewees who have talked about recovered episodes ($M = 3.24$; $SD = 1.52$).

As can be seen in Figure 8.4, interviewees in the Unrecovered episode condition perceived that the interview had made them feel better, $F(1, 311) = 7.85$, $p < .005$, that the interview was more meaningful, $F(1, 311) = 8.59$, $p < .005$, and more useful, $F(1, 311) = 8.47$, $p < .005$, as compared to interviewees in the Recovered condition. Interviewees in both conditions reported that the interview has influenced their view of the emotional episode to the same extent, $F(1, 311) < 1$.

Thus, as expected, interviewees in the Unrecovered episode condition for which it

seemed more important to benefit from the communication of their episode indeed perceived that the communication of their emotions had helped them more than interviewees in the Recovered episode condition. This was very consistent for measures taken just after the interview and at the follow-up conducted after three days.

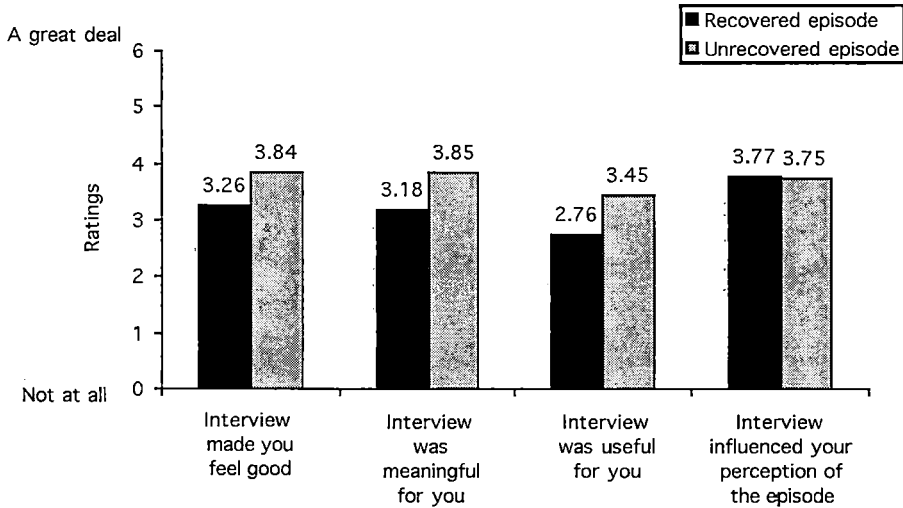


Figure 8.4 *Comparison of Interviewees' Ratings of the Perceived Benefits of their Communication of Emotion at the Follow-up Session Conducted Three Days after the Interview*

Explaining perceived benefits.

As in Experiment 2, I wondered whether people reported beneficial effects because they *conformed to their beliefs* or because they *had recovered from their emotions*. The correlation between the average score of perceived benefits on the one hand and their beliefs about the beneficial effects of communication on the other hand was computed. In addition, for each variable that was found to have significantly evolved from before to three days after the interview (i.e., emotional intensity, recovery, and need to share) a recovery score was calculated. The correlation between the average score of perceived benefits and these indices of emotional recovery was computed.

Similarly to Experiment 2, results of these correlations revealed that perceived benefits were significantly associated with the beliefs in the beneficial effects (respectively for the belief that communication is helpful in general and the belief that talking about an emotional experience is relieving for the participant in particular, $r(317) = .29$, $p < .0001$ and $r(317) = .20$, $p < .0001$). Correlations with indices of emotional recovery were never significant (all p 's $> .40$) and approached independence (the highest correlation was with need to share and amounted $r(317) = .05$). Thus, consistent with the results of Experiment 2, perceived beneficial

effects of the communication of emotional events were associated with the *belief* that communication of emotion should be beneficial, but not with the *observed benefits* in recovery from the emotion.

4. Discussion

The aims of the present study were threefold. First, I wanted to test whether the notion of emotional recovery on which my studies relied was valid. Second, I wondered whether perceived benefits reported by interviewees who share an emotional event might be due to benefits found on the self-concept or loneliness. Finally, the question arose whether recovery effects could be found when people talk about specific unrecovered emotional episodes. Each of these questions will be discussed in light with the results.

1. Validity of the concept of emotional recovery

Results confirmed that the concept of emotional recovery is valid. Correlations indicated that emotional impact measures were highly associated with self-reported recovery and that they shared up to 49% of variance. Also consistent with Rimé, Hayward, et al.'s (1996) study, the present study confirmed that the notion of "recovery" is valid because the recovered and unrecovered episodes differed very markedly in each facet of the emotional impact at the moment of recall. This was not the case with the other measures of adjustment to emotional episodes that were considered here, namely loneliness, self-esteem, and clarity of the self. Loneliness and self-esteem, however, slightly differed between conditions suggesting that adjustment in the Unrecovered condition was not accomplished at the beginning of the study. In support of this hypothesis, these measures were significantly correlated with emotional impact ones at the beginning of the study. Emotional impact and the other adjustment variables shared, however, little variance in common (4 to 9%).

Altogether, these results indicated that loneliness, self-esteem, and emotional impact indicate adjustment to emotional episodes. These measures are in fact reflecting different dimensions of the adjustment process: loneliness relates to the social dimension, self-esteem to self-perceptions, and emotional impact to the distress felt when remembering the event.

The present experiment did not confirm that the two types of episodes initially elicited a comparable emotional impact. However, mean differences were small and it was suggested that they may be due to memory bias or to the contagion of emotions. Indeed, it is possible that the interviewee's emotional impact at the moment of recall had influenced the ratings of the intensity of the emotion that was elicited at the occurrence of the event.

Consistent with previous studies on the relationship between emotional recovery and social sharing, episodes not recovered from had *initially* elicited a similar extent of social sharing. This suggested that natural social sharing does not help people to recover from their

emotions. But then, what happens when the memory of an event still affects the person in the long run? When people do not recover from the emotion, do they continue to share the emotional experience? The assumption that emotion elicits sharing leads to the prediction that in such cases social sharing would not be extinguished. Results of the present study indeed confirmed that this was the case. Episodes not recovered from elicited more *current* sharing frequency and need to share as well as more mental rumination than recovered ones. Noteworthy, these effects were maintained when controlling for date of occurrence of the event. It should thus be concluded that when people fail to recover from an emotional episode, they feel the need to talk about it, they actually do so to some extent, and continue to ruminate about it.

In the present study, also expected was the fact that talking about unrecovered episodes with an interviewer would elicit more reactivation of emotions during the interview than the communication of recovered episodes. This was clearly indicated by both interviewees and interviewers' ratings of emotional expression during the interview. Noteworthy, the interview of an unrecovered episode also elicited more emotions in the interviewer who had also shown more emotions during the interview. Both the interviewer and the interviewee felt less distant and more implicated during an interview on unrecovered episodes.

Altogether, these results indicated that remembering or talking about unrecovered episodes should have been more beneficial than remembering and talking about recovered episodes.

2. The impact of communication of recovered vs. unrecovered emotional experiences

Emotional impact.

Contrary to the findings of Experiment 1 and 2 but consistent with the view that communication of emotions helps to recover from the emotion, results of the present study indicated that, three days after the interview, interviewees in the unrecovered condition had emotionally recovered more than interviewees in the recovered condition. This might suggest that in Experiment 2, participants had recovered from their emotions and this is why no differences between conditions were observed between conditions at follow-up. There are, however, two reasons that preclude such conclusions.

First, in the previous experiment, the emotional intensity of the episodes at the beginning of the study was high and amounted $M = 6.26$ ($SD = 2.36$) on a scale from 1 = *no upset* to 10 = *strongest upset ever experienced in my life*. In the present study, interviewees in the Unrecovered condition rated the intensity of their episodes at $M = 5.59$ ($SD = 2.17$) on a scale from 0 = *no upset* to 10 = *strongest upset ever experienced in my life*. This indicated that events in the previous study were not recovered from, or at least as unrecovered as the ones chosen explicitly as "unrecovered."

Second, a methodological problem precludes one from concluding that the communication of unrecovered emotions leads to emotional recovery. Indeed, in the present study, the communication situation was confounded with time. It is thus impossible to know whether spontaneous remission had occurred, whether the observed decrease in intensity of emotion in the Unrecovered condition was due to a regression to the mean, or whether the communication of emotion had played a role in alleviating the emotional impact for the unrecovered episodes. Moreover, because the communication was detailed but unspecified, it is impossible to know whether the personal contact with the experimenter was sufficient for involving the recovery, or whether an intimate contact, involving the expression of emotions, was needed to reach the alleviation of the emotional impact for the unrecovered episodes. There is thus a need to conduct a study with two control conditions, one in which a personal contact will happen but non emotional topics will be discussed, and one in which no interview will be done but evolution of the impact will be assessed.

Self-esteem, loneliness, and clarity of the self.

There were no significant interactions between time and type of episodes (recovered vs. unrecovered) on the measures of self-esteem state, clarity of the self, nor loneliness state. This indicated that talking about unrecovered or recovered episodes does not lead to beneficial effects on these variables. In future studies, such variables will thus not again be examined.

Perceived benefits.

Interviewees in both conditions perceived benefits from the communication of their emotions: they were very satisfied and felt understood. Although interviewees in the Unrecovered condition felt less at ease than interviewees in the Recovered condition just after the interview, they reported significantly more perceived benefits three days after the interview: they reported feeling better and reported more meaningfulness and usefulness of the interview. As expected, this suggested that talking about an unrecovered episode leads to more beneficial effects than talking about a recovered episode. Contrary to common sense, these perceived benefits were not related to observed beneficial recovery effects. However, consistent with the results of Experiment 2, they were strongly associated with interviewees' beliefs in the beneficial effects of communication of emotion. The understanding of these perceived benefits will be the focus of future studies.

5. Conclusions

As in Experiment 1 and 2, in the present study, participants in all conditions showed recovery from their emotional events with time. Experiment 2 showed that these effects were not due to the communication of *emotional events*. The present study suggested that beneficial recovery effects should occur when communicating *unrecovered* episodes. It is, however, not

known whether participants have recovered because of the unspecific potential beneficial effects of the communication, or because of spontaneous remission (or regression to the mean). To distinguish these two possible effects, the next study included a group of participants who did not communicate any topic. If participants in this control group do recover from their emotions, this will suggest that "time indeed heals the wounds" (i.e., due to spontaneous remission). If they do not, this will suggest that communication, regardless of the communicated topic, is beneficial.

With regard to the perceived benefits, it is now known that they are associated with the communication of emotional events (cf. Experiment 2) and particularly in case of communication of unrecovered episodes (this experiment). These perceived benefits are strongly related to people's belief in the beneficial effects of communication but not to observed recovery effects. Up till now, these perceived benefits were essentially examined with general questions (e.g., was it meaningful, useful, interesting). Next study will investigate in more depth whether these perceived benefits are related to perceived relief from the emotion, or to other perceived benefits (e.g., cognitive, interpersonal). If people indeed report perceived relief from the emotion but no objective indices of emotional recovery for unrecovered episodes are found, this would suggest that these perceptions of recovery are based on an illusion.

Chapter 9. Experiment 4 on the impact of communication of unrecovered episodes on emotional recovery and perceived benefits

1. Introduction

The aims of this fourth experiment were twofold. First, the question of what might have been the component that alleviated the emotional impact for unrecovered episodes in Experiment 3 was investigated. Which of the following mediator leads to emotional recovery? Is it the sharing of an unrecovered episode, an emotional or intimate relationship, a social/personal contact, or the time evolution/regression to the mean? And second, are perceived benefits of communication of emotion related to perception of relief, to cognitive benefits, or to interpersonal benefits?

Four conditions were necessary in the design of this study, namely, one condition in which participants would talk about an unrecovered emotional episode whose emotional impact was assessed in the questionnaire (Target-emotion condition), one condition in which participants would talk about another negative emotional episode (Other-emotion condition), one condition in which participants would talk about trivial matters (Trivial condition), and one condition in which participants would not talk about any topics (No sharing condition). The need to have such a complex design will be explained in more details below.

1. Does communication of emotion lead to emotional recovery?

Experiment 3 suggested that, three days after the interview, interviewees in the unrecovered condition had benefited more from the communication more than interviewees in the recovered condition. Indeed, a significant decrease in emotional impact from before to after the interview occurred in the Unrecovered episode condition. However, the design of the experiment did not allow to eliminate the alternative explanation according to which the observed decrease in intensity of emotion in the Unrecovered condition was due to spontaneous remission or to a regression to the mean. Also, the design did not allow to know whether the mere contact with the experimenter was sufficient for obtaining the observed effects, or whether the sharing of emotions was needed. Bernard Rimé and myself thus decided to conduct a study with two control conditions, one in which a personal contact with the experimenter happened but non emotional topics were discussed, and one in which no interview was done but the evolution of the emotional impact would be monitored in time. Because recovery effects were

found especially in the condition where interviewees had communicated their unrecovered emotions, the study described below only focused on the assessment of unrecovered episodes.

2. Does communication of emotion lead to perceived benefits?

The benefits people perceive from the communication of emotions is a general dependent variable not specifically linked to the emotional event. These perceived benefits are related to the expression, the communication or disclosure of emotional topics. After the communication of their emotions, people feel that it was useful to share, that it was meaningful and good to share their emotions. In Experiment 2, talking about personal but non emotional topics (i.e., a day spent at university) did not lead to the same perceived benefits. According to the results found in Experiment 2 and 3, these perceived benefits are strongly related to the beliefs people hold in the beneficial effects of communication of emotions. However, they are independent of the observed recovery effects. Thus, because subjective benefits are related to the general expression of emotions, it was expected that people sharing any emotional topic would report perceived benefits.

Because people report benefits from the communication of emotion in agreement with their beliefs, if people are asked to communicate *any* emotional episode, they should report benefits. In contrast, emotional recovery from an emotional episode should happen only when this specific episode is communicated about. To test these hypotheses, one needs to measure the emotional impact for one specific event but ask people to talk about another emotional episode. In other words, two experimental conditions are needed. In both conditions, participants would talk about an emotional event, but in one of these they would talk not about the emotional event whose emotional impact has been assessed but about another one. After a while, the emotional impact of the event assessed in the questionnaire and the perceived benefits of the communication would be measured. It is expected that in both conditions participants would perceive benefits but that only participants in the condition where they had talked about the specific event whose emotional impact was assessed would significantly recover from this communicated episode.

One might expect that the beneficial effect that would be found on the emotional impact of a specific event would generalise over other emotional events. This line of reasoning, however, presuppose that the induction of communication in one setting would lead to beneficial effects that the participants would acknowledge. As a consequence, they would continue to share their emotions on other emotional events with the expectancy to find similar emotional recovery effects. However, one may doubt that this would be the case because it was shown that naturally sharing an emotional event does not help people to recover from a specific emotional event (cf. Rimé et al., 1998; and Chapter 5, this thesis).

Up till now, the benefits of the communication of emotion were only investigated with general questions. It is not known whether people perceived *relief* from their emotions, whether

they perceived *cognitive benefits* such as clarification and better understanding, or whether they perceived that the communication was *beneficial at the interpersonal level* (e.g., the other was supportive, empathetic, or understanding). In the study described below, these distinctions were taken into account and perceived benefits of communication were investigated in more detail.

3. Hypotheses

The following hypotheses which are represented in Figure 9.1 were addressed:

Manipulation check a. During the first session, the length of interview will be similar in the three conditions where interviewees talked and the interview length in these conditions will be much greater than in the condition where interviewees were not required to talk.

Manipulation check b. During the first session, indices of emotional expression will be less present when interviewees talked about trivial matters and when they did not communicate any topic relative to when they talked about an emotional episode.

Hypothesis 1. After a detailed communication of an emotional event, people will recover more from their emotions when they talked about an unrecovered emotional event than when they did not talk about it (i.e., in the Other-emotion, Trivial, and No sharing conditions).

Hypothesis 2. After a detailed communication of an emotional event, people will report more perceived benefits when they talked about an emotional event than when they did not talk about emotional topics. Whether a personal contact with an interviewer also leads to more perceived benefits than no personal contact was exploratory.

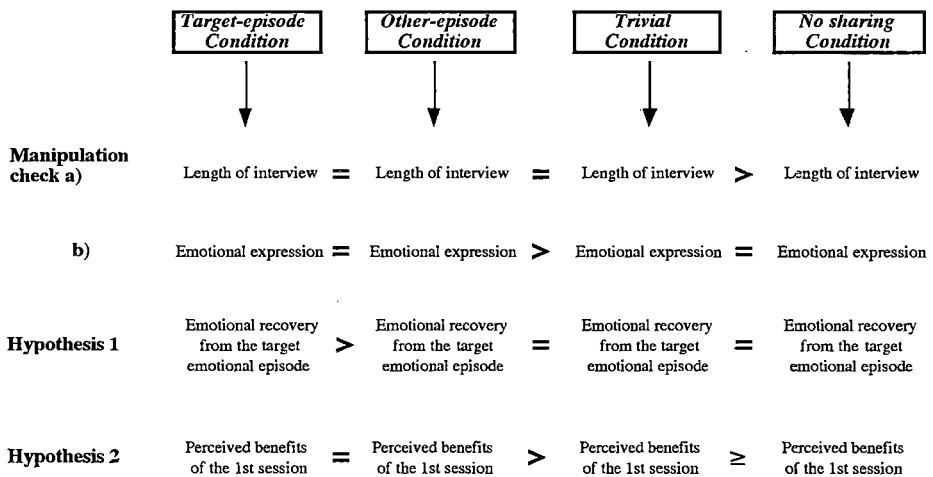


Figure 9.1 *Hypotheses of Experiment 4*

2. Method

1. Participants

Three hundred and twenty-nine psychology students (277 females and 52 males) enrolled in an advanced class on emotion volunteered to interview two of their relatives (out of a total of 406 students enrolled in the class). Each student (interviewer) received an envelope with two sets of questionnaires as well as two sets of detailed instructions for conducting interviews on unrecovered episodes: one set for the communication of emotions of the episode whose emotional impact is assessed (Target-emotion condition) and the other for one of three other conditions (i.e., Other-emotion condition, Trivial condition, and No sharing condition, see Procedure section). Respectively, 329, 116, 108, and 105 interviewers received instructions for conducting each of these conditions.

In total, 658 participants were interviewed (431 women and 227 men), with half of them according to the Target-emotion condition. Checks were conducted in order to verify whether instructions had been followed (see Results section). One hundred and seventy-two interviewees (26.1% of the total sample) had to be eliminated from the data for different reasons (i.e., the emotional episode was not recent (older than 3 years), missing date of occurrence of the episode, no data was reported on what had happened during the interview, interviewees had talked about the target episode of the questionnaire although they should not have to, they had talked more than 10 minutes in the No sharing condition, and/or they had not found or talked about another emotional episode than the one targeted in the questionnaire in the Other-emotion condition). Excluded respondents significantly differed from retained interviewees with regard to the condition they were assigned to, $\chi^2(3, N = 658) = 68.98, p < .0001$. Thirteen percent of the interviewees in the Target-emotion condition were excluded from the data, 32% in the Other-emotion condition, 40% in the Trivial, and 48% in the No sharing condition have been excluded.

The valid sample consisted of 486 interviewees (319 women and 167 men), with respectively 287, 79, 65, and 55 of them in the Target-emotion condition, the Other-emotion condition, the Trivial condition, and the No sharing condition. Interviewees' age ranged from 16 to 90 years ($M = 26.88, SD = 11.19$). A majority of them were students (61%). Twenty-nine percent of the interviewees were employed people. The remain of the sample were unemployed people (5%), house keepers (4%), and retired people (1%). Interviewees did not differ between conditions with regard to their age, $F(3, 482) < 1$, gender, $\chi^2(3, N = 486) = 1.30, ns$, nor type of emotion-eliciting situation, $\chi^2(9, N = 486) 7.70, ns$.

Due to didactic purposes (i.e., training in the practice of interviewing), all student-interviewers were asked to conduct an interview on an unrecovered episode (i.e., the Target-emotion condition). For a second interview, interviewers were then randomly assigned to one

of the three other conditions. As a consequence, conditions were unequal with regard to the number of interviewees. To allow sound statistical analyses on conditions involving an equivalent number of interviewees, the data of the Target-emotion condition was randomly divided into five equivalent-sized sub-samples. Each of the interviewee in this condition was thus randomly selected and randomly assigned to one of five Target-emotion sub-samples. These sub-samples were composed of respectively 57, 51, 58, 62, and 59 interviewees. Each of the sub-samples data files was then merged with the Other-emotion, Trivial, and No Sharing data files. Analyses were performed for each of these five equivalent sized sub-samples data. They yielded five times equivalent results. Results are presented here only for the first randomised data file which was composed of 256 interviewees (172 women and 84 men), with respectively 57, 79, 65, and 55 interviewees in the Target-emotion condition, the Other-emotion condition, the Trivial condition and the No sharing condition. Interviewees' age ranged from 17 to 74 years ($M = 27.05$, $SD = 10.73$). As in the whole sample, a majority of them were students (58%). Thirty-two percent of the interviewees were employed people. The remain of the sample were unemployed people (3%), house keepers (6%), and retired people (1%). The vast majority of interviewees (90.5%) had education beyond the high school level. As in the whole sample, interviewees did not differ between conditions with regard to their age, $F(3, 252) < 1$, gender, $\chi^2(3, N = 256) = 1.53$, *ns*, nor type of emotion-eliciting situation, $\chi^2(6, N = 256) = 4.74$, *ns*.

2. Procedure

As in Experiment 1 and 3, students in the third and fifth year of their curriculum for the undergraduate degree in psychology who had chosen a class on emotion and expression were asked to collect data on emotional episodes. During a briefing session, the procedure was explained to them and they were prepared with regard to the interviewing instructions as well as ethical principles. The study *preceded* a phase during which they were taught about social sharing of emotion and the hypotheses of the study. Interviewees were thus blind to hypotheses. Each student-interviewer received an envelope with two sets of questionnaires, one for the pre-test measures and one for the post-test measures. In the envelope, they also received two sets of detailed instructions on how to conduct the interviews.

They were asked to find a person from their surroundings who would be ready to participate in a study on emotions. At the beginning of the first session, all interviewees had to recall a recent unrecovered emotional episode. As in Experiment 3, an unrecovered episode was defined as "an episode that when you think about it, you still feel sadness, or pain, or other similar painful emotions." When an episode corresponding to the instructions was found, interviewees answered the Emotional Impact of the Episode Questionnaire (see Measures section). Detailed instructions were provided to the interviewers and had to be followed in conducting each of the experimental conditions. In three conditions, an interview was

conducted. In a fourth condition, no interview was conducted, but the emotional impact of the episode as well as the perceived benefits of the session were assessed. The whole procedure is depicted in Figure 9.2.

For educational reasons (training and experience of interview), all interviewers had one interviewee talking about the emotional episode whose emotional impact had been assessed in the questionnaire (Target-emotion condition). Interviewees were told:

I would like that, for the following 30 minutes, you talk at length and in great detail about this unrecovered episode. I would like to know how it happened, what you have done, what you have felt, and all what this episode has meant for you.

For a second interviewee, the interviewer was randomly assigned to one of three conditions (he/she received one type of instructions and was blind to the two other conditions). In one condition, after having answered the emotional impact questionnaire about the recent unrecovered event, interviewees had to recall another recent emotional episode that had been highly intense. To help interviewees find a second emotional episode, they were given a list of typically intense emotional episodes (e.g., breaking of love relationship, loss of a close person, professional or academic failure, death of a pet, having been robbed). When a second event was found, interviewers asked some questions on the date of occurrence, the type of episode, the emotional intensity elicited by this second emotional episode, the current need to talk about it, and how the person had recovered from it. The interviewee was then given the same interviewing instructions as in the Target-emotion condition, but was interviewed on this second emotional episode (Other-emotion condition).

In a third condition, interviewees were interviewed on trivial topics (Trivial condition). They were told:

I would like that, for the following 30 minutes, you talk successively about several themes. I would like that you talk about each of them at length and with as many detail as possible. The themes are the last film that you saw in the movie theatre, one typical weekend of yours, one typical work or university day, one hobby, and your town or region.

In a fourth condition, no interview was conducted (No sharing condition). After completion of the questionnaire, interviewees were immediately thanked and an appointment was made for the follow-up session conducted 3 days later. Interviewers were asked to randomly start interviewing according to either the Target-emotion condition, or the other condition they received.

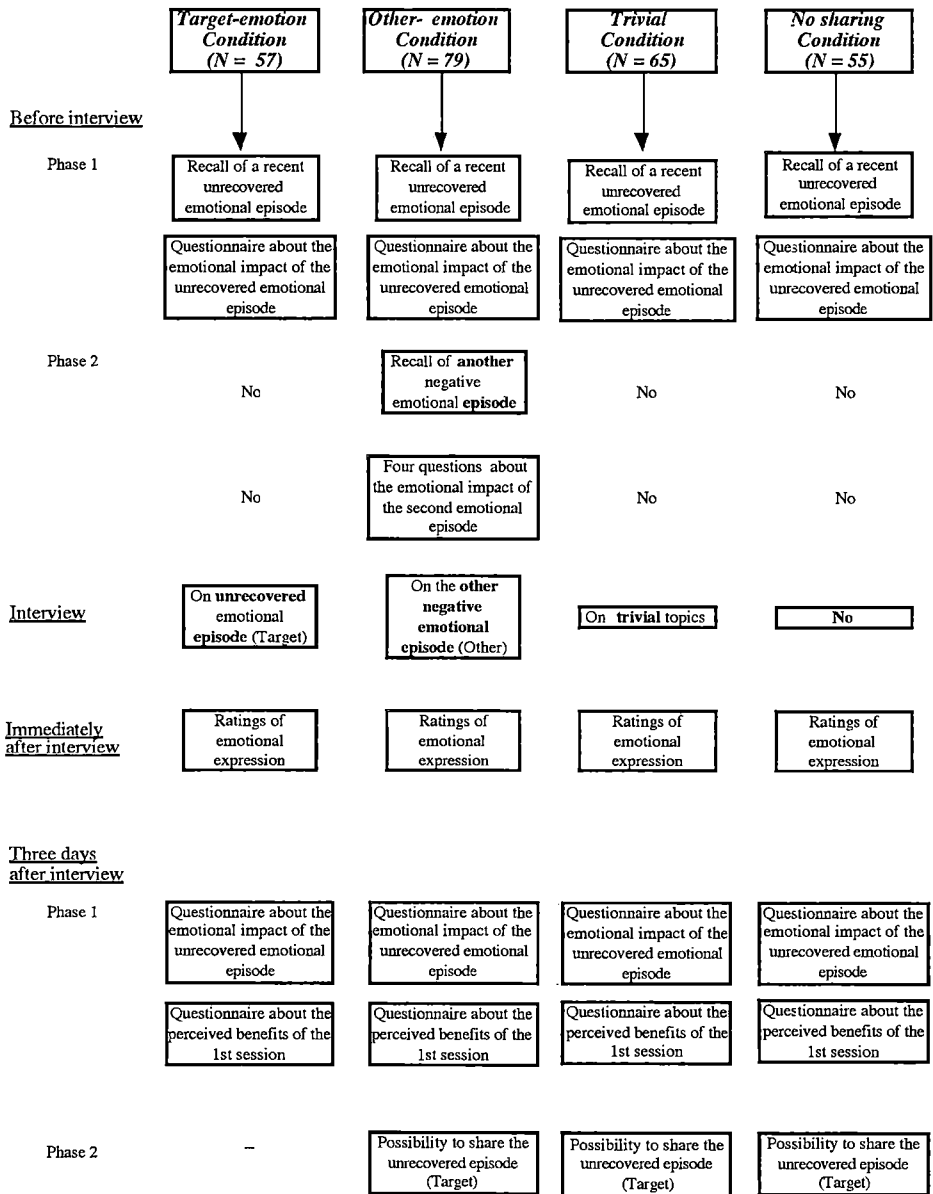


Figure 9.2 Procedure of Experiment 4

At the end of the first session, interviewers noted the time when the interview had started and ended. This was used as a check for length of interview. The interviewee was then thanked for participation and an appointment was made for the second session. When the interviewee had left the interviewer, interviewers rated in how far the interviewee and themselves had overtly expressed feelings during the first session.

At the beginning of the second session conducted 3 days later, ratings of emotional impact and perceived benefits of the first session were collected. All interviewees who had not the possibility to socially share their emotions about the target episode were then given the opportunity to do so if they wanted to. They were then thanked for participation and debriefed.

3. Measures

Interviewee's questionnaire.

Before interview, interviewees noted the date of occurrence of the unrecovered emotional event. In few words (in a 3 cm x 15 cm rectangle), they were asked to describe the negative emotional episode they had chosen. This description was asked both before interview and at follow-up to check that the right emotional episode was assessed.

Emotional Impact of the Episode Questionnaire. The emotional impact of the episode questionnaire included the same questions as in Experiment 3 on the same Likert scales: (1) the emotional intensity scale (assessed at the occurrence of the episode, before interview, and at follow-up, scale from *no upset* (0) / *strongest upset ever experienced in my life* (10)), (2) the initial negative emotions (6 basic emotions felt at the occurrence of the episode, scales from *not at all* (0) / *a great deal* (6)), (3) the search for meaning (8 cognitive needs felt before interview and at follow-up, scales from *not at all* (0) / *very much* (6)), (4) the remaining emotional impact of the episode (recovery, painfulness, involvement assessed before interview and at follow-up, scales from *not at all* (0) / *a great deal* (6)), (5) the social sharing (initial frequency of social sharing and its delay, and current frequency--scale from *never* (0) / *6 times or more* (6)--and need to socially share--scale from *not at all* (0) / *a very strong need* (6)--assessed on the last 3 days before interview and at follow-up), and (6) the mental rumination (frequency, disruptiveness, and uncontrollability assessed before interview and at follow-up, scales from *never or not at all* (0) / *6 times or more or very much* (6)).

Participant's beliefs about the effects of communication of emotions. Before interview, interviewees assessed their personal beliefs about the effects of communication of emotions. As in Experiment 3, they were asked to rate on 7-point scales (*not at all* (0) to *a great deal* (6)), whether they believe that talking about an emotional event is helpful, and whether they believe that talking about one of their emotional experiences to someone they trust is relieving for them.

Perceived benefits of the session. Three days after the first session, interviewees evaluated whether they felt that the session had helped them. They rated on 7-point scales (*not at all* (0) / *a great deal* (6)) the extent to which (1) the session was meaningful, (2) the session

was useful, and (3) they felt satisfied during the session. Because these items showed internal consistency (Cronbach's $\alpha = .76$), ratings were averaged to obtain a perceived general benefits score. On the same scales, they also rated the extent to which the session had relieved their feelings: (1) the session made them feel good, (2) the session relieved your emotions, (3) the session allowed them to feel better, and (4) they felt at ease. Because these items showed internal consistency (Cronbach's $\alpha = .75$), ratings were averaged to obtain a perceived relief score. On the same scales, they rated the extent to which the session helped them (1) in understanding themselves better, (2) in seeing clearer inside of themselves, and (3) in putting order in themselves. Because these items showed internal consistency (Cronbach's $\alpha = .94$), ratings were averaged to obtain a perceived cognitive benefits score. They finally rated the subjective impact of the session with regard to the interpersonal relationship with the interviewer. They rated whether (1) they felt understood, (2) they found comforting words or behaviours, and (3) the session helped them in getting the opinion of the other. Because these items showed internal consistency (Cronbach's $\alpha = .70$), ratings were averaged to obtain a perceived interpersonal benefits score.

Manipulation check questions. As in Experiment 3, the interviewees rated whether they: (1) had talked in details about emotional aspects, (2) had shown strong emotions, and (3) felt detached or non implicated. These questions were answered at the follow-up session after three days rather than immediately at the end of the first session because there was one condition in which interviewees only answered questionnaires.

Interviewers' questionnaire.

In the Other-emotion condition, when the interviewee had found a second emotional episode (i.e., the "Shared" episode), interviewers asked the five following questions to have some information about its occurrence and emotional intensity: (1) when did this episode happen? (2) in few words, describe this episode; (3) nowadays, do you still feel the need to talk about this episode? (*not at all* (0) / *a very strong need* (6)); (4) when thinking about this episode now, to what extent do you feel upset? (*not at all* (0) / *the most upset of my entire life* (10)); and (5) today, how far have you recovered from this episode? (*not at all* (0) / *a great deal* (6)).

As in the previous study, interviewers noted both the time when the interview began and the time when it ended. This served to check if the interview had lasted about 30 min. in the three interview conditions. It also allowed checking that no communication (less than 10 min.) was done in the No sharing condition. Immediately after the first session, interviewers briefly described what the interviewee had talked about (question that was asked to verify that interviewees talked about another emotional episode in the Other-emotion condition). As in Experiment 3, interviewers then rated the extent to which the interviewee (1) had talked in a very detailed manner about emotional aspects (feelings, emotions, etc.), (2) was moved by the sharing of the episode, and (3) was distant, detached about what he/she had talked about during the first session. In addition to what was assessed in Experiment 3, interviewers also rated the

extent to which the interviewee seemed (1) tense, (2) upset, and (3) detached or indifferent at the end of the first session. Finally, they also rated the extent to which the interviewee seemed relieved at the end of the first session.

3. Results

1. Conformity to instructions and manipulation checks

Length and topic of interview.

Checks were conducted to verify whether instructions had been followed. First, interviewees in the No sharing condition were eliminated when the interview had lasted more than 10 minutes. This was the case for 42 interviews (42% of the sample in this condition). Second, the length of interview was missing for 9 of the interviewees. They were thus eliminated from the sample. It should be noted that in the three conditions of interview all participants had talked more than 10 minutes. Third, interviewees were asked to recall a recent emotional episode. As in Experiment 3, for homogeneity purposes, emotional episodes that had happened more than 3 years before the beginning of the study were thus eliminated. This was the case for 76 interviewees (12.5%) and date of occurrence of the episode was missing for 6 additional interviewees. Four, the data of interviewees was eliminated when no information was reported on what had happened during the interview ($n = 12$) and when interviewees in the Other-emotion, Trivial, or No-sharing condition had talked about the target episode of the questionnaire ($n = 88$). In total, 172 interviewees (26.1% of the total sample) were eliminated.

Excluded respondents significantly differed from retained interviewees with regard to the condition they were assigned to, $\chi^2(3, N = 658) = 68.98, p < .0001$. Thirteen percent of the interviewees in the Target-emotion condition were excluded from the data, 32% in the Other-emotion condition, 40% in the Trivial, and 48% in the No sharing condition have been excluded. In fact, these checks can be summarised by essentially two exclusion criteria. The first criteria which led to the exclusion of 12.5% of the total sample is the "non-recency" of the events. The proportion of participants who were excluded according to this criteria did not differ between conditions, $\chi^2(3, N = 658) < 1$ (between 11 to 14% in every condition). However, the second main criteria which led to the exclusion of additional 13.4% of the total sample is whether participants in the three control conditions talked about their unrecovered event or not. The proportion of participants who were excluded according to this criteria tended to differ between conditions: 20.2% ($n = 23$) were excluded in the Other-emotion condition, 30.8% ($n = 32$) in the Trivial condition, and 33.3% ($n = 33$) in the No sharing condition, $\chi^2(2, N = 317) = 5.43, p < .07$. In these conditions, it seemed thus difficult to restrain interviewees to talk about their unrecovered emotional episode. In a sense, this seems logical in that asking relatives to recall and rate the emotional intensity of an unrecovered emotional episode may per

se reactivate the need to share it. This may have made the situation quite artificial as interviewees could expect to talk about it. In the Other-emotion condition, the investigation of a second emotional event may have prevented participants to talk about the first one. This may have been more difficult in the Trivial condition and very difficult in the No sharing condition. To keep conditions as pure as possible, this is why interviewees who indeed communicated about their emotional event with the interviewers were eliminated from the sample. It should be noted that retained interviewees did not differ from excluded interviewees with regard to their gender, $\chi^2(1, N = 658) < 1$, age, $t(656) = -1.61$, *ns*, nor type of antecedent eliciting emotion, $\chi^2(3, N = 658) = 2.26$, *ns*.

After these checks, the length of interview varied on average between 30 and 33 minutes in the three interview conditions and it lasted significantly longer as compared to the interview in the No sharing condition which had lasted on average less than one minute (see Table 9.1).

Manipulation checks on degree of emotional expression during interview.

The next step in controlling whether instructions given to the interviewers were respected involved the check of both interviewees' and interviewers' ratings of the extent to which interviewees had communicated emotions, had shown emotions, had been distant or indifferent. It was expected that interviewees in the Target-emotion and in the Other-emotion conditions would have talked and shown more emotions as compared to interviewees in the Trivial and in the No sharing condition. Between-groups differences were assessed using one-way analyses of variance (ANOVAs). As can be seen in Table 9.1, eight of the nine ANOVAs yielded significant results. As expected, Bonferroni post-hoc tests on both interviewees' and interviewers' ratings indicated that interviewees who have communicated an emotional episode (i.e., in the Target-emotion and in the Other-emotion conditions) have talked more about emotional matters and showed more their emotions than interviewees in the Trivial condition and in the No sharing condition. As expected, participants in the No sharing condition even talked less about emotional topics than interviewees in the Trivial condition. Interviewees who have communicated an emotional episode also reported feeling less distant and more tense than interviewees in the Trivial condition. Finally, the former were reported as being more upset than interviewees in the two other groups. Noteworthy, talking about the unrecovered emotional event assessed in the questionnaires was not differentiated on any of these indices of emotional expression in comparison to the communication of a second emotional event.

Altogether, these results indicated that the conditions were clearly differentiated with regard to what happened during the interview. Interviewees in the Target-emotion and in the Other-emotion condition have talked about emotional topics. Interviewees in the Trivial condition have had a long-lasting personal but non emotional contact with the interviewer and participants in the No sharing condition indeed did not have a personal long-lasting contact with the interviewer.

Table 9.1 Comparison of Group Means (SDs in parentheses) for the Manipulation Checks Ratings

Measures	Target- Emotion (n = 57)	Other- Emotion (n = 79)	Trivial (n = 65)	No Sharing (n = 55)	F(3, 254)
Interview length (in minutes)	30.59 a (10.54)	30.00 a (7.84)	33.40 a (9.94)	0.82 b (2.68)	191.54 ****
<i>Interviewees' rating</i>					
I talked about emotion	4.12 a (1.73)	3.84 a (1.94)	2.05 b (1.73)	0.96 c (1.55)	42.44 ****
I overtly expressed emotion	2.63 a (1.94)	2.52 a (1.99)	1.46 b (1.69)	0.83 b (1.49)	13.59 ****
I was distant	1.14 a (1.71)	1.48 a (1.57)	2.33 b (1.83)	2.12 ab (2.09)	4.07 **
<i>Interviewers' rating</i>					
Interviewee talked about emotion	4.07 a (1.46)	3.78 a (1.47)	2.13 b (1.62)	0.69 c (1.29)	63.42 ****
Interviewee expressed emotion	3.32 a (1.84)	2.99 a (1.55)	1.82 b (1.60)	1.28 b (1.55)	20.77 ****
Interviewee was distant	1.12 a (1.36)	1.66 ab (1.65)	1.78 ab (1.76)	2.07 b (2.36)	2.64 *
Interviewee was tense	1.72 a (1.69)	1.66 a (1.71)	0.75 b (1.29)	1.52 a (1.45)	5.39 ***
Interviewee was upset	2.67 a (1.73)	2.29 a (1.78)	0.88 b (1.22)	1.52 b (1.67)	12.43 ****
Interviewee was indifferent	1.33 (1.55)	1.66 (1.69)	1.60 (1.66)	2.09 (2.00)	1.84

Note. Higher scores represent greater communication of emotion, greater expression of emotion, greater distance, etc. Means with different subscripts are significantly different at $p < .05$, using Bonferroni post-hoc test.

* $p \leq .05$. ** $p < .01$. *** $p < .005$. **** $p < .0001$.

Differences in assessed and verbalised episodes in the Other-emotion condition.

The next check involved a verification specific to the Other-emotion condition. In this condition, interviewees had to recall two episodes, one for which they answered the questionnaire (the Rated episodes) and the other about which they talked during the interview (the Shared episodes). Although interviewers helped interviewees to recall a second emotional episode of high intensity, it should be noted that no specific instructions had been given on whether the Shared episode needed to be recovered or not. It seemed indeed difficult to ask interviewees to find two unrecovered episodes of high intensity. Moreover, the aim of the present study was to investigate whether talking about specific unrecovered episodes would bring emotional recovery in comparison to the communication of any other emotional episode for which emotional recovery would not be assessed. The point was also to indicate whether

people would perceive benefits when they share any emotional topic. It did thus not seem important to investigate specifically two unrecovered episodes.

As can be seen in Table 9.2, the Rated episodes and the Shared episodes were similar with regard to date of occurrence, need to socially share them, and emotional intensity felt before the interview. However, Rated episodes were rated as being less recovered as compared to Shared episodes. The type of antecedent emotion that characterised the episodes were approximately in the same proportion for the Rated episodes and the Shared episodes. Thus, with the exception of the degree of recovery, interviewees in the Other-emotion condition were able to recall two episodes of equivalent intensity and with similar characteristics.

Table 9.2 Means (SDs in parentheses) of the episodes in the Other-emotion Condition ($N = 79$)

Measures	Rated episode	Shared episode	Within effect
Date of occurrence (in months)	7.96 (9.38)	11.04 (19.65)	-1.18
Need to share ^a	2.46 (1.33)	2.21 (1.71)	< 1
Emotional intensity before interview ^a	4.66 (2.26)	4.55 (2.79)	< 1
Recovery ^a	2.88 (1.65)	3.75 (1.70)	-3.15 ***
Type of antecedent emotion			
Sadness	57%	67%	
Anger	14%	7%	
Fear	29%	23%	
Joy	--	3%	

Note. ^a Higher scores represent stronger need to share, greater intensity of emotion, and greater recovery.

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .0001$.

Equivalence on the dependent variables before interview.

The last check was to verify that interviewees were equivalent between conditions with regard to the dependent variables before the interview. The three facets of emotional impact of the episode were simultaneously subjected to a 4 X 3 (Condition X Facet) between-within multivariate analysis of variance (MANOVA). As expected, across all three facets of emotional impact, no significant Condition effect, $F(3, 252) = 1.06$, ns , was obtained. The three facets of mental rumination and social sharing of the episode were also simultaneously subjected to a 4 X 3 (Condition X Facet) between-within multivariate analysis of variance (MANOVA). As expected, across all three facets, no significant Condition effect, $F(3, 252) < 1$, was found.

Thus, as expected, dependent variables before interview did not differ between conditions. These results indicated that interviewees in each of the four conditions had recalled

similar emotional episodes with regard to emotional impact and degree of recovery at the beginning of the study. This allowed valid post-interview comparisons.

2. Description of the collected emotional materials

Similarly to what was done in Experiment 3, Scherer et al.'s (1986) categorisation was used to code the type of experienced episode. Two judges independently coded every episode. Respectively for the antecedent emotions and situations, percentage agreement between the judges was 90.5% and 84.7% and kappa's were .81 and .86. Of the 256 recent negative emotional episodes, 63% dealt with an antecedent emotion of sadness, 26% with anger, and 11% with fear situations. Thirty-three percent of the antecedent situations involved relational problems with close persons or groups, 27% of the antecedent situations dealt with death or permanent separation from a close person, 9% centred on the failure to achieve what was hoped for in an achievement-related situation (e.g., failure to pass an examination). Other topics included receiving bad news (e.g., not selected for a job) (7%), physical pain or sickness (6%), physical aggression by others or to others (3%), anger about inappropriate rewards for self (feeling unjustly treated) (3%), or temporary separation (2%). The remaining episodes (7% of the episodes) were scattered across the remaining categories of antecedent situations such as free-floating feeling, solitude, temporary separation from a close person, loss or damage of objects, rituals or anniversaries, conscious risk-taking, fear of adverse effects from external forces (e.g., thunderstorms), unexpected time loss, end of pleasurable experience (e.g., end of holiday). Finally, 3% of episodes ($n = 7$) were uncodable according to the classification (e.g., "confinement of my grand-father because he endangered my life"; "strange (nervous) crisis of a friend"; "my grand-mother who cries").

The episodes had happened on average 8 months before the beginning of the study ($SD = 10.10$ months; *Minimum* = 0; *Maximum* = 36 months ago). Conditions did not significantly differ with regard to the period of time elapsed since the episode's occurrence, $F(3, 252) = 1.66$, *ns*. The emotional intensity felt at the episode's occurrence was on average 7.11 ($SD = 1.89$) on the scale from 0 = *no upset* to 10 = *strongest upset ever experienced in my life*. The emotional intensity still felt before the interview was on average 4.71 ($SD = 2.25$). Neither initial, nor current emotional intensity of the episodes significantly differed between conditions, both F 's < 1.

3. Did communication help to recover from the emotion of unrecovered episodes?

The present study was designed to check whether interviewees who would talk about an unrecovered emotional episode would recover more than interviewees who would talk about any other emotional topic, or about personal but non emotional topics, and of course, more than participants who would not talk at all.

Emotional impact of the episode.

The three facets of Emotional Impact of the Episode Questionnaire were simultaneously subjected to a 3 X 2 X 3 (Condition X Time X Facet) between-within repeated measures multivariate analysis of variance (MANOVA). Across all three facets of emotional impact, a highly significant effect for Time, $F(1, 251) = 29.74, p < .0001$, was obtained. The MANOVA also yielded a significant Facet main effect, $F(3, 502) = 239.32, p < .0001$. No other main effect or interactions were significant ($F_s \leq 1$). Thus, contrary to expectations, the intervention did not result in beneficial emotional recovery effects. Separate repeated measures ANOVAs on each of the emotional impact facets indicated that highly significant main effects for Time were found on each of these. Examination of the means in Table 9.3 indicated that the emotional intensity, the search for meaning, and the remaining emotional impact had decreased from before to three days after the interview.

Table 9.3 Comparison of Condition Means before the Interview and at the Follow-up

Measures	Conditions				Effect		
	Target- Emotion (<i>n</i> = 57)	Other- Emotion (<i>n</i> = 79)	Trivial (<i>n</i> = 65)	No Sharing (<i>n</i> = 55)	Condition	Time	<i>C</i> x <i>T</i>
Emotional intensity					< 1	7.50 **	< 1
Before the interview	4.75	4.75	4.40	5.00			
Three days after the interview	4.21	4.35	4.25	4.73			
Search for meaning					< 1	20.92 ****	< 1
Before the interview	2.58	2.47	2.52	2.86			
Three days after the interview	2.36	2.23	2.38	2.59			
Remaining emotional impact					1.65	38.46 ****	1.00
Before the interview	3.17	3.52	3.14	3.50			
Three days after the interview	2.70	3.21	2.89	2.98			
Mental rumination					1.36	12.08 ***	< 1
Before the interview	2.25	2.40	2.26	2.78			
Three days after the interview	2.08	2.18	2.09	2.44			
Need to share					< 1	10.86 ***	< 1
Before the interview	2.39	2.53	2.42	2.38			
Three days after the interview	2.11	2.13	2.02	2.35			
Quantity of social sharing					< 1	2.80 †	1.15
Before the interview	0.72	1.18	1.03	0.82			
Three days after the interview	1.16	1.20	1.05	0.95			

Note. Higher scores represent greater intensity of emotion, stronger need to search the meaning, etc.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .0001$.

Mental rumination and social sharing.

The three facets of the mental rumination and social sharing questionnaire were simultaneously subjected to a 3 X 2 X 3 (Condition X Time X Facet). Across all three facets, a significant Time effect, $F(1, 252) = 4.43, p = .036$, was obtained. Contrary to expectations, no significant Condition X Time interaction was found, $F(2, 252) < 1$. With the exception of the Facet main significant effect, $F(2, 504) = 142.23, p < .0001$, no other main effect or interactions were significant ($F_s \leq 1$). Separate repeated measures ANOVAs on each of the mental rumination and social sharing facets confirmed the above significant effect for Time and non-significant Condition X Time interaction (see Table 9.3). These analyses indicated that mental ruminations and need of social sharing had decreased from before to three days after the interview, and that quantity of social sharing tended to increase from before to three days after the interview. Contrary to expectations, interviewing conditions did not differ in their capacity to change the cognitive and social aftermaths of recent negative unrecovered episodes.

These results were very surprising and were contrary to common sense, to common psychologist view, and to theoretical hypotheses. They indicated that spontaneous remission (or regression to the mean) had occurred and that sharing or not sharing did not make any difference in outcome. Communication induced in the laboratory did not induce differences in sharing behaviour or need to share the event, nor did it change people's mental rumination about it. This would suggest that people should not be asked to share their emotions anymore as it does not change their degree of recovery from the event. But is it really so? Are there other indices that suggest the contrary? Next, perceived benefits of the communication of emotion will be examined.

4. Did people feel that communication helped them?

The present study was also designed to check whether interviewees who would talk about an emotional episode would perceive more subjective benefits than interviewees who would talk about personal but non emotional topics, and of course, more than participants who would not talk at all. Because perceived benefits were investigated up till now with general questions, it was not known whether they were related to perceived *relief* from their emotions, to perceived *cognitive benefits* such as clarification and better understanding, or to perceived *interpersonal* benefits (e.g., the other was supportive, empathetic, or understanding). These specific subjective benefits were thus investigated in more details here. Three days after the interview, interviewees rated in how far they found *the first session* had been beneficial to them in general (e.g., it was useful), whether it had relieved their emotions (e.g., made them feel good), whether it had helped them cognitively (e.g., it helped in putting order in themselves), and whether it had been interpersonally beneficial (e.g., they found comforting behaviours).

In a first step, general perceived benefits were correlated with the more specific perceived benefits. Results indicated that the former were highly positively associated with each

of the other perceived benefits (correlation with perceived relief, $r(256) = .75$, $p < .0001$; with cognitive benefits, $r(256) = .72$, $p < .0001$; and with interpersonal benefits, $r(256) = .65$, $p < .0001$). This indicated that these different perceived benefits indeed shared an important variance in common (42 up to 56%), suggesting that, although not identical, these perceived benefits are indexing a similar concept.

In a second step, it was expected that interviewees in both Target-emotion and Other-emotion conditions would perceive more benefits from the first session than other interviewees because they had communicated their emotions. Interviewees in the Trivial condition could also be expected to perceive more interpersonal benefits from the first session as compared to participants in the No sharing condition because they had a personal contact with the interviewer. Between-condition differences were tested using one-way analyses of variance (ANOVAs) on the four averaged scores of perceived benefits.

As expected, each of the four ANOVAs yielded highly significant results (for perceived general benefits, $F(3, 255) = 6.04$, $p < .001$; for perceived relief, $F(3, 255) = 6.47$, $p < .0005$; for perceived cognitive benefits, $F(3, 255) = 4.40$, $p < .005$; and for perceived interpersonal benefits, $F(3, 255) = 24.24$, $p < .0001$). Bonferroni post-hoc tests revealed that perceived benefits were never significantly different in the Target-emotion and the Other-emotion conditions (see Figure 9.3). However, talking about emotional episodes induced more general benefits than talking about personal but non emotional topics as well as more than no communication at all (these two latter conditions not differentiating one from the other). Also expected was the finding that talking about emotional episodes induced more perceived relief than the communication of trivial topics or no communication at all. Both conditions of communication of emotions also significantly differed from the Trivial condition with regard to perceived cognitive benefits. Intriguingly, interviewees in the former conditions did not perceived more cognitive benefits than participants in the No sharing condition. This would suggest that answering the questionnaire had elicited cognitive benefits, or that participants who just answered the questionnaire reported perceived benefits to compensate a lack of meaning. It is also possible that in contrast to other participants, interviewees in the Trivial condition were in fact less inclined than participants in the other three conditions to report perceived cognitive benefits as they only communicated personal but quite trivial matters (e.g., one typical weekend, last film seen, one typical day of work). Finally, post-hoc tests on the interpersonal benefits indicated that, as expected, interviewees in both Target-emotion and Other-emotion conditions had perceived the first session as being more interpersonally beneficial as compared to interviewees in the Trivial condition, who themselves had perceived more interpersonal benefits as compared to participants in the No sharing condition.

Overall, these results were consistent with the hypotheses. It seems that the only fact of sharing an emotional topic induces perceived benefits of communication. When people share emotional topics, they perceive beneficial effects such as relief, better understanding and clarification, as well as interpersonal benefits such as being understood or receiving comforting

words or behaviours. Having a personal contact with an experimenter also induced the perception of more interpersonal benefits than no sharing at all. All these results are consistent with common sense and representations about the effects of communication of emotions which suggest that "talking about emotions is good," that "it is relieving," and that "it helps." They are, however, inconsistent with the results on emotional recovery which showed that it is not.

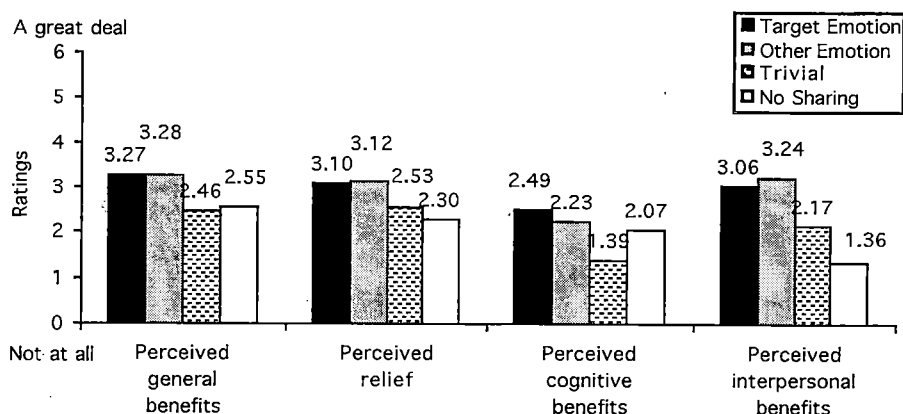


Figure 9.3 Comparison of Interviewees' Ratings of the Perceived Benefits of the First Session assessed at the Follow-up Conducted Three Days after

5. Are perceived benefits associated with interviewee's beliefs or with real recovery effects?

As in Experiment 2 and 3, the question was raised as to whether people reported beneficial effects because they *believed it should be beneficial* or because perceived benefits were related to the *observed evolution of the emotional impact*. To test these hypotheses, in the two conditions where participants had talked about an emotional event (in the Target-Emotion and in the Other-Emotion conditions), the correlations between the average scores of perceived benefits on the one hand and their beliefs about the beneficial effects of communication on the other hand were examined. In addition, for each variable that was found to have significantly evolved from before to three days after the interview (i.e., emotional intensity, search for meaning, remaining emotional impact, need to share, and mental rumination) a recovery score was calculated. The four average scores of perceived benefits were correlated with each of these indices of emotional recovery.

Consistent with the results of Experiments 2 and 3, results of these correlations revealed that each of the perceived benefits was modestly but significantly associated with the beliefs in the beneficial effects of communication (see Table 9.5). Contrarily, as regarded correlations with indices of emotional recovery, only one correlation out of 24 was significant. This indicated that emotional recovery was not associated with the perceived benefits of the

communication of emotional experiences. Thus, consistent with the results of Experiment 2 and 3, perceived beneficial effects of the communication of emotional events were associated with the *belief* that communication of emotion should be beneficial, but not with the *observed benefits* in recovery from the emotion.

Table 9.5 *Correlations Between (1) the Perceived Benefits of the First Session and (2) the Beliefs about Beneficial Effects of Communication of Emotion and the Indexes of Emotional Recovery in the Target- and Other-Emotion Conditions (N = 136)*

Measures	Perceived Benefits			
	General Benefits	Relief	Cognitive Benefits	Interpersonal Benefits
Beliefs in the effects of communication				
General belief of helpfulness	.28***	.29***	.18*	.23**
Belief about relief	.21**	.25**	.21**	.16†
Emotional recovery indexes				
Emotional intensity	-.06	-.02	-.08	-.09
Search for meaning	.05	.10	.17*	.11
Remaining emotional impact	.02	.08	-.01	.15†
Mental rumination	.11	.05	.12	.05
Need to share	.00	.02	.06	-.05

† $p < .10$. * $p < .05$. ** $p \leq .01$. *** $p < .001$.

Consistent with the idea that perceived benefits are in fact based on an illusion, these results suggested that because people believe in the beneficial effects of communication of emotion, when asked to share their emotions, they report that it was beneficial. There are, however, also other explanations that will be discussed in more details below.

4. Discussion

Contrary to the view that communication of emotion would bring emotional relief, the present experiment failed to show that it alleviates the emotional impact of unrecovered emotional episodes. Consistently across the four experimental studies presented in this dissertation, when measured with pre- and post-test measures of well-being, health, or emotional impact, communication of emotion was found unable to differentially induce adjustment to emotional episodes. However, it induced perceived benefits similar to the ones that were expected more "objectively": people report more general benefits, more relief, more cognitive benefits, and more interpersonal benefits from having communicated an emotional episode.

In fact, the present studies suggest that one should pay careful attention to the type of dependent variable that is assessed and operationalised when one examines the question of whether communicating one's emotions is beneficial. It is important to note that types of dependent variables are differently influenced by the manipulation. Whereas middle or long-term emotional recovery, general feeling of well-being (i.e., moods, self-esteem, loneliness state, life satisfaction), and subjective physical health were not influenced by the communication of emotions, subjective benefits which are specific to the communication of emotional episodes were created. In other words, after the experiment, participants do not "objectively" feel better about the event or in general, but they report "subjectively feeling better" *because of the communication of emotions*.

The question arises whether these subjective benefits are only illusory effects. The main reason precluding one from concluding that "perceived benefits would only be illusions" is that results on which this hypothesis was based relied on correlations between beliefs about the beneficial effects of communication of emotion and perceived benefits. Thus, such results do not allow one to draw inferential results. In addition, the size of these correlations ranged between .16 and .44. This means that, although significant, these correlations were modest in size and that beliefs and perceived benefits from the communication of emotion only shared 4% to 19.4% of variance. The common variance remaining could thus be explained by real benefits. It is possible that participants indeed perceived real benefits from the communication but that these were in fact not investigated in the present research. If this is the case, people's beliefs would rather be increased by the objective effects of communication and not the reverse. For example, the present research has mainly focused on intrapersonal effects of communication of emotion such as emotional recovery, well-being, and physical health. However, in natural settings, the communication of emotion often implies interpersonal processes, as one talks about something *to someone*. It is thus possible that the communication of emotion involves important social functions rather than intrapersonal ones. To illustrate, talking about one's emotions may enhance interpersonal relationships and social integration (Rimé et al., 1998). Also, the communication of emotions may serve societal and evolutionary functions in that it may help the spreading of emotional knowledge through the social network (Rimé et al., 1998). Suggestions for future research on these ideas will be presented in the General conclusions of this dissertation.

General discussion and conclusions

1. A summary of the results

The aims of this dissertation were twofold. First, I wanted to know whether lay people believe that communicating one's emotions is helpful, to what extent, and what are the rationales they advance. Second, the question was raised as to whether communication of emotional or traumatic events *really* helps?

What have we learned?

(1) People who experience an emotion feel compelled to talk about it and to share it, preferably with their intimates (Chapter 1). They do it quite willingly, despite of the fact that the sharing process reactivates the negative aspects of the emotional experience.

(2) A very widespread belief exists according to which sharing an emotion is helpful for people's well-being and health and that it should bring emotional relief (Chapter 2). Lay people believe less in the beneficial interpersonal effects of communication of emotion. They do not endorse the view that communicating emotions has detrimental effects.

(3) Scientific views on the effects of the communication of emotion largely rely on Pennebaker's inhibition theory (1989, 1993b) which postulated that disclosure of emotions leads to better physical health and well-being (Chapter 3). Authors generally assume that communication of emotional episodes is beneficial to cope with emotions. Previous literature reviews on the effects of communication of emotion generally concluded that it leads to overall beneficial effects.

(4) The examination of empirical literature reviewed in the present dissertation led to a more complex conclusion: the effects of the communication of emotion depend on the type of variable assessed and on time of measurement (Chapter 4). It is both detrimental and beneficial in the short term. Whereas it induces physical reactivation and negative moods, it also leads to perceived benefits such as meaningfulness and subjective perception of positive impact. In the long-term, communication of emotion fails in a majority of the cases to yield either negative, or positive effects. Specific beneficial effects of the communication of emotion were, however, found on indices of better physical health (i.e., fewer visits to physicians, better functioning of particular immune indices, fewer physical symptoms) and behavioural performances (i.e., full time reemployment among unemployed people, better school performances). The belief and common assumption that communication of emotion leads to better emotional recovery had remained untested. The purpose of the empirical work that I conducted was to answer whether such belief is valid.

(5) The studies conducted to test the validity of this belief failed to uphold this world view (Chapters 7 and 9). It does not seem that talking about an emotional memory has a significant impact on the emotional impact associated with this memory. The specific focus of communication on emotions and feelings or on meanings and consequences of the emotional event does not mediate the effects of communication on emotional recovery (Chapters 6 and 7). Whether the event was unrecovered at the time of communication did not mediate the effects of communication (Chapter 9). Whereas sharing did not have a clear direct impact on recovery, data were supportive of the inverse relation. Lack of recovery was markedly associated with the perpetuation of sharing and of the need to share (Chapter 8). The abundance of the null findings finally led me to accept that despite stereotypes, communication of an emotion does not bring emotional relief as such.

(6) Nevertheless, people who share their emotions generally express the feeling that the process is beneficial. People feel and believe that it is beneficial for various purposes, namely emotional relief, better well-being (e.g., feeling better), cognitive benefits (e.g., it gives more insight, puts things into more order), and interpersonal benefits (e.g., feeling more comforted by others) (Chapters 7, 8, and 9).

In sum, consistent with the review of the literature, the empirical part of this dissertation suggests that one should pay careful attention to the type of dependent variable that is assessed and operationalised when one examines the question of whether communicating one's emotions helps. It is important to note that types of dependent variables were differently influenced by the manipulation. Whereas the communication of emotions did not influence middle or long-term emotional recovery, general feeling of well-being (i.e., moods, self-esteem, loneliness state, life satisfaction), and subjective physical health, it influenced subjective benefits which are specific to the communication of emotional matters. In other words, after the experiment, participants did not objectively feel better about the event or in general, but they reported subjectively feeling better *as a consequence of the induction of communication of emotions*.

2. Illustration of the conclusions

The following two examples illustrate the conclusions of this dissertation and the complex effects that result from the communication of emotional or traumatic experiences.

Example 1

Primo Levi was 24 years old when he was arrested by the Fascist militia and, one month later, interned in the Extermination Camp of Auschwitz at the end of January 1944. In January 1947, he explained in the preface of his book about his stay in Auschwitz why he had written "If This Is a Man":

The need to tell to "others", to imply "others", had gained, before as well as after our liberation [deportees], the violence of an immediate impulse, as pressing as any other elementary need; it is to answer such a need that I have written my book; it is above all to reach an inner liberation. (Primo Levi, 1958/1990, p. 8).

In November 1976, he wrote an appendix to the book for the scholar edition. One can read: *"When it happens to me today to think about the Lager, I do not feel any violent or painful emotion. On the contrary: on top of my short and dramatic experience of deportee has been added the one of writer-witness, much longer and more complex. The result is clearly positive; in sum, this past has grown inside and strengthened me"*. (Primo Levi, 1976/1990, p. 213).

It should be noted that, although Primo Levi wrote his whole life long about his traumatic experience, he committed suicide in April 1987.

Example 2

In 1955, Anny Duperey was 8 years old. Her parents died from asphyxia in their bathroom. In 1992, this French actress writes and publishes *"Le Voile noir"* [the black veil], a book in which she explained that she has lost all memories about her parents and childhood (but the one of the accident). In the book, she commented on her father's professional and family pictures and then explained in great detail what happened on the fatal day, hoping that writing the book would help her to deal with her traumatic memory and to brake the blackout about her childhood memories.

At the end of the book, one can read: *"I cannot finish this book. I would like to never finish it. Because I was unable to express most of the regrets that lie heavy upon me, I wanted to share though everything remains on my heart, and I am relieved of nothing ... and nothing from my childhood, nor from them [my parents] has come back to memory."* (p. 193). She ended the book with a summary about where she stood in the process of "working through grief": *"And when seeing where I am, the work to do in order to finally have the possibility to talk about them without crying, twenty years seem to me a very short duration..."* (p. 235). At the end of the book, thus, the conclusion is clearly negative: writing the book did not allow her to remember any detail of her childhood, nor to have worked through grief.

In 1993, she published *"Je vous écris..."* [I write to you...] in reaction to the numerous letters of comfort, encouragement, advice, and even information about what may have really happened on the fatal day. In this book, several of these letters were published and she explained what she had gone through during this last one and a half year. Here are some of her comments: *"I was almost drowning into my emotions when the book was about to be edited and that I had to face a new exercise: to talk about it to the media. This was very beneficial to me and if I made so many interviews, this was not only for a promotion goal, but also because talking about it made me feel good"* (p. 9). Further on, *"No, it was not because I had let it off my chest that it was finished, swallowed/digested, and that there was nothing else to say, to*

search for - on the contrary. (p. 10). But also, "*what I tried to do with "Le Voile noir" and what you have done in return by writing to me is breaking the loneliness, making this lonely cry become a dialogue.*" (pp. 11-12). She ended the second book by saying that she was now able to talk about her parents without crying. She, however, admitted having remembered none of her childhood memories.

These personal stories illustrate the contradictory findings presented in this dissertation. On the one hand, both authors expressed a strong need to talk and to communicate their experience to others. They did so by writing their book and by talking about it to the media. They expected it to be overly beneficial and that it would help them to deal with their trauma. By writing about their respective traumatic experiences, both Levi and Duperey thought it would be beneficial for them. Primo Levi said that telling others about his traumatic experience was "as any other elementary needs" and that it was intended to lead to "an inner liberation." Similarly, Anny Duperey thought that writing her book would help her to remember her childhood memories and to cope with her grief. They also *reported* that it was "clearly positive", that it had "strengthened [him]" (Levy), or that it was "very beneficial...because it made [her] feel good" (Duperey). On the other hand, several indices suggested that these episodes could not be recovered from because they had communicated and shared their experiences with others. Primo Levi committed suicide 40 years after the publication of his first book on the Holocaust and Anny Duperey explicitly reported that "it was not because [she] had let it off [her] chest that it was finished, swallowed, and that there was nothing else to say, to search for - on the contrary". She also said that writing the book did not help her to remember any childhood memory.

These personal stories are in fact clearly consistent with the conclusions of the present dissertation. It seems that, even if people report that it should be beneficial, the communication of emotions is not a panacea for resolving emotional experiences. It may well give the feeling that it is important and beneficial, even if it does not help to recover from the emotions. Anny Duperey, however, pointed out an important dimension that was not investigated in any previous research, namely the idea that talking and exchanging personal stories helped her to feel more socially integrated. It helped to "break the loneliness" and make her "lonely cry become a dialogue." This hypothesis about another function of the communication of emotional experiences will be discussed in more details below.

3. The significance of the effects of communication of emotional experiences

1. Why would communication of emotion not lead to emotional recovery?

The question then is raised as to *why would communication of emotion not lead to emotional recovery?* It is possible that, for adaptation, it does not make sense to forget the impact of important emotional episodes (Rimé, 1999; Rimé et al., 1998). With regard to adaptation, an emotional memory carries important information with respect to future situations. Emotions may be seen as adaptive responses to environmental challenges, and thus might prepare the individual to successfully confront and cope with future situations. If people had the potential to alter the emotion-arousing capacities of such memories by mere talking or writing about them, such process would deprive people of vital fruits of their experience (Rimé, 1999). In a sense thus, emotional recovery may be seen as maladaptive.

In support of this idea, for example, Goldsmith (1955) has reported that patients with spinal cord injuries who were actively upset about their disability were subsequently judged as showing more progress in rehabilitation than patients who appeared to be less distressed. Similarly, Haan (1982) reported that mothers who reacted to the birth of their malformed infant by becoming upset were subsequently more likely to be judged by health professionals as providing effective care for the child than mothers who were not upset when the baby was born. Both these studies suggest that the emotional impact might play an important part in motivating effective coping behaviours. A specific criteria, such as "freedom from emotional distress" may thus not be the only indice needed to evaluate how adequately a person is coping (Silver & Wortman, 1980; Wortman, 1983).

2. But, is communication of emotion *really* not inducing emotional recovery?

The above question, however, should not lead one to conclude that I believe or demonstrated that communication of emotion does not lead to emotional recovery. The results of the present dissertation only suggest that I, up to now, failed to show that it leads to self-reported emotional recovery. It is possible that communication of emotion really leads to better recovery but that the dependent variables that would allow to objectively demonstrate it were not yet identified. Indeed, although the presented experiments have involved proper randomisation and sufficient manipulation checks indicating that the communication of emotion was differentially induced among participants, an important limitation must be acknowledged. All the data involved *self-reports of cognitive and emotional processes*. All the studies reported in this dissertation are limited in that they focused on only one component of the emotion response system. Contemporary conceptions of emotion, however, consider that the emotion response

system includes physiological, behavioural/expressive, and cognitive/experiential components (e.g., Dodge & Garber, 1991; Frijda, 1986; Lang, 1979). One major reason to consider each of the three components is that they evidence low intercorrelations (e.g., Cacioppo et al., 1995; Frijda et al., 1992; Lang, 1968; Martin, 1961; Zajonc & McIntosh, 1992), suggesting that they represent distinct components of emotional responding. Objective measures of the physiological component of emotions (e.g., heart rate, blood pressure) should certainly be considered. Previous studies on the influence of communication of emotion on the autonomous nervous system have found no significant long-term results. These studies, however, did not assess as such emotional recovery outcomes because they did not measure it *when people are asked to remember the event*. They assessed it in general, they represent thus general physical health measures. This physiological dimension of the emotional response should thus be investigated in the future.

3. Why do people think and report communication of emotion is beneficial when it apparently is not?

There may be several answers to the question of why do people report communication of emotion is beneficial when it apparently is not. First, as suggested earlier, it is proposed that these subjective benefits are only beliefs or illusions and that they are not really felt by participants. In support of this view, results indicated that perceived benefits were associated with the *belief* that communication has beneficial effects. They were, however, not related to benefits in recovery, better well-being, or better physical health. As Shelley Taylor (1983) demonstrated, illusions of control over the causes of an emotional event and over one's life may be critical to mental health and psychological adjustment. Optimism pervades people's thinking (Tiger, 1979). People believe that the present is better than the past and that the future will be even better (Brickman, Coates, & Janoff-Bulman, 1978; Free & Cantril, 1968; Weinstein, 1980). People expect to succeed and improve in the future. All these views of oneself and the world become even more extreme under ego-involving conditions (see Greenwald, 1980). Such illusions may have evolutionary significance. As Greenwald (1980) noted, they contribute to maintain the self as a highly organised information processing system, and they produce behavioural persistence. Thus, people may uphold the belief that talking helps although they may realise that it did not change the emotional impact of the event. Keeping the illusion that it will be beneficial for the future to share may be more important as such than the actual beneficial recovery effects. Concluding that these perceived benefits are "only illusions" should, however, not been taken for granted because results on which this idea rely only depend on correlative data. This hypothesis should thus be confirmed by experimental investigation. Suggestions for future research will be discussed below.

Second, there are other reasons to believe that even if the communication of emotions is not beneficial for emotional recovery, it might be beneficial to other variables or have other functions. Subjective benefits created by the communication of emotions may be due to objective changes in specific dependent variables that were not yet tapped in the studies. Indeed, my research focused on intrapersonal effects of communication of emotion such as emotional recovery, well-being, and physical health. However, in natural settings, the communication of emotion often implies interpersonal processes, as one talks about something *to someone*. It is thus possible that the communication of emotion involves social functions rather than intrapersonal ones. There are at least three functions of the communication of emotion which should be investigated in the future. First, consistent with Anny Duperey's personal story, communicating about one's emotions may enhance interpersonal relationships and social integration (Rimé et al., 1998). Consistent with this hypothesis, when intense emotions are shared, listeners are found to reduce their use of verbal mediators in their responses (Christophe & Rimé, 1997). As a substitute, they manifest nonverbal comforting behaviours, like hugging, kissing, or touching. This decrease in interpersonal distance induced by the sharing situation can have lasting consequences for the relationship between the sharer and the listener. In this sense, sharing emotions may contribute to the development and maintenance of close relationships. This observation is consistent with findings from research on self-disclosure and liking. In a meta-analytic review, N. L. Collins and Miller (1994) indeed found that people who engage in intimate disclosures tend to be liked more than people who disclose less. Complementing this finding, they also found that, disclosure causes people to like their listeners. Finally, in a recent study conducted by Laurenceau, Feldman-Barrett, and Pietromonaco (1998), self-disclosure of emotion was found to be strongly and positively related to degree of perceived intimacy between partners of dyadic interactions.

Another social function of the communication of emotion may be that it helps people to comply to the social norm which pervades their culture. Indeed, according to social psychology theories on attitude and behaviour change, it is widely acknowledged that groups exert influence on a wide range of beliefs, attitudes, and behaviours of their members (Stroebe & Stroebe, 1996; Wiemann & Giles, 1996). After emotional or traumatic events, the environment can provide the person with socially-accepted ways of defining the experience, with culturally-prescribed forms of management and expression, and sometimes with a script about types of behaviours to be adopted from now on (e.g., mourning). Among societies or families where communication of emotion is regarded as a norm, communication of emotion should be frequent because people should try to *comply to this social norm* hoping that it will result in rewards or prevent sanctions (Deutsch & Gerard, 1955). Although this social influence model does not *per se* postulates beneficial effects on physical health or emotional recovery, it proposes that the communication of emotion should lead to feel socially normal and integrated.

Finally, the role of communication of emotions may also be taken from a broader perspective, in that it may serve societal and evolutionary functions (Rimé et al., 1998). Indeed, it may help the spreading of emotional knowledge through the social network. In other words, it may be suggested that emotions are shared because communication of emotion may serve to *acquire, build, and consolidate social knowledge on emotions*, such as collective memories of emotions and folk theories on emotion and health. In support of this view, social sharing of emotion has been shown to be a process through which emotional information is spread abroad. It is likely to feed the social knowledge about emotion because there is evidence that emotional experiences are usually transmitted by social sharing of emotion more often than in a single occurrence limited to one partner (Rimé et al., 1992). This hypothesis seems also supported because there is evidence that emotional experiences that have been shared to one sharing target are usually retransmitted to other partners (Christophe, 1997; Christophe & Rimé, 1997; Rimé et al., 1998). Thus, repetitive social sharings of emotion may help the spreading of social knowledge on emotions in the social network. Numerous channels of communication may be used to transmit emotional information. For example, emotional knowledge may be transmitted from one generation to another when parents or grandparents share their past emotional or traumatic experiences with their children (e.g., World War experience) or when children are told fairy tales (protagonists usually undergo very diverse and intense emotional or traumatic situations such as death of parents, rejection from parents or family members). The transmission of emotional information may also widely be spread through the mass media and folk literature (e.g., war experiences, bombing, murders, traffic accidents, aeroplane crashes, natural disasters). Finally, recent research conducted on autobiographical memory and flashbulb memories supported that the view that social sharing of emotion might feed collective memories. Finkenauer, Luminet, Gisle, van der Linden, El-Ahmadi, and Philippot (1998) investigated the memory for the death of King Baudouin of Belgium in a large sample of Belgian citizens. The king had unexpectedly died during a vacation in Spain, after a reign of 42 years. The data revealed that the news of the king's death had been socially shared in an overwhelming fashion. More than half of the respondents talked about the event more than 6 times. Social sharing emerged as an integral part of a more general rehearsal process elicited by the news, which also involved following the media. These processes focused more on the original event--the news of the king's death--rather than on information relative to one's personal situation and surrounding circumstances when first learning about the news. Rehearsal thereby contributed to the creation of a collective memory in Belgian society.

4. Clinical issues

The scope of the present dissertation has been the effects of the communication of emotions in healthy or nonclinical populations. The effects of psychotherapeutic or counselling interventions were thus excluded. It would be tempting to assimilate the general conclusions of the present work and apply these to clinical situations. This should, however, not be the case. In the present section, the similarities and dissimilarities between communication of emotion and psychotherapy will be discussed. Then, my findings will be related to research conducted on the effects of a brief intervention technique that takes place just after potentially traumatic situations. Finally, the use of the writing paradigm or of social sharing of emotion will be discussed with regard to clinical settings.

1. Similarities and differences between communication of emotion and clinical settings.

As noted in Chapter 3, psychotherapies and counselling programs never use the communication of emotion as the sole technique for improving patient's health. Some factors which account for substantial amount of improvement found in psychotherapy patients are common with the writing paradigm developed by Pennebaker. For example, similarly to the writing paradigm, many psychotherapies may use "venting" through the communication of emotional experiences. Also, during psychotherapy and especially during psychoanalysis, patients have to talk about any thought or emotional event they want and link these with who they are, who they might be in the future, as it is the case in Pennebaker's writing instructions. However, in the writing paradigm, no personal contact exists between the experimenter and the participant beyond the one of the experimenter who guides the participant into the cubicle whereas in psychotherapy, a personal relationship takes place. Also, in directive therapies such as problem-centred therapies, guidance is given while no feedback is given in the writing paradigm. The role and expertise of the therapist is considered to play a fundamental role in psychotherapeutic effectiveness.

Whereas social sharing seems much more similar than the writing paradigm to the extent that a personal relationship exists between two persons, there are fundamental differences between the psychotherapeutic situation and the one in which two intimates communicate about their emotional experiences. The rules that underlie the social sharing relationship are completely different than the one in which a patient discloses intimate matters to a therapist who him/her-self does not disclose intimate topics. In these two situations, the rules of reciprocity rely on a different basis. In natural social sharing, the disclosure of one emotional experience will probably beget another one in the sharing partner. Both sharing partners may expect some benefits from it at a personal level. In the psychotherapeutic situation however, the client expects that his/her problems will be solved while the psychotherapist is having the relationship

for financial and professional reasons. As social sharing often happens between spouses or companions, a sexual and intimate relationship will often have taken place between sharing partners, while this will not be the case in psychotherapeutic situations. In addition, during social sharing, both partners may have a similar expertise with regard to experiences, whereas in psychotherapeutic situations, the psychotherapist is an essential agent in promoting change, he/she is supposed to have a knowledge on how to handle things. Also important is that, between sharing partners, the relationship is supposed to continue. As suggested above, one of the main function of social sharing might be to consolidate interpersonal relationships. By contrast, in the psychotherapeutic situation, the personal relationship is expected to stop. The ultimate objective of psychotherapy is that the patient would be able to function at least in a satisfying manner on his/her own. Thus, the goal of one is completely different from the goal of the other. Finally, during social sharing, people may expect the partner to give comfort and eventually give practical or financial support. In the psychotherapeutic situation, help is expected rather through knowledge and expertise. Thus, social sharing and psychotherapeutic situations are really different and the effects of one should not be assimilated to the effects of the other. This would need further investigation of the respective mediators of their effectiveness.

Health care professionals may tend to view current problems as a consequence of past experiences. Psychotherapy may strongly rely on talking about the traumas (Chigier, 1988; Lange, 1988, 1996; Solkoff, 1992). In psychotherapy and counselling, it is, however, important to be alert for less obvious causes of psychological dysfunction. For example, in comparing a sample of Holocaust survivors and a matched control group, Leon, Butcher, Kleinman, Goldberg, and Almagor (1981) found that members of the former group had in fact more favourable scores than the latter on various measures of personality and psychopathology (for similar findings, see also Kaminer & Lavie, 1993). In psychotherapy, even if psychological problems are mainly attributable to the trauma patients suffered in the past, therapeutic interventions relating to the trauma should not preclude other interventions addressing other, more recent causes of current problems (Lange, 1996).

2. Is communication of emotion beneficial in the case of traumatic situations?

Up to now, the present dissertation essentially addressed the effects of emotional experiences. The question, however, is raised as to whether the communication of emotion could help for more extreme situations, namely traumatic ones. This question is documented by recent clinical research conducted about the effects of Critical Incident Stress Debriefing (CISD) which is also termed as Psychological Debriefing (PD). CISD is a group intervention technique developed for implementation immediately after a potentially traumatising event in order to prevent the development of a post-traumatic stress disorder (PTSD) among exposed individuals

(see Dyregrov, 1997; J. T. Mitchell & Everly, 1995, for overviews). In PD or CIRD, participants each describe what happened from their perspective, then express their prominent thoughts concerning the event, and they communicate "what was the worst thing for them in this situation." The use of this technique has been growing rapidly in the last decade. However, the real beneficial effects of PD and CIRD interventions on PTSD symptomatology have still to be demonstrated (Kleber, 2000; Orner, 2000; Rose & Bisson, 1998). Indeed, a variety of studies that have assessed the effects of CIRD or PD yielded non significant results (e.g., Deahl, Gilham, Thomas, Searle, & Srinivasan, 1994; Griffiths & Watts, 1992; Kenardy et al., 1996). A recent meta-analytic review of randomised controlled studies on the effects of PD interventions following trauma indicated that out of six studies, two found positive outcomes on indices of psychopathology (PTSD), two demonstrated no difference on outcomes, and two showed some negative outcomes in the intervention group as compared to a non-intervention group (Rose & Bisson, 1998). A similar review conducted by van Gageldonk and Rigter (1998, quoted by Kleber, 2000) yielded even more negative results (out of 8 reviewed studies, 6 found no difference, 1 positive outcomes, and 1 negative outcomes). However, a variety of studies also indicated that a vast majority of victims or professionals involved in traumatic situations reported that psychological debriefings were useful (Bierens de Haan, 2000; Hovens, 2000). Thus, consistent with my own negative findings on the effects of the communication of emotions, the efficacy of PD and CIRD intervention after traumatic situations remains to be demonstrated. The fact that most individuals who received an early intervention spoke positively of it is an important finding, but cannot be used to justify the routine use of PD. Similarly to my own findings, it may be that assessment tools used do not detect positive adjustment changes after traumatisation, or that subjective satisfaction with an intervention does not necessarily correlate well with outcomes considered up to now.

3. When and how could communication of emotion help in clinical settings?

The question then arises whether communication of emotion may help in clinical settings. Clinicians and counsellors could use natural social sharing in group or family sessions and the writing technique as a clinical tool for people who are having the greatest difficulty in coping with a traumatic or emotional event. The use of writing has in fact already been used in individual psychotherapy. For example, Luciano L'Abate, a private practitioner in Atlanta (Georgia), and Alfred Lange from the University of Amsterdam (The Netherlands) use the writing technique as one method for increasing therapeutic efficiency and effectiveness (L'Abate, 1987, 1991; Lange, 1994, 1996). In these situations, writing consists of intervening by relying on self-administered homework assignments varying in their degree of structure and content. Within the context of psychotherapy, writing is used in conjunction with, or in some instances, as the only form of, intervention at a particular stage of treatment or in certain

therapeutic contexts. Although self-administered by patients, completed assignments are scrutinised by the therapist who then provides corrective feedback, either verbally or in writing, depending on the situation. These assignments are used as a springboard for further discussion and exploration in therapy.

These techniques may be useful for different reasons. First, when people *do not recover* because they were *inhibited by social constraints*, this might help to give a place where it is allowed to express one's emotions without the direct evaluation of another person. Because the writing intervention does not need a real recipient to be present, such tool may be particularly useful in case of social constraints (see discussion about constraints and inhibited experiences below). Second, in cases when individuals continue to show extreme distress, these tools may be used as an interesting manner to induce the structuration of the thoughts and feelings and meaning-making. Although there is a need to investigate whether and how beneficial changes would occur, consistent with James Pennebaker's opinion, I am optimistic about using these low-cost effective techniques as a clinical tool for people (Pennebaker, Zech, & Rimé, in press). These techniques should, however, not be the only ingredient of psychotherapeutic setting.

In support of the view that social sharing or writing about emotional experiences would be helpful in clinical settings, some experimental evidence indeed exists that the communication of emotional experiences improves moods and physical daily functioning among rheumatoid arthritis patients (J. E. Kelly et al., 1997) and that writing about emotional experiences induces clinically relevant changes in health status among patients with asthma (on forced expiratory volume) and among patients with rheumatoid arthritis (on overall disease activity) (Smyth et al., 1999). In fact, the conclusions of a recent meta-analysis on 15 studies examining the effects of emotional (non-) expression among unhealthy people (e.g., having cancer, AIDS, renal disease, rheumatoid arthritis, inflammatory bowel syndrome) were less optimistic (Panagopoulou, Kersbergen, & Maes, 2000). In addition to the above two controlled studies, this review also included studies examining the effects of naturally occurring expression (or inhibition) of emotions. With the exception of the two controlled studies, results indicated no relationship between either emotional expression, or emotional inhibition and perception of disease severity. While expression of emotion was not associated with fewer psychological distress and fewer helpless attitudes towards the disease, the inverse relation was found for emotional inhibition. As Panagopoulou et al. (2000) concluded, these results suggested that induction of emotional disclosure in a structured and controlled way in medical populations can function as an external regulatory system for emotional experiences, alternative or supplementary to internal cognitive capacities.

5. Considering some frequent objections

Several questions or objections are frequently raised when I am presenting my results and conclusions. Below, I wanted to answer some of the most frequently raised ones.

A first question concerns whether it would be possible that the emotional events that participants talked about were not "active" enough to be able to find significant effects or that communication of emotion would *only* lead to beneficial effects if people had been distressed or had intrusive thoughts at the beginning of the study (Lepore, 1997; Lepore, Silver, Wortman, & Wayment, 1996). In a similar vein, it could be argued that the time elapsed since the occurrence of the event was too long or that events were too old to allow changes in recovery. Finally, it would have "worked" if I had controlled for need to share. These arguments could be held if I had not asked participants to recall intense negative emotional events. In Experiment 2, participants were explicitly asked to recall an emotional event they still ruminated about and they still wanted to share. In the three other experiments, interviewees were also asked to recall an emotional event they still wanted to share with others. Interviewees were also selected according to the fact that they reported emotional events that had occurred less than 3 years ago. As was discussed previously in the *Results* sections, in the vast majority of the cases, participants talked about events that were still involving intense emotions at the beginning of the study. One of the purposes of Experiment 4 was explicitly to exclude each of the above objections. In the Target-emotion condition, interviewees talked about an unrecovered event. Finally, in each of the experiments, it was shown that highly significant time effects were found on almost all of the variables assessing emotional impact, suggesting that recovery effect could still be observed, even if events were not very recent.

A second objection is that it is unlikely that a single session would help people to recover from their emotions. However, the logic on which my studies relied is that both common sense and psychology believe that communication of emotion should have an effect of relief. In this assumption, putting emotions into words represents *per se* the functional process. Neither common sense, nor the literature propose that people should talk a certain number of times about their emotions. They only propose that communicating one's emotions is beneficial and this is exactly what I tested. In support with the view that communicating emotions several times would not change the conclusions, it should be noted that, together with colleagues of the University of Utrecht, a controlled study was designed with *repetitive social sharing* (Stroebe, Stroebe, Zech, Schut, & van den Bout, 1997; Stroebe, Stroebe, & Zech, 1996; Zech, 1999). In this study, 119 individuals, ranging in age from 23 to 76, were contacted on average 7 months after the death of their spouse. They were randomly assigned to one of five conditions. In three conditions, participants had to write down their reactions to the loss of their partner *for half an hour on seven consecutive days*. Respondents were asked to either write about their feelings about the loss, the facts and problems surrounding the loss, or both their feelings about, and the

facts concerning the loss. Two control groups were not asked to write about the death of their spouse. The written essays were then mailed to the experimenters. Dependent measures were not only self-report measures of emotional impact and mental health given before, 15 days after, and 6 months after the intervention, but also information about health problems and doctors visits based on reports from their general practitioners for one-year period before and after the intervention (on 80 bereaved). At follow-up, the experimental and control participants did not differ in terms of their long-term physical health, nor on any of the measures of emotional impact and mental health. The results of this study bolster my confidence that several long-lasting sessions of communication of emotion would not have changed my negative results on emotional recovery.

A third concern deals with whether I controlled for natural social sharing (or rumination) between the sessions. One could suspect that people who are instructed to talk about an emotion in the laboratory will later talk or ruminate about it again after the experiment and that these additional processes would then allow future emotional recovery. However, there are reasons to believe that natural social sharing (or rumination) between measurements may not play a role in recovery. Indeed, at the follow-up of each of the reported experiments, social sharing and mental ruminations had decreased rather than increased as compared to the beginning of the studies. In addition, evidence was reported that naturally developed social sharing did not account for future emotional recovery (see Chapter 5).

A fourth concern deals with whether effects would have been observed if the design of the studies had involved measures at the longer term. It could indeed be suspected that emotional recovery would not occur shortly after the manipulation but that emotional recovery would need more time to happen. Three of the reported experiments assessed recovery after a delay of 3 to 7 days. However, Experiment 2 was designed with a follow-up conducted after two months and no significant effects were found on emotional recovery. Nevertheless, one does not know whether communication of emotion would lead to recovery during a specific time frame (at one month, at three months?). This should be examined in the future.

Finally, there are reasons to believe that the communication of emotion would have led to recovery effects if participants had talked about previously inhibited or undisclosed experiences. This objection has been raised on the basis of two arguments. First, people argue that an impressive number of studies have now shown that the inhibition of thoughts, feelings, or behaviours over long periods of time induces a variety of physical illnesses (e.g., Cole, Kemeny, Taylor, & Visscher, 1996; Kagan, Reznick, & Snidman, 1988; Pennebaker & Susman, 1988) and that talking about these experiences leads to benefits on physical health. The problem with this argument is that it confounds emotional recovery and physical health. As noted, these should not be taken for one and the same thing. I do not deny that physical health can be improved by communicating previously undisclosed experiences. Rather, I argue that it should be determined whether similar findings would be found for emotional recovery.

A second argument raised in support with this hypothesis relies on the evidence that the inhibition or suppression of thoughts results in continued ruminations and in cognitive hyperaccessibility of the to-be-suppressed thought (the so-called "rebound effect", see Clark, Ball, & Pape, 1991; Wegner, 1994; Wegner & Erber, 1992; Wegner & Gold, 1995; Wegner, Schneider, Carter, & White, 1987; Wegner, Schneider, Knutson, & McMahon, 1991; Wegner, Shortt, Blake, & Page, 1990) and that intrusive thoughts are positively associated with more distress. Although no rebound effect was found for specifically emotional thoughts (A. E. Kelly & Kahn, 1994; Muris, Merckelbach, van den Hout, & de Jong, 1992; Wegner & Gold, 1995), it is possible that when such thoughts are inhibited over a long-term period, the rebound effect would be found. Thus, it is also possible that the communication of previously inhibited emotional experiences would lead to better cognitive functioning as indexed by a decrease of mental ruminations.

Recent research has explicitly tested whether communicating previously undisclosed experiences leads to emotional recovery. In two recent studies, Paez, Velasco, and Gonzalez (1999) specifically compared the long-term effects (at two-month) of writing about previously disclosed and undisclosed emotional events. Five indices of emotional intensity felt when completing the questionnaire (IES avoidance scale, IES intrusion scale, appraisal of the event/search for meaning, arousal and valence of the event) and two indices of subjective well-being (PANAS PA and PANAS NA, Watson, Clark, & Tellegen, 1988) were considered. Although participants in the two trauma conditions showed more positive moods as compared to participants who wrote about social events at the two-month follow-up, they felt that completing the questionnaire about their event was less pleasant and that they felt worse (valence) than participants in the control condition. Also, participants who wrote about their emotional events continued to appraise the event as less controllable, less understandable, and more difficult to give an account about (appraisal of the event) than participants in the control condition. Similarly to my own findings, no differences were found on any other variables, suggesting that the arousal and rumination process still elicited by the emotional event were not influenced by the writing paradigm (see also Lepore, 1997). It should also be noted that this study failed to show any long-term differences between the two experimental conditions on each of the indices of emotional recovery from the emotional event. This suggested that communicating undisclosed experiences did not lead to more recovery effects than the communication of disclosed experiences. These results should, however, be confirmed by future investigations.

6. Directions for future research

The results of the present dissertation gave rise to an astonishing paradox. Indeed, they indicated that, on the one hand, people believe and report that talking about their emotions helps them to cope with their verbalised emotional event. On the other hand, however, when examining the evolution of the emotional impact of these events, people who have verbalised it do not recover more as compared to people who did not verbalise it. Future research should examine and test three hypotheses which would allow to resolve this paradox. One should examine (1) whether communication of emotion induces physiological emotional recovery rather than subjective emotional recovery, (2) whether people's beliefs about the effects of communication of emotion lead to perceived benefits, and (3) whether communication of emotion leads to interpersonal benefits.

The first hypothesis should be tested by the assessment of the objective physiological reactivity (e.g., heart rate, blood pressure, skin conductance) when participants are asked to recall an unrecovered emotional event. Immediately after, subjective emotional responses would be rated. Then, in a second step, people would be assigned either to a condition of communication of emotion, or to a trivial condition. After a delay, participants would again be asked to remember the emotional episode and their physiological reactions would be recorded again. They would also answer the emotional impact questionnaire. Comparison of subjective and physiological reactions would then allow to know whether communication of emotion leads to better physiological emotional recovery.

The second hypothesis can be tested by different ways. If perceived benefits from the communication of emotion are reported to gain cognitive coherence with people's beliefs, natural variations in the beliefs should show differences in perceived benefits. For example, one could select people according to their beliefs about the beneficial or detrimental effects of communication of emotion. One could also select individuals in cultures where it is socially undesirable to share negative emotions. Anthropological research has indeed shown that the social norms that guide coping with emotions may considerably vary from one culture to another one (e.g., Mesquita, 1993). In several Oriental populations (e.g., Indonesians), it is socially undesirable to share negative emotions because people believe that "it allows forgetting", and that "not confiding in others is a sign of compassion for the others" (Georges, 1995; Wellenkamp, 1995). Studies comparing individuals from the West and East should thus show differences in beliefs and in perceived benefits from the communication of emotional experiences. The experimental manipulation of people's beliefs should also lead to modify perceived benefits. If people's beliefs in the beneficial effects of communication of emotion are manipulated, for example, by means of vignettes stressing the detrimental effects of communication of emotion, it may also be possible to observe a decrease of perceived benefits after the communication of an emotional experience.

The third hypothesis addresses dependent variables that have been underinvestigated, namely social relationship ones. It would, for example, be possible to show that, after the communication of an emotional experience which was previously undisclosed to an intimate, beneficial effects on the degree of intimacy or sympathy, or that the intention of social behaviours such as wanting to give social support or have a drink, would increase between two close persons (see N. L. Collins & Miller, 1994; Sarason, Sarason, Hacker, & Basham, 1985).

7. Concluding remark

Any emotionally upsetting experience has the potential to aggravate mental and physical health problems. People who experience an emotion feel urged to talk about it and to share it with others despite the fact that it reactivates the negative aspects of the emotional experience. Although people believe that talking about their emotions will help them, the degree to which people talk about these experiences does not help them to recover from the emotion. However, individuals feel that sharing their emotions with intimates is meaningful and beneficial for various reasons. The point of this dissertation was not to propose that communication of emotion is not beneficial. Rather, I argued that it is not beneficial for any variable at any time. In addition, there is a need to further investigate effects that have not yet been considered. Directions for future research, for example on the function of communication of emotion on the development and maintenance of close relationships, were suggested. Given the importance of communication of emotion for people's physical, psychological, and social well-being, as well as for clinical practice, it seems clearly necessary to pursue these investigations to draw a clearer picture of the phenomena.

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There is little doubt that emotional and traumatic experiences can adversely affect physical and psychological well-being. However, there is also ample evidence that the ways people cope with emotional situations can influence their health and well-being.

Common sense and psychology both hold the assumption that talking about emotional experiences with others helps individuals to cope with their emotions. I collected data showing that a vast majority of lay people share the belief that talking helps and brings relief. In the literature, dozens of psychological concepts involve the view that talking about emotional experiences decreases the emotional load of emotional memories. Thus, it is quite generally taken for granted that talking about one's emotions is beneficial for emotional recovery.

The question then arises whether this commonly shared assumption is empirically supported. I conducted a systematic review of the relevant literature. Beneficial effects of the communication of emotional experiences were actually recorded on several indices of physical health as well as on some specific psychological variables. These positive findings were generally interpreted as resulting from cognitive assimilation elicited by the communication of emotion. In other words, it is assumed that talking about an emotional event helps to assimilate the emotional information and to find meaning in the event, and thus helps to recover from the emotion.

However, this assumption is actually never tested as such. Testing this assumption would require assessing whether the communication of emotion contributes to decrease the emotional impact caused by the event. My empirical contribution consisted of the experimental investigation of the effects of the communication of emotion on emotional recovery. Four studies testing these effects were conducted. Results revealed that, although people believe that talking about their emotions will help them, the degree to which people talked about their emotional experiences failed to contribute to the recovery from their emotion. However, individuals generally reported that sharing their emotions was meaningful and beneficial for the relief from their emotions, for their well-being, for their cognitive functioning, and for their social relationships. I observed that these perceived benefits actually correlated with participants' beliefs about the beneficial effects of communication of emotion, but not with the evolution of the emotional impact.

In my discussion of these findings, far from concluding that communicating emotion is useless, I argue that the actual beneficial effects still have to be specified. A good deal of potential positive effects of sharing emotions were not even considered up to now. In particular, I propose a number of alleys for future investigation of the impact of the communication of emotion on the development and maintenance of close relationships.