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Facets of Emotion Regulation in Families with Adolescents: A New Research Approach

Meinrad Perrez, Dörte Watzek, Gisela Michel, Dominik Schoebi, Peter Wilhelm and Yves Hänggi

Family is the preferred place for the regulation of individual and relational affectivity, for the heating and tuning of emotions. Larson and Richards (1994) call it an 'arena of emotions'. The project 'Regulation of Emotions in Families with Adolescents' explored the processing of emotional and somatic states, the perception of other's emotional states and the social regulation of or coping with emotionally heated social situations in the family. We expected the sensitivity for family members' emotions (i.e. accuracy of the perception) and the modalities of coping to be relevant prerequisites for the development and the well-being of the family members. An additional goal was the development of a new methodological tool to assess affective, cognitive and behavioural phenomena in the natural setting of family life. The questions we were focusing on concern (i) feelings and emotional states as a function of the time of the day, the day of the week, the social settings and activities, (ii) the role of accurate reading of the other's emotional state in families and couples, (iii) functional and dysfunctional modalities of interpersonal emotion regulation, and finally (iv) the evaluation of the possibility for practical applications of the new assessment tool in counselling and clinical settings. The following text describes some core facets of the project.

1 Introduction

Although the modern family may have lost many of its former core functions, some of its other key functions have become even more significant. For Nave-Herz (1997) and many sociologists the emotionalization and intimization is the most important characteristic of modern families. This feature is more important than the pluralization of family-forms, which was already present in pre-industrial family structures. Family became, independently of the particular form, the place par excellence for the exchange of intimate

feelings, emotions and other concerns. It is the privileged place for the regulation of individual and relational affectivity, and for the regulation of emotions. Larson and Richards (1994) call it an 'arena of emotions' – not only of positive, but also of aggressive emotions, and occasionally it is the site of both love and violence. Ariès (1975) has stated that the families' function of emotion regulation, with the increasing levels of emotionalization and intimization, has become the dominant element during the last century. Nahrstedt (1992) showed how this trend to the intimization can be observed in a changing architecture of habitations in Europe since the seventeenth century. Luhmann (1982) considers the present family to be the only system equipped to address the emotional needs of modern society.

How does this affective regulation work within the family? Summary accounts have taught us a lot for sociological and psychological exchange theory and social psychology research. We know something about satisfactory relationships as a function of the costs and the benefits of intimate interaction. We learned, among other important aspects, that social comparison and the perception of justice in relationships play a key role (Mikula and Freudenthaler, 2002).

However, we know very little about how the interpersonal regulation of emotions, that is, about their mechanisms and processes. One major reason for this current situation is the methodological restrictions that are inherent in the traditional approaches to study within family processes.

2 Methodological aspects of traditional measurements in family psychology

Most research on emotion regulation, on conflict behaviour and stress in families and couples, has been undertaken using questionnaires on the basis of retrospective self-report data. Buehler's (1990) review of assessment tools in the area of family stress and conflict research suggests that such methods account for more than 80 per cent of this type of study. Even today, any examination of journals on family or couple psychology will yield similar results.

A crucial question in dealing with emotional states and behaviour performance of daily life, as an object of research, is how to assess these phenomena. Traditional questionnaires 'ask participants to retrospect over weeks and months and provide summary accounts of their psychological states and experiences' (Bolger, Davis and Rafaeli, 2003). However, over such a period of time people cannot recall reliably how they behaved. If retrospectively self-reported act-frequencies in a group discussion are compared with the results of coding by observers, the agreement is low (Gosling, John, Craik and Robings, 1998), even if the delays between behaviour or emotional states and retrospective assessment are relatively short (Käppler and Rieder, 2001). Smith, Leffingwell and Ptacek (1999) found that on average only 25 per cent

variance shared between the daily and retrospective accounts of coping behaviour. Studies from different fields of psychological research provide convincing evidence that retrospective data are not reliable (Margraf et al., 1987; Fahrenberg, 1994; Katschnig, 1980). Retrospective self-report data are impaired by memory bias, such as the mood dependency of memory, the need for consistency and so on.

Similar problems arise if subjects have to infer summary accounts on frequencies of their behaviour as indicator for their present behaviour (Bolger et al., 2003). Typical summary accounts of self-report data mirrors the subjects' beliefs about their behaviour, emotion and cognition rather than how they actually behaved, felt and thought in particular situations; the same problem arises in the estimation of frequencies of behaviours, emotions and cognition. This assessment approach may be useful and valid for the observation and measurement of the subjects' beliefs about how they felt and behaved in the past. However, if our object of study is not beliefs on one's own or other's behaviour and emotional experiences, but, rather, their actual behaviour, emotional and cognitive performances, we need to employ better observational tools than traditional questionnaires (Perrez, Wilhelm, Schoebi and Horner, 2001). In order to avoid the impairing effects on validity of usual self-report data, we need other, more appropriate assessment strategies.

One major goal of the Fribourg project on emotion regulation in families with adolescents was to develop and evaluate a new methodological tool for studying family processes. This objective took into consideration that in much traditional family research only one parent was the source of self-report data for the whole family (Buehler, 1990). The new procedure should engage with all family members. Furthermore, the data assessed have to be situated clearly within the theoretical framework.

3 Research questions

The project 'The Regulation of Emotions in Families with Adolescents' deals with the processing of emotional and somatic states, the perception of other's emotional states and the social regulation or coping of emotionally heated social situations in the family. We expect those features of sensitivity for other's emotions in the family (that is, the accuracy of their perception) and the modalities of coping are relevant conditions for the development and the well-being of the family members. A further and basic purpose was the development of a new methodological tool for assessing affective, cognitive and behavioural phenomena in the natural setting of family life.

The questions we are focusing on concern: (i) feelings, emotional and somatic states as a function of the time of the day, the day of the week, the social setting (family) and activities; (ii) the role of accurately assessing the other partner's emotional state in families and couples; (iii) the functional

and dysfunctional modalities of interpersonal emotion regulation; and (iv) finally the applicability of the new assessment tool.

4 How to assess affective, cognitive and behavioural phenomena in the natural setting of family life

In order to avoid the impairing effects on validity that are usually present in self-report data, we need assessment strategies which meet the following three criteria: (i) The procedure should allow for an assessment of the information mentioned above, in daily life under the social and environmental conditions, in which these states and events occur; (ii) The time lag between the experienced states and behaviour and their recording should be as short as possible, in order to minimize memory distortions. Information should be recorded when the subjects are still in the state of emotional arousal for storing 'hot emotions' and 'hot cognition'; (iii) The method should assess psychologically relevant data, not using a diary-free text self-description, but structured according to the theoretical framework.

We have therefore developed, over the past few years, a systematic self-observation method based on the use of pocket computers. Our assessment procedure has its roots in the experience of the COMRES (COMputer REcording System), that Perrez and Reicherts (1996) developed and evaluated in earlier projects on the recording of individual stress experiences and coping. The pocket computer is used as an external memory for stress, which is applied directly in daily stressful situations. This allows a minimizing of the problems of memory and the subjective retrospective distortion.

The purpose of our research method is to have access to the emotional life of families – this includes both positive and negative emotional and somatic states. The new method not only had to integrate a broader range of emotional states; it also had to involve the social contingencies of an individual's emotional state in the form of the behaviour of other actors present in the family. The event-sampling method for the assessment of individual stress experience and coping was therefore adapted to a time-sampling instrument to assess positive and negative emotional states, related cognitive activities and the social regulative activities of emotions from all members of the family.

What is self-recorded?

The method is devised for couples and families with adolescents. Table 3.1 summarizes the different information types and item formats assessed by the family self-monitoring system (FASEM-C).

4.1 Experience and behaviour sampling

The behaviour of other family members plays a major role in any analysis of the social regulation of emotions. This social relatedness of the assessed behaviour experience makes a time-sampling strategy indispensable. The first recording is made immediately after waking up in the morning, and

Table 3.1 FASEM-C information types and item types

Information type	*Item types*
1. Duration and quality of sleep (1st observation of the day)	5 Items (6- and 7-point scales)
2. Emotional and somatic state	11 (6-point scales)
3. Causal attribution	
Internal or external attribution	9 Items (3-point scales)
other persons	9 Items (3-point scales)
4. Control expectation	
by myself or by other persons	(triggered by 2)
which other persons	10 Items (3-point scales)
5. Somatic complaints/pain	10 Items (3-point scales)
Attribution	13 Items (categories)
6. Place	6 categories
7. Setting	14 Items (categories)
Presence of other persons	9 Items (categories)
evaluation of pleasantness	1 Item (4-point scale)
8. Evaluation of partner's affective state (only for parents)	8 Items (categories and 6-point scales)
9. Actual activity	16 Items (categories)
valence of activity	2 Items (6-point scales)
Consumption of drugs	7 Items (categories)
10. Conflicts with others	Yes/No, triggers:
Social coping	3 Items (3-point scales)
description of own behaviour	12 Items (3-point scales)
description of other's behaviour	12 Items (3-point scales)
11. Individual stress	2 Items (category and 3-point scale)
12. Individual coping	(triggered by 11.)
	12 Items (3-point scales)
13. Social support	Yes/No, triggers:
by whom?	4 Items (categories)
14. Evaluation of own and other's behaviour	(triggered by 13)
	2 Items (6-point scales)

the other five measurement points occur at intervals during the day. The handheld alerts the subject acoustically according to a random time point inside a time window of about three hours, five times per day during one week. At the given signal all family members had to record simultaneously their current emotional and somatic state and the other information mentioned above. This includes information on stressful individual or social events and coping with respect to the period between the previous recording and the present moment. The questionnaire programme is adaptive and the presentation of several questions is conditional upon previous answers. For example, if the question 'Do you feel any pain or physical complaints?' produces the answer 'yes', one has to answer supplementary menus that ask

for the reason. The signal-contingent assessment assures the simultaneous recording of all members of the family (older than 13 years). In the same way social support and coping reactions can be assessed. Coping responses are only asked for if an individual or a social stressful situation has been previously observed. Questions on social coping depend upon the involvement of other people in the situation (e.g. conflicts). For situations, requiring adaptation without social involvement, individual coping items are presented. The programme then only presents questions concerning control expectations if a negative emotional state has been previously recorded.

The total time spend on recording data depends upon the questions asked and whether more detailed information was required or not as a result of the answers given. For the shortest version the needed time for the protocol was 4.65 minutes (mean; SD=2.89) and for the complete version 7.28 minutes per protocol (SD=3.82).

After the self-observation week all subjects were questioned about their experience in using the assessment method. For most participants the duration of the recording task was *acceptable* (76 per cent), and nearly all participants (94 per cent) viewed the exercise positively. These results are in accordance with the experience of the previous study (Perrez, Berger and Wilhelm, 1998) and belies the expectation that ambulatory computer-aided self-monitoring disturbs participants, as suggested by Asendorpf and Wilpers (1999).

For further details with respect to methodological criteria such as reliability, reactivity and validity and with regard to technical aspects the reader is referred to Perrez, Wilhelm and Schoebi (2000) and Perrez et al. (2001).

4.2 Description of the samples

Swiss families with adolescent children were recruited by sending information brochures to families with schoolchildren at Fribourg and Bern in Switzerland. Only families with children in the seventh and eighth grades were recruited. Families interested in participating returned an application form and were later contacted by a member of the research team.

We present analyses from the Second and Third Fribourg family project. In both projects data collection by pocket computers was supplemented by questionnaires. During the self-observation family members had to record information over the course of one week, six times a day simultaneously on a random time-sampling plan. Only families with father, mother and at least one seventh or eighth grade child took part in the studies. Siblings were also allowed to participate.

In the Second project 96 families were recruited (N=314), in the Third project data from 77 families could be collected. As families took part with at least one adolescent, the whole data set was from 569 subjects within 173 couples.

The average age of the parents was around 45 years of age; fathers were slightly older than the mothers. Most of them lived in a stable partnership with a length of 18 or 19 years. The mean age of the children was 15 (SD=1).

Participants were middle or higher educated. More than 80 per cent of the fathers work full-time. Employment rate of women (60 per cent) is comparable to a representative Swiss sample (59 per cent) (Swiss Labour Force Survey (SLFS), 2002, 2003). Employment rate of women in Netherlands is about the same and in Germany or Austria 10 per cent lower. The rate of part-time working women is as high as the mean within these four central European countries (International statistics, 1999).

5 Some results

In the following section we refer to the results of the second and third Fribourg Family Studies. We first explain the rhythms of emotional and somatic states. What circadian pattern can be shown and what influences can be attributed to different days of the week or different settings? The accurate reading of the emotional state of family members is shown as an important factor in family life. In the third part of this chapter we look at functional and dysfunctional modalities of conflict behaviour. At the end of the chapter we show possible applications of the new assessment tool.

Statistical analyses

We used multilevel analysis for most investigations to control the multiple dependencies present data (see Rasbash et al., 1999; Bryk and Raudenbush, 1992). Generalized linear multilevel models were used to analyse the binary data of symptom reporting, to estimate the influences of external factors on an emotional state and to get coefficients for different components of accuracy and assumed similarity (projection). For an extensive explanation of the appraisal of these statistic methods in our context see Wilhelm (2001) or Michel (submitted).

In order to test the functionality hypotheses within conflict behaviour, we analysed data using hierarchical multiple regression models. In order to control for confounding the initial level of stress in the conflict situation and the experienced stress outcome (measured by emotional state), we additionally tested effects over three records subsequent to the conflict reported, controlling for the previous level of stress. Similarly, we controlled for concurrent relationship satisfaction to test long-term effects. We tested differences in the performance of functional and dysfunctional interpersonal emotion regulation using a multilevel ANOVA model.

5.1 Emotional states and symptom reporting over the day and over the week and in different settings

Operationalization of emotional state and physical complaints

In this section we refer to changes in emotional state during a normal week, and consider those situational factors that influence well-being. In the second

and the third Fribourg Family projects we asked the family members to judge their own state for a list of bipolar adjective pairs: 'Under tension–Relaxed', 'Sad/depressed–Happy', 'Concerned/anxious–Confident', 'Angry–Peaceful'. These items can be aggregated on the base of satisfying factorial parameters to 'emotional state' (see Perrez et al., 2000). The symptom report question in the self-monitoring procedure was phrased as follows: 'Do you currently suffer from any somatic complaints or pains?'

Results

Using multilevel analyses we could show that typical patterns exist over time. The pattern concerning emotional state is demonstrated in Figure 3.1. *Within the course of a day* the emotional state usually increases from morning to evening, with two turning points (significant linear and cubic trend). On Friday the increase from morning to evening is twice that of the other days. For most people the weekend really begins on Friday afternoon and this is associated with a substantially better emotional state. On Sunday the within-day pattern deviates from that of the other days, because in the afternoon the emotional state turns down and decreases until evening. This can be interpreted as the mental and emotional anticipation of work or school. The within-day patterns were different between females and males, but not between parents and adolescents.

The pattern within days or within weeks provides an interesting insight into emotion regulation. Which factors beside the daily or weekly changes have an influence on the emotional state, is the question of this paragraph. For the effects of setting variables on emotional state see Figure 3.2: Being with other people is related to a better emotional state, than only being with family members. When an out-group person is present in the

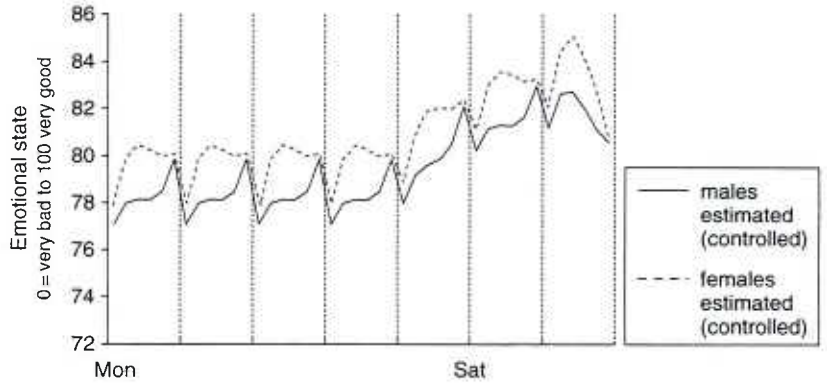

Figure 3.1 Estimated time-related effects on emotional state, when situational and psychological factors are controlled

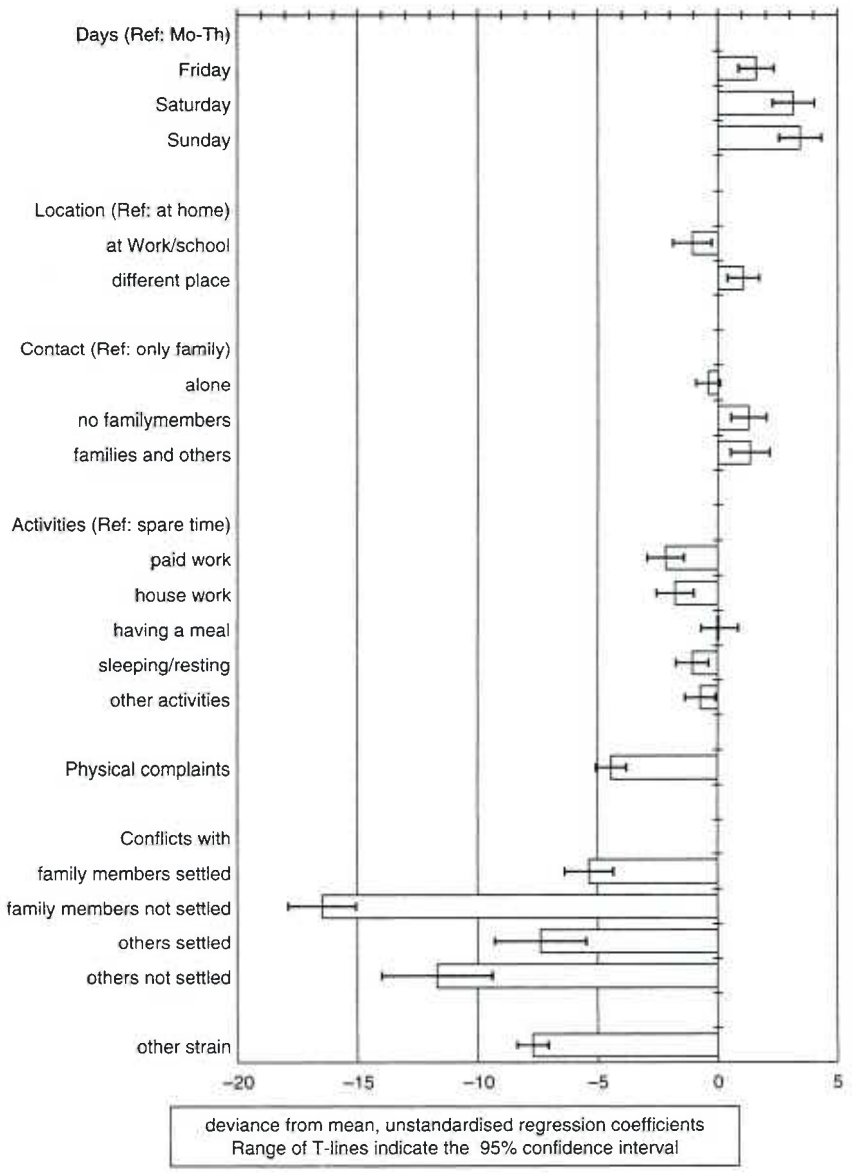

Figure 3.2 Influence of different settings on well-being, deviance from mean (week, all participants)

family their well-being is better than in family intern situations. The same was observed in situations only with other people. In the first family project we found the same results using a conventional strategy to analyze the data (Perrez et al., 2001). Independent of local and social setting, activities have an influence on the emotional state. Following leisure activity or taking a meal is associated with a better emotional state, than other activities. The worst emotional state is associated with working for the job or the family.

The control of setting, social contacts and activity reduces the weekend effect, as does the amount of increase in the emotional state from morning to evening. This could be expected because settings and activities as well as the social contacts are structured over time. The different effects are therefore confounded. But the structure remains after the statistical control for these setting-effects.

Results concerning symptom reporting showed a similar pattern, with the probability of reporting symptoms being higher in the morning and in the evening and lower in the middle of the day. Men and women do not differ in this general pattern of symptom reporting, but for women the probability is higher throughout the entire day (average probability of symptom reporting: men = 0.149; women = 0.202; $\beta = 0.365$; $SE = 0.160$; $p < 0.05$). In contrast to this, parents and children do not differ in their general probability of symptom reporting, but in their diurnal pattern. Children show a higher linear increase of symptom reporting earlier in the day ($\beta = 0.076$; $SE = 0.014$; $p < 0.001$). But the average probability of symptom reporting does not differ between weekends and weekdays (Saturday: $\beta = 0.026$; $SE = 0.064$; $p = 0.688$; Sunday: $\beta = -0.030$; $SE = 0.065$; $p = 0.648$). If the setting and activity is taken into account, a difference between work/school and other activities or setting is observable. During work or school less symptoms are reported than in other settings ($\beta = -0.419$; $SE = 0.094$; $p < 0.0001$). 20.8 per cent of all complaints are experienced at home. In contrast, only 13.3 per cent of all complaints are experienced at work or school (Michel, submitted).

Conclusions

- Situational features such as the time of the observation, local setting, social contacts and current activity each have their own significant effect upon the emotional state and upon symptom reporting, even if the influence of the other variables was held constant.
- Mean differences in well-being between family members were rare and rather small. Women report more symptoms than men, confirming the findings of previous studies. However, memory effects cannot be held responsible for this finding. Selective bodily attention might be a more fruitful hypothesis to explain this difference.

- Large differences in the variation of the emotional state could be demonstrated.
- The curvilinear pattern of symptom reporting found in an experimental study by Goebel and Cordes (1990), was replicated in our real life field study.
  - (i) Attention which is focused externally during working and school hours in the day can probably not explain this result. This finding was true even if the activity of work and school was taken into account.
  - (ii) Another explanation for the increased symptom reporting at home might be that individuals suffering from a certain disease such as flu, do stay at home and do not go to work while ill. Thus, more symptom reporting can be expected at home than in other settings.
- The difference in the symptom reporting pattern between parents and their children is a new finding. A possible explanation is a higher fatigue and tiredness in children at the end of the day, increasing various symptoms of exhaustion. However, this is so far only a hypothesis and has to be explored in future studies.
- For emotional and somatic states several analogies were shown. But there was found a weekend-effect for well-being and none for symptom reporting.

Social emotion regulation in the family depends not only upon the manifestation of emotions in at least one actor – manifestation that can be influenced by circadian dynamics and many other factors and incidents. A further precondition is that emotions are recognized and read by other actors in the family. The following section examines the accurate reading of the other's emotional state in the regulation of social emotion.

5.2 Accurately reading the other's emotional state in families and couples

Inferring correctly the current emotional state of another person is assumed as a central condition for successful social emotion regulation and interaction in the family. In the literature this ability is called *empathy* – or is at least seen as an important component of empathy. To emphasize the aspect of an accurate perception and inference Ickes and colleagues have introduced the concept of *empathic accuracy*, which is defined *as* the 'ability to accurately infer the specific content of other people's thoughts and feelings' (Ickes, 1997, p. 3). They also have created experimental paradigms to study empathic accuracy (Ickes, 2001).

Although these experiments are powerful tools, for the study of peoples' accuracy in perceiving and inferring thoughts and feelings of their interaction partners, they have their limitations. Interactions were short and influenced by the laboratory context (waiting room situation, or the instruction to discuss

a marital problem). Thus, the range of thoughts and feelings was restricted, and the intensity of the feelings rather low. Due to the brief interactions, empathic accuracy has only been studied at the micro level (changing states in a time frame of seconds and minutes).

With our approach we could overcome limitations of such laboratory experiments and we were able to study empathic inference in couples' and families' daily lives.

Operationalization of accuracy and projection

In addition to the emotional state of the self, parents should estimate the emotional state of their partner. Using multilevel methods we were able to get coefficients for different components of accuracy and assumed similarity (projection). We could therefore separate the spouses' accuracy in judging their partners' *actual emotional state* (at a single observation) from the accuracy in judging their partners' *daily emotional state* (average over six observations per day) and the accuracy to judge their partners' *general emotional state* (averaged across all 42 observations).

Results reported below are based on the data of 95 husbands and wives of the Second family project (for an extensive report, see Wilhelm, 2004).

Accuracy is the degree of correspondence between the spouses' partner judgements and their partners' self-judgements. *Assumed similarity* or *projection* is the degree of equality between the spouses' partner judgements and their own self-judgements. The husbands' projection measures how similar husbands' own feelings are to their judgements of their wives' feelings. As accuracy can be inflated by projection, when similarity between the partners is high, the accuracy coefficients should be separated into the part that is due to correctly assumed similarity (*indirect accuracy*) and the part that does not rely on assumed similarity (*direct accuracy*) (Kenny and Acitelli, 2001). This can be achieved by estimating accuracy and projection in one and the same analysis.

Results

Accuracy coefficients at all three levels were much higher than expected by chance, even when projection was controlled for. However, the level of projection was higher than the level of accuracy. The high degree of projection in judging the partners' general emotional state seems to be due to the fact that spouses use the scale to judge their partners' emotional state in the same way as they judge their own emotional state (response style).

Accuracy in judging the general state after projection has been controlled decreased substantially (from .59 to .34). This indicates that spouses reach quite a substantial amount of accuracy through correctly assuming that the partner in general feels quite similar to the spouses. Indeed, the similarity between the general emotional state of partners was substantially correlated

($r = .44$). For the judgement of the daily and actual emotional state a similar pattern could be observed, although decreases in accuracy were smaller.

In line with the literature (Brody and Hall, 2000; Ickes, Gesn and Graham, 2000) women tended to be more accurate in judging their partners' general emotional state than men ($t = 1.92$, $p < .06$). However, concerning the judgement of the daily emotional state and the judgement of the direct emotional state men were as good as women in judging their partners' emotional state.

We further examined accuracy and projection, when partners were together and when they were not together. The results confirmed our expectation that accuracy was significantly higher ($t = 2.46 < .05$), when the partners were together. Because they can directly perceive each other's verbal and non-verbal behaviour, and they have an exact knowledge about the situational circumstances, they are better able to judge and infer their partner's state.

However, they also reached an accuracy much higher than expected by chance ($t = 6.36$, $p < .001$), when the partner was absent, indicating that content knowledge and inference are sufficient for a basic accuracy (see Wilhelm and Perrez, 2004, for a more extensive discussion).

When spouses were together they tended to project much more than in situations in which they were not together ($t = 7.69$, $p < .001$). This is surprising, because one could expect that partners base their judgement on the direct perception of their verbal and non-verbal behaviour and therefore do not need to project as much. Perhaps assuming that the partner has similar feelings, even if he actually does not, is a way to create the illusion of being in a common mood and therefore in harmony with the partner (Murray, Holmes and Griffin, 1996).

Neither accuracy nor projection seems to be moderated by the couple's relationship. This result does not confirm intuitive expectations, that accuracy should lead to better satisfaction (Noller, 1984; Gottman and Porterfield, 1981). However, there seems to be a more complex relationship between accuracy, projection and relationship satisfaction (see Murray et al., 2002; Ickes and Simpson, 1997; Murray et al., 1996).

Conclusions

- Spouses are quite accurate in judging the emotional state of their partner during their normal daily life.
- When judging the partners' emotional state, spouses use their own emotional state as the main guideline. Content knowledge and inference are sufficient for a basic accuracy.
- Accuracy increases substantially, when the behaviour of the partner can be directly perceived.
- A part of improvement in accuracy, when the partner is present is due to correct assumed similarity ('projection'). However, assumed similarity is exaggerated and is much higher, than real similarity.

- Individual differences in the amount of accuracy and 'projection' are large.
- Sex differences are rather small.
- There seems to be a complex relationship between accuracy, projection and relationship satisfaction.

To read accurately or inaccurately the emotional and somatic state of the partner or a child in the family can be expected as an important factor influencing the outcome of social emotion regulation (Swann, Hixon and De la Ronde, 1992). There may exist some exceptions concerning the benefits of accurate perception (Flury and Ickes, 2001) and some kind of errors (e.g. idealization) which are beneficial for the interaction, as has been discussed for example by Murray, Holmes and Griffin (1996). However, the way to perceive the other's state is not the only factor influencing the outcome of social emotion regulation. In most cases, the accurate perception of the other's emotional state may be a helpful condition for a functional social regulation of his of her emotional state, but it is not a sufficient condition. In particular, one needs specific competencies to regulate conflict situations, situations with divergent interests and negative emotional states. What are the modalities of social emotion regulation, which can be considered as functional? The next section is dedicated to this question.

5.3 Functional and dysfunctional modalities of interpersonal emotion regulation

Another aspect of primary importance for successful emotion regulation is the quality of interpersonal interaction. Conflict issues, one example of a stressor inside a relationship, have been compared to stressors outside of a relationship or system (see Bodenmann, 1995). In particular, the way people deal with stressful events occurring within a family, or more generally within an intimate relationship, appears to be a critical issue concerning the developmental course of the family and its members. Research has broadly shown that marital conflict has detrimental effects on relationship quality, family functioning, and mental and physical health. A variety of conflict characteristics have been related to the panoply of outcomes on different levels of individual and interpersonal well-being. Research on interaction behaviour during conflict yielded a detailed view of the interaction process, leading to the conception of distinct interaction and communication styles that are predictive of outcomes in relationship satisfaction and divorce (Fincham, 2003).

The standard approach to assess interaction behaviour in a conflict situation is the observation of conflict-related interaction in communication laboratories. Laboratory discussions are videotaped and coded for specific interactional cues (e.g. Gottman, 1994). However, research has also shown that the subjective evaluation of the conflict process and cognition during conflict equally account for detrimental effects of conflict (Holmes and Murray, 1996; Karney and Bradbury, 1995). It is therefore reasonable to account for the multiple individual perspectives on conflict behaviour if setting the focus on interpersonal emotion regulation. The self-observation methodology allows us to meet this requirement by simultaneously tapping the subjective perception of the subjects own and their partner's behaviour.

In the Fribourg Family projects, we assessed the subjects' perception of both intra-familial and extra-familial interpersonal conflicts. Among other aspects, we placed a major focus upon the question of the functionality of interpersonal behaviour in terms of emotion regulation strategies. We developed some theoretical criteria in order to determine the functional capacity of interpersonal behaviour for successful emotion regulation. Furthermore, we suggested differences in effects of conflict behaviour with regard to self-perception and partner-perception measures. We expected perceived conflict behaviour of the partner to be a more powerful predictor for emotion regulation outcomes than self-perception of conflict behaviour. We empirically tested our functionality hypotheses with regards to both proximal and distal effects.

Furthermore, we considered the question of to what extent the family, as a particularly important social setting, predisposes to perform conflict behaviour of a particular type. We hypothesized that, in interactions with family members, more dysfunctional, i.e. antisocial interaction behaviour is displayed. This argument is based on the assumption of certain types of 'display rules' for interpersonal behaviour. We suggested that within the family as an arena of hot emotions, a wider variety of behaviours designed to cope with stress due to conflict is facilitated. While stress due to conflict primarily stimulates feelings of anger, the performance of negative behaviour is also likely. However, while negative behaviour is subdued because of the expectation of social sanctions in response to negative behaviour, the family creates a stable environment with a higher tolerance for negative interaction. It is therefore likely that in conflict interactions with partners outside the family, both perceived own and the partners' interaction behaviour is of higher functionality. The results reported below are based on the samples of the second and third Fribourg Family projects.

Operationalization of functional and dysfunctional interpersonal emotion regulation

The information on what behaviour the partner performed and what behaviour the participants themselves performed was recorded on the basis of an 11-item list. Additionally, the intensity of each behaviour was rated on a three-point scale. The items on conflict behaviour represented measures of *functional* conflict behaviour, i.e. behaviours that account for the concerns and self-esteem of both partners, and *dysfunctional* behaviour, i.e. behaviours that account for concern of only either of the partners and that is not conducive to the self-esteem of at least one interactant (for more details, see Perrez

et al., 2000). Emotion regulation outcomes were operationalized by measures of emotional state over different reports at a proximal level. Relationship quality of the parents, measured using the Relationship Assessment Scale (Hendrick, 1988) was an operationalization on the distal level.

Results

The results obtained largely supported the functionality hypotheses. We consistently found effects of perceived dysfunctional emotion regulation by the partner on proximal outcomes. The more dysfunctional the regulation of the partner was perceived to be, the more negative was the well-being. Effects of self-perception measures of dysfunctional emotion regulation turned out to be a weaker predictor of proximal outcomes than self-perception measures of functional emotion regulation. The more functional I perceive my regulation, the more positive is my state of well-being. Furthermore, the concept of functionality seems to apply less neatly for the emotion regulation of adolescents if interacting with their parents.

With regard to distal effects, i.e. the relationship satisfaction of the parents, we consistently found that it is primarily the *perceived functional partner behaviour* that predicts *changes* in relationship satisfaction. In contrast, interpersonal emotion regulation behaviour turns out to be associated to *concurrent* relationship satisfaction with regard to *dysfunctional behaviour*, but not with regard to functional behaviour. In other words, one may assume that low levels of relationship satisfaction promotes dysfunctional interpersonal behaviour in conflict, while changes in relationship satisfaction are associated with the degree of functional behaviour performed during conflict episodes. Generally, effect sizes are small to medium (estimates range between $\beta = .09$ and $\beta = .31$ predicting emotional state and between $\beta = .18$ and $\beta = .36$ predicting relationship satisfaction), but are comparable to findings in other studies and considered substantial when taking into account the conservative analysis strategy as well as the fact that predictions base on few observations.

The analysis of the performance of dysfunctional and functional interpersonal emotion regulation revealed consistent and significant differences. Within the family, both perceived own and partners' interaction behaviour was less functional than while interacting with partners outside the family. This was true for the sample of the second Fribourg Family project (own behaviour: cohen's $d = .42$, $p < .02$; partners' behaviour: cohen's $d = .45$, $p < .02$), and was replicated on the basis of the sample of the third Fribourg Family project (own behaviour: cohen's $d = .55$, $p < .01$; partners' behaviour: cohen's $d = .92$, $p < .0001$). Neither a significant gender effect nor a significant generation effect could be found. Figure 3.3 shows the functionality of interpersonal emotion regulation behaviour inside and outside of the family with functionality of behaviours displayed on a scale from 1 to 100 ($m = 50$; $sd = 25$).

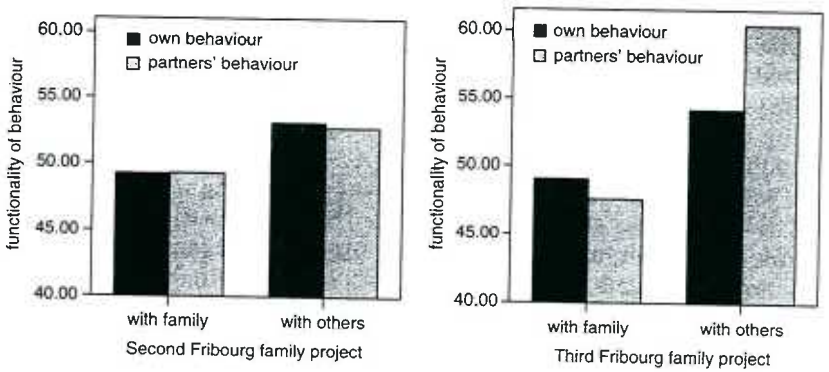

Figure 3.3 Functionality of interpersonal emotion regulation behaviour in different settings

Conclusions

- Functionality criteria regarding individual and relationship concerns as well as conduciveness for self-esteem are a useful approach to adopt when analysing interpersonal emotion regulation behaviour concerning both proximal and distal outcomes.
- Findings suggest that criteria of functionality do not apply equally in the case of adolescents.
- Social settings, such as the family, are of significance in determining the performance of functional and dysfunctional interpersonal behaviour with regard to emotional regulation in situations of interpersonal conflict.

5.4 Applications: the automated FASEM evaluation as a help for professionals in clinical and health psychology

One goal of the automatic, computer-aided evaluation of data collected during the period of self-observation was to create a software tool which could evaluate and display the output very quickly and easily. The evaluation, therefore, should be possible with minimal computer knowledge, making it suitable, for example, for experts in the field of family consulting or family therapy. The automation makes results available already in the first meeting after the self-observation by their clients. Such information can facilitate and effectively guide professional work.

The automated evaluation of the palmtop data was carried out using the spreadsheet program *Excel*. In a first step the user has to transmit the data from the palmtops to the PC, which happens automatically once both devices are connected. In a second step the user must start *Excel* and enter

the set-up information about participants in the self-observation. By clicking on the start button the evaluation appears on the screen, ready to be printed out.

The evaluation contains information about the emotion of the participants during the self-observation period, the reasons for these emotions (causal attributions), physical disorders, the expected controllability in everyday situations, the individual and social stress experiencing and its coping, as well as information about social support. The representation of the results is done with tables, diagrams and arrow diagrams. To get the visual representation of this data, one only has to click on the button labelled 'Graph'. The visualization of the emotional state during the week of the family, the so-called 'emotion score', is similar to Figure 3.1 (see above). While diagrams make data better comprehensible, arrow diagrams offer the possibility of representing complex relations within the family in an easy manner. As one example the expected controllability should be mentioned. The expected controllability can be computed between all family members and for each family member itself. Thus, a family of four persons results in the generation of 16 values, which are related to one another and which can also be interpreted independently of the other values. The representation of these values in an arrow diagram can help to understand the relationships which exist between the values.

The automated evaluation of the FASEM data can be very important for clinical work, although the method is still in its developmental phase. A variant of the system has been applied in a pilot study with 20 psychiatric outpatients of a university hospital (Gschwandtner, Hersberger and Rauchfleisch, 2000) without the recording of the other members of the family. The relevance of the analysis software will increase, once a software tool is available for construction of questionnaires on palmtop computers. With the possibility of generating questionnaires, together with the automated evaluation of self-observation data, the practitioner will be have equipment available which he can optimally adjust to the individual conditions of his clients (see the new development *IZY–Builder* by Law, Rozun and Rozun, 2004).

6 Discussion

This chapter reviews several findings of the Fribourg Family Project. The methodology of electronic time sampling with handheld computers (FASEM-C) overcomes some critical issues that have characterized paper and pencil questionnaires. Compliance with the protocol and adherence to the protocol is much higher when using electronic diaries than when paper booklets are used (Stone, Shiffman, Schwartz, Broderick and Hufford, 2002). Problems with retrospection were reduced considerably, because the delay from event to self-report was less than three hours. This allows us to capture everyday

behaviour much more reliably than with long- or medium-term retrospective reports. The limitations of our study chiefly concern the sample of subjects, who are not representative of the Swiss population. They represent upper-middle-class families, who are prepared to take part in a rather time-consuming study. But once they decided to participate, the level of acceptance is surprisingly high – we encountered only a few drop-outs in all three studies. The data have nevertheless a representative character concerning the measurement points, which allows us to consider the rhythms and reaction during a normal week. The relevance of FASEM-C as an assessment procedure for the characteristics of the interpersonal regulation and of emotions in families is supported by most of the results. Inter-individual processes can be analysed with respect to both interacting partners' subjective views.

A first result, which was replicated, concerns the circadian pattern of the emotional and somatic states. These observations are innovative in this research domain, and it is not possible to have access to these phenomena using traditional retrospective assessment procedures. The empathy-related results permit a better understanding of conditions influencing empathic accuracy as a condition for the social regulation of emotions in families.

The dysfunctional interpersonal coping responses of one partner in a conflict situation is a moderately good predictor of the emotional state of the other partner. The self-monitoring parameters are furthermore significantly correlated with indicators for the quality of dyadic and family functioning (for more details, see Schoebi, 2004). The replicated result that family members show significantly more dysfunctional social coping behaviour in the family setting than in other settings suggest the existence of something like 'display rules' for social coping in analogy to the display rules for emotion expression.

These results and the results in Widmer et al. (Chapter 2 in this volume) complement one another. Widmer et al. found less open conflict in companionship-couples. One characteristic of these couples is low internal orientation of men and women, they are open to others. We can assume that the presence of others, the openness to people outside the family has a positive impact. In our study the presence of other persons are associated with functional emotional regulation and better well-being. Widmer et al. found less conflict. The two different approaches – the micro-sociological and the psychological field-approach – show with respect to this question convergent results.

These first experiences with the electronic time-sampling procedure evidence its practical usfulness. The automated FASEM evaluation will be applied in different studies in a counselling and clinical context.

At present, the self-monitoring system is being used in the European project 'Family Life and Professional Work: Conflict and Synergy'. In this

project the stress and coping of young, professionally active couples with pre-school children is studied in seven different countries.

To sum up, our research has uncovered a new and promising method to assess real life experiences as well as interactive behaviour. Several results underline the importance of such a method, and improve our knowledge about the position of emotions in family life.

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