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## Emotion understanding and developmental psychopathology in young children

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### 12.1 Introduction

What aspects of their own emotional experiences do children bring to their understanding of others' emotions? Main and George (1985) offer a provocative and somewhat disturbing insight into this question. They were interested to see how abuse and maltreatment might affect children's responses to distress in playmates. Two groups of children from similarly disadvantaged backgrounds were compared: those who suffered abuse and maltreatment and those who did not. Children were between 1 and 3 years of age and were observed in a daycare setting. The children who had no history of abuse or maltreatment showed a range of responses to distress in others. They most commonly looked on or patted the distressed playmate in a mechanical fashion. However, they also engaged in more active empathic strategies to placate the distressed playmate, showing signs of concern and sadness and behaving in a motherly fashion. In contrast, expressions of active concern were absent from the abused and maltreated group. Although abused and neglected children did sometimes look on and pat the distressed playmate in a mechanical fashion, they frequently responded negatively. Negative responses had a varied character; sometimes these children became distressed and fearful themselves, and sometimes they became hostile—even physically hostile—towards the distressed playmate.

Stewart and Marvin (1984) also considered how children differ in their responses to others' distress but they emphasized individual differences in children's perspective-taking abilities. In their study, children between 3 and 5 years

of age were left in a waiting room with a younger sibling. Upon the departure of the mother all the younger siblings responded with varying degrees of distress. Approximately half of the older children offered some type of comfort to their younger sibling. Comforting strategies ranged from verbal reassurance to hugs, but by and large they were appropriate given the distress of the sibling. Furthermore, the majority of those children offering comfort to their younger sibling performed better on two perspective-taking tasks. In the first of these tasks they had to take into account the idiosyncratic preferences of a story protagonist engaging in a series of activities. In the second, they had to account for the knowledge of other people when it differed from their own.

Both investigations point to the important role of individual differences for children's empathic responding and both have implications for children's emotional competence. The findings presented by Stewart and Marvin (1984) suggest that advanced socio-cognitive understanding furnishes more flexible and accurate understanding of others' emotions and helps children to respond appropriately to others' distress. Sociocognitive understanding, which encompasses emotion understanding (EU), refers to the insights children have into others' perspectives, including their idiosyncratic desires, motivations, beliefs, and emotions (de Rosnay and Hughes 2006). In contrast, research by Main and George (1985) vividly illustrates that children somehow bring their unique emotional experiences—in the case of abuse and maltreatment at least—to the emotional situations they encounter, and that such experiences colour their subsequent responses to emotional situations. These two investigations also convey a persistent division in the study of children's emotional development between the child as someone who experiences emotion and someone who seeks to understand it. Nevertheless, these two pioneering investigations dramatically illustrate the importance of both aspects for the development of children's emotional competence (Harris 1994; Saarni 1999).

In this chapter, we examine the role of EU and, to a lesser extent, the related construct theory of mind (ToM) in research on developmental psychopathology. Our discussion centres on children who do not have any obvious developmental delays or disorders, such as those affected by Down syndrome or autism, because there is mounting evidence that these groups differ in fundamental ways from other children (Cicchetti and Sroufe 1978; Cicchetti 1990; Dawson *et al.* 2002; Peterson *et al.* 2005). We seek to explicate the normative developmental processes involved in EU, their function in organizing children's behaviour, and the ways in which they can become diverted or derailed. Such an analysis is also timely given recent growth in research on individual differences in children's socio-cognitive understanding (e.g. Repacholi and Slaughter 2003).

Although there is an intuitive connection between mainstream developmental research on EU and developmental psychopathology, a rapid survey of the empirical literature reveals relatively few attempts at integration (e.g. Southam-Gerow and Kendall 2002; Pears and Fisher 2005). This remains true despite the fact that developmental psychopathology is inherently concerned with emotional development, processes, and organization (Sroufe and Rutter 1984; Cicchetti 1990; Izard and Harris 1995; Southam-Gerow and Kendall 2002). In fact, it is not yet possible to set out the relations between children's EU and specific childhood psychopathologies, if indeed such relations exist. In contrast, there is steady growth in research on typical and low-SES children's socio-cognitive understanding, including the factors that promote such understanding and the importance of individual differences for children's subsequent development, social integration, and well-being (e.g. Repacholi and Slaughter 2003; Astington and Baird 2005; de Rosnay and Hughes 2006). Thus normative developmental trajectories in children's emotional development can be described, including distinct developmental benchmarks in EU and the function of such understanding in social and emotional development.

It is instructive, in the first instance, to give a brief outline of the domain of EU. We conceptualize EU in relatively narrow terms and see it as only one aspect of children's emotional development, for which emotion is treated as an object of knowledge. Hence, EU traditionally focuses on the ways in which children identify, predict, and explain emotion in themselves and in others (Harris 1989). EU defined in this way can be contrasted with much more elaborate and clinically grounded accounts of children's emotional competence. For instance, several emotion theorists and researchers have put forward integrated accounts of children's emotional lives within a developmental framework that simultaneously addresses many important dimensions, including the fact that emotion both regulates behaviour and is the object of regulation, the impact of cognitive development on emotional competence, and the processes of emotion socialization (e.g. Denham 1989; Saarni 1999; Halberstadt *et al.* 2001; Cole *et al.* 2004). Despite this bigger picture, we believe that a focused analysis of EU has much to offer, particularly as a framework for studying children's attempts to make sense of and integrate their socio-emotional experiences.

Therefore our main purpose in this chapter is to establish an empirically grounded account of the function of EU in the adaptation of typically developing young children to their social worlds. The relevance of this account for developmental psychopathology will, we hope, become self-evident as we work through the extant literature. The last 20 years have seen extensive and

detailed studies in many areas of children's EU that span toddlerhood to late childhood. Because of the nature of EU, researchers have relied heavily on children's abilities to reveal what they know through dialogue or behavioural predictions. However, we begin our discussion with a short overview of the capacities evident in late infancy and toddlerhood that underpin children's expanding EU (section 12.2). A continuous view of the development of EU that stresses stage-relevant capacities and achievements takes on particular relevance within a developmental psychopathology context, for which it is important to be cognisant of the complex nature of developmental processes and the possibility of disturbance or disruption at all stages (Sroufe and Rutter 1984). We then describe the organization and changing nature of children's EU throughout childhood and explore some different approaches to measurement (section 12.3). With this general description in place, we summarize the rapidly expanding literature concerning the individual and social factors influencing the development of children's socio-cognitive understanding (section 12.4). We include in this discussion a survey of the research that makes associations between maltreatment and young children's understanding of mind and emotion. Granted the existence of profound individual differences in children's EU and ToM, we shift our focus to the impact of such individual differences for young children's socio-emotional interactions with their peers (section 12.5). Our discussion includes both positive and negative manifestations of children's adjustment, and we attempt to distil the ways in which EU is likely to influence children's socio-emotional competence. We conclude our discussion with some thoughts on how an EU framework could be used productively in future research (section 12.6). Specifically, we emphasize the significance of EU as an organizing influence on children's experience rather than as a predictor of specific behaviours.

## 12.2 Foundations of emotion understanding

The underlying and apparently universal capacity of normally developing infants to recognize and respond appropriately to emotional facial expressions, albeit in limited terms (Haviland and Lelwica 1987; Termine and Izard 1988; Tronick 1989), is doubtless seminal to children's later EU. Nevertheless, these capacities have generally been viewed as species specific and probably having an innate basis (Harris 1989). However, by the time children can accurately identify and label simple emotional expressions and their representations in their third year, they have undergone an enormous transition in their emotional competence. Emotion is now something that can be identified, articulated, and discussed, and it is also something that can be

represented outside the immediate experiential context (Bretherton *et al.* 1981; Dunn *et al.* 1987; Wellman *et al.* 1995). Therefore it is tempting to treat EU as contingent on language development; indeed, there is every indication that linguistic ability promotes the elaboration of EU (e.g. Hughes and Dunn 1998; Cutting and Dunn 1999; Harris *et al.* 2005). In keeping with this view, some assessments of EU begin with children's capacity to recognize and produce the verbal labels for emotional expressions (e.g. Denham 1986; Pons *et al.* 2004). However, it is also apparent that preschool children's emotional insights rest on an appreciation of the emotional experience and agency of persons (Harris 1989). In fact, at least three research domains converge in suggesting that, even in the second year, toddlers have some understanding of their social partners as emotional agents with whom emotional experiences can be shared, communicated, and modified. We pick up this discussion before moving on to more conventional notions of EU as 'conscious knowledge' about emotional processes (Southam-Gerow and Kendall 2002).

Research on social referencing, for example, provides mounting evidence that towards the end of the first year, and certainly in the second year, infants utilize emotional input from social partners to inform their own responses to ambiguous situations, objects, and persons (Baldwin and Moses 1996; Moses *et al.* 2001). Relatedly, within the context of the attachment relationship, it is commonplace to see affective sharing through affiliative gestures, whereby infants actively share pleasurable experiences, such as the discovery of a new toy, with the caregiver (Ainsworth *et al.* 1978; Sroufe 1996). The second year also witnesses rapid developments in children's empathic understanding. Whereas infants do not initially attempt to comfort another person in distress, by 18 months of age many toddlers make simple but appropriate efforts to alleviate such distress. By 24 months many toddlers understand what others are distressed about, provided that it is readily interpretable from current circumstances, and they begin to take more sophisticated interventions to placate—or torment—others (Zahn-Waxler *et al.* 1982, 1992; Dunn and Munn 1985). Thus, by the end of the second year, toddlers tacitly understand that discrete emotional displays have referents (objects, persons, and situations), they understand the motivational salience of these displays, and they engage in social interactions based on such an understanding.

This sketch of EU in the first 2 years is commensurate with the contention of Bretherton *et al.* (1986, p. 534) that the '... toddler's naive "theory of emotions" is a functionalist one', insofar as toddlers grasp the central position of emotion in regulating behaviour through appraisal and interpretation of both their own behaviour and that of others. Admittedly, the behaviours illustrated above are open to alternative interpretations, but when children begin to talk

about emotion in the third year they place emotional concepts in a very similar folk psychological explanatory framework to that of adults, although their explanations are less sophisticated. In fact, various studies using different methodologies confirm that young children talk about emotion regularly from the beginning of the third year, and they do so appropriately. They also discuss emotions in non-present situations (past and future) and pretend entities. Although development brings a broader emotional vocabulary and an increasing appreciation of mental life, these essential features of talk about emotion are present in many children from 2 years of age, and they support the interpretation that there is remarkable continuity in young children's appreciation of the subjective nature of emotional experience (Bretherton *et al.* 1981; Bretherton and Beeghly 1982; Dunn *et al.* 1987; Wellman *et al.* 1995).

We stress continuities in EU from infancy, through toddlerhood, and into childhood to emphasize the fact that, even in toddlerhood, young children are not merely regulated by their emotions and the emotional communications of others, but are also emotionally aware. To see the implications of such emotional awareness, it is useful to consider a distinction made by Izard and Harris (1995) between the basic emotion appraisal system and the attributional system. The former, '... allows a person to assess a situation in terms of his or her beliefs and desires, and generates emotions depending on the outcome of that appraisal' (Izard and Harris 1995, p. 494): It is an embodied and automatic process. The latter allows the appraisal sequence and its emotional 'output' to be conceptualized. Conventionally, the area of inquiry captured by EU deals with the attributional system, and it is tempting to make a sharp distinction between the two systems (Harris 1994); after all, treating emotion as an object of knowledge requires reasonable linguistic skill, developing self-awareness, and, arguably, a capacity for imaginative thinking (Harris 1989; Harris *et al.* 2005). However, it is evident from our brief discussion above that the capacity to label and discuss emotions in a contextually appropriate manner probably also rests on a *grasp* of the functional role of emotions in human behaviour and interaction; which is evident in social referencing, affective sharing, and empathic behaviour. These earliest manifestations of EU are not adequately described by either the appraisal or attributional systems. Rather, they occupy the territory between the two.

The majority of our ensuing discussion will focus on EU in the conventional sense, but it would be naive to maintain too sharp a distinction between emotion as understood and emotion as experienced (Harris 1994). The shortcomings of such an approach are nowhere more evident than in the study of developmental psychopathology. The emotional disturbances that are the hallmark features of various psychopathologies have many potential

starting points and may assume different significance at distinct developmental periods (Sroufe and Rutter 1984). Izard and Harris (1995, p.496) explain how early emotion socialization can affect infants' emotional organization:

Socialization, particularly parenting practices during early development, creates an emotional climate that can have long-term effects on emotional development. It can determine whether the child perceives a given context as threatening or rewarding and whether the child expresses negative or positive emotions. Parenting practices can also bring about a wide-ranging recalibration of the appraisal system. Following such alterations, the infant can be more disposed to appraise a variety of contexts as fearful or distressing.

Thus we should expect variation in early emotion socialization, mother–infant emotional co-regulation (including attachment organization), and emotion-based communication (e.g. social referencing) to have an impact on children's later emotional organization; this is a cornerstone assumption within developmental psychopathology (Sroufe and Rutter 1984; Cicchetti and Toth 1995; Sroufe 1996; Rutter 2005). Studying EU to the exclusion of these antecedent factors risks telling only half the story about children's understanding of others as emotional agents (Harris 1994; Hughes and Leekam 2004). That said, the elaboration of EU in preschool and primary school also constitutes a series of developmental-stage-relevant capacities that open a world of communicative and representational possibilities for children, and it is also important to understand the function of these capacities in formulating and organizing behaviour. In the following discussion we provide an overview of what is known about the development of children's EU and discuss some important conceptual distinctions that also have implications for measurement.

## 12.3 The nature and measurement of emotion understanding

In the previous section, we emphasized that children's abilities to identify, predict, and explain emotions were a natural progression from less explicit and consciously accessible features of EU. We shall return to the importance of this developmental progression at the end of this chapter. In this section, we focus on the developmental-stage-relevant accomplishments in EU through the preschool and primary school years. Our focus in this chapter is on young children, but we also briefly discuss middle childhood to give a fuller developmental view.

### 12.3.1 The development of emotion understanding

Twenty years of research on EU has helped to isolate some clear milestones in children's capacities, and comprehensive overviews of this literature already

exist (Harris 1989; Meerum Terwogt and Harris 1993; Saarni *et al.* 1998; Pons *et al.* 2004). One way of describing development from the third year to the end of elementary school is to divide children's understanding into three broad, and imperfect, categories: public and situational, mental, and reflective (Pons *et al.* 2004). By 4 or 5 years of age, most children have a firm grasp of the public and situational aspects of emotion, including: the outward expression of basic emotions, the situational causes of emotion, and circumstances or objects that can reactivate emotional experiences by serving as a reminder. Thus 4-year-olds can recognize and appropriately label emotional expressions on the basis of expressive cues (Bullock and Russell 1985; Denham 1986), and they can appreciate how certain situations or actions can influence another person's emotions or their own emotions under different circumstances (Yuill 1984; Denham 1986). Also around this period, children have firm ideas about the continuity of personal emotional experience, so whilst they recognize that emotions wane over time, they can also appreciate that a reminder can rekindle positive or negative feelings. In fact, if explicitly asked to explain why a reminder has such an impact, even some 3-year-olds can make reference to mental processes (e.g. memory), but when spontaneously explaining why people's emotions change they rarely make reference to memories and, instead, rely on situational cues. Similarly, if asked how a story protagonist can become less happy or less sad, young children focus on situational rather than cognitive mechanisms (Harris *et al.* 1985; Harris 1989; Lagattuta and Wellman 2001; Pons *et al.* 2004).

During this first phase, children can most certainly associate people's desires and preferences with their concomitant emotions (e.g. someone will be happy if they get what they want or like) (Harris *et al.* 1989; Bartsch and Wellman 1995), but they quickly run into trouble-making emotion attributions when two individuals hold conflicting preferences or desires, or when they are asked to attribute an emotion to story protagonists whose preferences or desires differ markedly from their own (Moore *et al.* 1995; Rieffe *et al.* 2001).

From 4 to 7 years of age, children assume an increasingly mentalistic understanding of emotion. During this period they are able to explain different emotional reactions concerning the same situation or elicitor on the basis of conflicting desires or preferences, they develop an appreciation of the relationship between emotion on the one hand and mental states (e.g. beliefs) and processes (e.g. thoughts) on the other, and they come to recognize the distinction between real and expressed emotion. For example, Lagattuta and Wellman (2001) found that by 5 years of age most children from a predominantly middle-class sample could make explicit mental connections between a story protagonist's current emotions and past events (e.g. 'She's sad because the dog makes her think about her lost bunny'). By 6 or 7 years of age, children '... demonstrated a pervasive,

extended understanding of mind and emotion—one that did not differ significantly from adults' (Lagattuta and Wellman 2001, p.97). Also between 5 and 7 years of age, children start to understand how (false) beliefs relate to emotions (Harris *et al.* 1989; Hadwin and Perner 1991; Ruffman and Keenan 1996), and so they understand that someone's emotions will turn on their expectations rather than on the true state of the world.

At approximately 7 years of age, children's EU has taken on a distinctively adult character; they are able to explain emotions within a belief-desire framework in which people's emotional response turns on the match between their desires and their beliefs (Harris 1989; Bartsch and Wellman 1995). Notwithstanding these considerable advances, the subsequent years still witness profound changes. The final stage of childhood EU is characterized by an increasing awareness of the ways in which an individual can reflect upon a given situation from various perspectives, and thereby trigger different feelings either concurrently or successively (Pons *et al.* 2004). From approximately 8 years of age, children begin to understand mixed or ambivalent feelings, they become aware of the emotional determinants of pride, shame, and guilt, and they start to realize that someone can change the way they feel by changing what they think (reviewed by Harris 1989).

The public and situational, mental, and reflective aspects of emotion provide a convenient structure within which we can conceptualize the profound changes in children's EU throughout childhood. It is worth emphasizing that these abilities are hard won and represent a tremendous advance in children's capacities for reflexive self-awareness. Development of EU should also be distinguished from the counterpart skills manifest in *online* emotional appraisals. For example, children experience the feeling of surprise before they understand why someone might feel surprised, and they hide their feelings before they understand that emotions can be concealed to mislead others or to protect the self (Izard and Harris 1995). This *décalage* between the appraisal and attribution systems has received relatively little attention in the study of children's emotion regulation or developmental psychopathology, and we return to this issue in the final section of this chapter.

It is also worth stressing the overlap between emotion and ToM understanding. In fact, many widely used ToM tasks are also EU tasks (cf. Wellman and Liu 2004). That said, the two fields have typically been studied separately or treated as distinct features of children's socio-cognitive development. What does the extant literature reveal about the relationship between these two fields? First, there are impressive correlations between EU and ToM tasks, and both are strongly influenced by children's linguistic abilities (e.g. Hughes and Dunn 1998; Cutting and Dunn 1999). Secondly, they show similar developmental

patterns; insofar as children acquire new ToM and emotion insights or *concepts* in a predictable sequence (Pons *et al.* 2004; Wellman and Liu 2004; Peterson *et al.* 2005). Thirdly, children's early insights about emotion (e.g. that emotions result from the satisfaction or frustration of desires) and mind (e.g. that two people can hold different desires) are not discarded as children's psychological understanding of others becomes more sophisticated. Rather, earlier insights in both domains become incorporated into a richer and more nuanced folk psychological framework.

In sum, EU and ToM are both essential aspects of children's burgeoning socio-cognitive understanding, and it would be misleading to treat them as wholly independent domains (de Rosnay and Hughes 2006) or to study one to the exclusion of the other. Whilst EU and ToM (in particular false-belief understanding) may ultimately cleave along certain lines (Cutting and Dunn 1999; de Villiers 2005; Peterson *et al.* 2005), it is manifestly clear that the hallmark insights measured in classic ToM tasks (e.g. deception, conflicting knowledge, the difference between appearance and reality, and false-belief understanding) are essential underpinnings of emotion constructs. Therefore in the following sections, although our investigation centres on EU, we also draw on research that examines children's ToM understanding in the context of socio-emotional development.

### 12.3.2 Children's 'folk theories of emotion'

We have presented a view of EU that extends naturally from classical developmental research. It is a view which stresses universal and normative accomplishments that are distilled in relatively abstract terms (Harris 1994). From a clinical point of view, in which the emotional lives of children are given very detailed consideration, such an emphasis may seem jarring because it neglects many aspects of children's appraisals and responses to emotional interactions or situations. To bridge this divide, Saarni's (1999) work on children's emotional competence is very instructive. Saarni weaves a subtle tapestry in which children's cognitive development, their socialization within the family, broader cultural influences, contextual constraints, and unique experience combine and together account for an individual's emotional competence. Central to her account of children's emotional lives is the notion of folk theories of emotion. Broadly, these are beliefs about what emotions are and how they function. Saarni explains this as follows:

Children are exposed to emotion-eliciting circumstances, learn about the emotions involved, and subsequently incorporate that learning into their own emotional 'map' of when to feel, what to feel, how to express feelings, and whom to express them to. (Saarni 1999, pp. 63–4)

Folk theories, in Saarni's terms, are grounded in real experiences, convey cultural, familial, and age- and gender-appropriate values, and are closely linked with coping in emotion-eliciting situations. For example, a 7-year-old girl might have the following folk theories: (i) when someone gives you a present that you don't like, you must act happy to protect their feelings; (ii) when other children are being nasty or teasing you, you must act as though you don't care, so as to protect your feelings. A 7-year-old boy may share (i), but in the circumstances described in (ii) may be less preoccupied with hiding feelings and more focused on retaliation and expressing anger. This gender-biased caricature illustrates that both the girl and the boy grasp a key tenet of EU: emotions can be hidden or masked with another emotional expression to deceive others (Harris *et al.* 1986). However, it also illustrates that children's responses to emotionally complex situations are determined by multiple factors, not merely their level of EU.

EU and folk theories of emotion are complementary; both are manifestations of children's broader knowledge of emotion, and both can inform their responses to emotional situations synergistically. Nevertheless, children's level of EU puts conceptual limitations or *constraints* on the ways in which they are able to think about emotion-eliciting situations and to reflect on or anticipate those situations. We turn now to the measurement of children's EU.

### 12.3.3 Measurement

Whilst we have drawn distinctions between children's EU and folk theories of emotion, the measurement of children's knowledge about emotion has sometimes, justifiably, incorporated elements of both and at other times focused on very specific capacities. To facilitate future research with atypical populations, we discuss four approaches to assessing young children's EU and highlight measurement issues that are still in need of clarification.

The first approach is to tap into children's knowledge of the emotional expressions of real people. Facial expressions are commonly used as a stimulus (e.g. Izard 1971; Izard *et al.* 2001), but it is also possible to assess children's understanding of other expressions (e.g. vocal, postural, or integrated expressions) and some researchers have even considered children's capacities to produce emotional expressions (both automatically and deliberately) (e.g. Walden and Field 1990). For the purpose of illustration, we describe an intriguing procedure used by various authors (e.g. Frodi and Smetana 1984; Dunn *et al.* 1991a) which required children to identify emotional transitions in audiotaped conversations between a man and a woman. The procedure, developed by Rothenberg (1970), was conceptualized as an index of social sensitivity and required children to identify, using photographs of emotional

expressions, emotions expressed in a naturalistic conversational interactions (happiness, sadness, anger, and anxiety). Therefore children actually have to decode the emotional content of the verbal interaction and generate an appropriate cross-modal representation of that content—a demanding and apparently ecologically valid procedure.

The second approach, which has proved very popular with researchers studying young children, is Denham's (1986) affective labelling and perspective-taking tasks which incorporate both expressive emotional cues and developmental-stage-relevant conceptual demands. In the first section of this procedure, affective labelling, children have to make connections between emotion labels (happy, sad, angry, and afraid), representations of those emotions as depicted on felt faces, and the experimenter's corresponding expressive emotional cues. In the second section, vignettes with emotional outcomes are acted out with a faceless doll and children must attach appropriate faces. The initial vignettes depict situations which have predictable emotional outcomes (e.g. being afraid upon having a nightmare), but the latter situations are tailored to individual children and require them to identify protagonists' idiosyncratic responses to situations. For example, if a mother judges that her child will be afraid upon seeing a big dog, the child is presented with a vignette in which the protagonist's actions betray happiness when confronted with the dog. For each vignette in the second section, the experimenter acts out the emotional response on behalf of the protagonist (i.e. the correct response) and children must answer by affixing the matching facial expression. Whereas in the predictable stories children can obtain the correct answer by relying on either situational or expressive cues (from the experimenter), in the idiosyncratic stories they must be able to identify expressive cues to appraise the emotional perspective of the protagonist correctly.

The third approach is reflected in a large body of research which centres on the identification of the various components of EU (i.e. public and situational, mental and reflective). Whilst spanning a very wide developmental period, the methodologies have been surprisingly consistent (Pons *et al.* 2004). A common approach is to present children with a hypothetical story or situation which taps a developmental-stage-appropriate facet of EU, typically described in terms of conceptual milestones (e.g. the capacity to hide emotions). Such procedures can be acted out with props, depicted in illustrations, or merely described. The choice between each of these possible methods usually turns on children's age and the desire to maximize story comprehension. Critically, this approach has largely avoided genuine emotional expressions in the telling of stories (see de Rosnay and Harris (2002) for an exception). When expressive cues are involved in the telling of such stories or in the faces of the

story protagonists, they do not convey the emotional outcome of the story, and so children have to figure out the answer rather than apperceive it. Regarding children's responses, it is usually assumed that they have mastered the linguistic labels for basic emotions and they can identify iconic cartoon facial expressions expressing such emotions. However, with very young children, labelling and identification of basic emotions is sometimes investigated first and regarded as the most rudimentary manifestation of EU.

Finally, there are procedures to assess children's emotional comprehension that draw children into richer emotional narratives. For example, Cassidy *et al.* (1992) devised a procedure in which children's recognition of real emotional facial expressions, their understanding of the causes of emotion, and their responses to such emotions were assessed simultaneously. Children, who were approximately 5 years of age, were shown a picture of a same sex child posing an emotional expression (one each for happiness, sadness, anger, and fear) and asked a series of 15 questions to ascertain the sophistication of their emotional comprehension. Children who scored highly labelled emotions more accurately, acknowledged experiencing the emotions, were able to invoke situations that elicited the emotions, acknowledged having expressed the emotions, and demonstrated an awareness of appropriate responses (both actions and feelings) to other people's experience of the emotions.

We describe these four approaches because they illustrate how diverse the assessment of EU can be. No approach has an obvious and inherent advantage, and we can imagine ways in which they all have a place in exploring children's emotional lives. However, each approach limits the kinds of conclusions that can be drawn. Thus, while the emotional comprehension procedure described by Cassidy *et al.* (1992) provides a rich emotional narrative, it is hard to ascertain, for example, the reasons for poor performance (e.g. there may be genuine conceptual failures or an unfamiliarity with extended discussions of emotion). In contrast, classical EU tasks which hone in on a specific relations or emotion *concepts* (e.g. the dependence of emotion on belief) may tell us little or nothing about children's use of such understanding when making sense of more complex everyday situations (e.g. Pons *et al.*, 2004).

#### 12.3.4 Implications

There are many procedures for assessing children's knowledge about emotion, but insufficient attention is still given to the conclusions that such procedures allow. The task developed by Denham (1986) has proved very popular because it effectively taps into inter-individual variation and is nicely pitched to its young audience. However, the strong dependence on expressive emotional cues means that there is ambiguity surrounding the extent to which it accesses

children's knowledge of emotional expressions, their understanding of the situational determinants of emotion, and their emotional perspective-taking abilities. For each emotional vignette it is possible that children correctly appraise the emotion of the protagonist based on expressive cues, without necessarily seeing the implications for the protagonist's desires, preferences, or dispositions. That is to say, depending on a given child's strategy, correct responses on the predictable stories need not reflect an understanding of situation—emotion regularities and correct responses on the idiosyncratic stories need not imply that the child is genuinely able to take the emotional perspective of the story protagonist. Furthermore, such ambiguity is exacerbated by the existence of very similar procedures to Denham's which appear to provide information about the same dimensions of EU but, on closer inspection, have significant procedural variations (Iannotti 1985; Garner *et al.* 1994; Cassidy *et al.* 2003).

It is difficult to make definite distinctions between children's knowledge of emotional expressions and more abstract notions of EU; in real emotional encounters the two are often inseparable. However, this may prove to be an important distinction for young children, who have less reflexive self-awareness about emotion, and atypical groups. It is probably accurate to say that children's knowledge of emotional expressions is developmentally foundational to other manifestations of EU, the latter of which conventionally focus on abstract relations. Even though quite young children agree that certain situations or circumstances will provoke a given emotion (e.g. birthday parties make people happy), the meaning of others' emotional expressions is to some extent at least informed by children's unique experiences, such as the emotion socialization processes within the family (for a discussion, see Izard and Harris 1995) and individual differences in development. Thus the conventions governing the recognition, labelling, and perhaps also production of emotional expressions are important features of children's EU that deserve attention in their own right, even if they have a different character from those aspects usually accessed in cognitive EU tasks (see section 12.3.1).

In conclusion, it is not yet clear how different EU tasks relate to one another. To evaluate connections between EU and developmental psychopathology, it is prudent to keep such limitations in mind. Of particular importance for young children is the distinction between knowledge of emotional expressions and EU as defined in section 12.3.1. Whilst both are important facets of children's EU, there is a meaningful distinction to be made between them, to which we return throughout the remaining sections of this chapter. In the following section, we pick up on the factors that influence the development of children's EU.

## 12.4 Developmental precursors and correlates of children's emotion understanding

Researchers from many different backgrounds have endeavoured to isolate the factors that influence children's socio-cognitive understanding. Whereas some investigations have focused exclusively on narrow definitions of ToM, others have incorporated EU or studied EU exclusively. Despite these differences in emphasis, such investigations are broadly relevant to the current discussion because they provide a view on the sorts of abilities, interactions, and environments that foster children's psychological understanding of others. Developmental precursors and correlates of children's socio-cognitive understanding that have come to prominence include:

- (1) children's linguistic competence (e.g. Astington and Jenkins 1999; Cutting and Dunn 1999; Pons *et al.* 2003; Astington and Baird 2005; Harris *et al.* 2005);
- (2) children's conversational interactions (e.g. Dunn *et al.* 1991a; Dunn 1996; Ruffman *et al.* 2002; Harris *et al.* 2005; Nelson 2005; de Rosnay and Hughes 2006);
- (3) the inclination of mothers to take the psychological perspective of their child, including maternal mind-mindedness and the reflective function (Fonagy and Target 1997; Meins *et al.* 2002; Peterson and Slaughter 2003);
- (4) the quality of children's play (Youngblade and Dunn 1995; Jenkins and Astington 2000; Harris 2005);
- (5) the quality of children's primary attachment relationship (e.g. Fonagy and Target 1997; Meins *et al.* 1998; Harris 1999; Steele *et al.* 1999; Thompson 2000; Raikes and Thompson 2006);
- (6) children's Internal Working Model (IWM) of the attachment relationship (Fonagy and Target 1997; de Rosnay and Harris 2002);
- (7) other features of the emotional climate within the family (e.g. Cassidy *et al.* 1992; Denham *et al.* 1994).

The wide-ranging literature summarized above is unified in that it seeks to isolate specific child or parent factors within a normative spectrum that are causally related to the development of children's understanding of mind and emotion. In this section, we selectively highlight those developmental precursors and correlates of children's socio-cognitive understanding that have come to prominence in the research literature. In contrast with the normative literature, there is a relatively circumscribed literature examining associations between childhood psychopathologies and EU or ToM understanding in

young children (Southam-Gerow and Kendall 2002). However, there has been sustained investigation of maltreated children, and whilst this group is not constitutive of any particular psychopathology, they are highly at risk for various psychopathological outcomes (Cicchetti and Toth 1995). Therefore, in this section, we also consider the influence of maltreatment on young children's understanding of mind and emotion.

#### 12.4.1 Children's linguistic abilities and their conversational environments

The importance of children's linguistic abilities for their EU and ToM has been demonstrated repeatedly: children with more advanced linguistic ability are also reliably more advanced in their psychological perspective-taking (for a detailed discussion see Astington and Baird (2005)). Whilst there is some evidence that specific aspects of verbal competence may be associated with false-belief understanding (de Villiers 2005), the overall pattern suggests that the impact of linguistic ability on psychological understanding is very general (e.g. Cutting and Dunn 1999; Ruffman *et al.* 2003). The close link between children's linguistic abilities and their EU is perhaps unsurprising because EU assessments are typically language-based, children's negotiation of social situations is to a large extent mediated by language, and conversational exchange is a 'royal road' to others' viewpoints (e.g. Dunn 1996; Nelson 2005). Therefore it stands to reason that studies investigating EU in atypical populations or exploring the influence of EU on children's socio-emotional competence, for example, should ideally also take into account children's linguistic abilities and explore the relationship between these two factors.

Another factor that has been reliably linked with individual differences in children's EU is the quality of their conversational interactions. Verbal explanations about emotions have long been recognized as an important forum for emotion socialization; sometimes labelled coaching or induction (Lewis and Saarni 1985). More recently, causally coherent mother-child psychological discourse has emerged as an important correlate and causal influence on children's socio-cognitive understanding (reviewed by de Rosnay and Hughes 2006). Very similar patterns have emerged regarding child-child and child-sibling conversations, but it remains less clear how these latter interactions influence development, although a parallel pattern of influence is entirely plausible (Brown *et al.* 1996; Hughes and Dunn 1998; Jenkins *et al.* 2003).

In a similar vein, various authors have emphasized that the mother's regard for her child as an independent psychological being plays a significant role in the development of the child's psychological understanding of others

(e.g. Light 1979; Fonagy and Target 1997; Meins 1997). The influence of such a maternal mindset has been vividly illustrated by Meins *et al.* (2002), who showed that the mother's mind-mindedness—appropriate mental-state comments on her infant's behaviours at 6 months—predicted the child's mental-state understanding at 4 years of age independently of the child's concurrent linguistic ability. The exact relationship between mind-mindedness and the quality of mothers' conversational interactions with their children is not yet determined, but it is reasonable to conjecture that a mind-minded mother will also engage in more causally coherent psychological discourse with her children (Harris 1999; de Rosnay and Hughes 2006).

#### 12.4.2 The primary attachment relationship

Recently, there has also been an increasing focus on the quality of mother-infant attachment status as a predictor of children's later socio-cognitive understanding, with many researchers suggesting that a secure attachment relationship promotes children's understanding of mind and emotion (e.g. Fonagy and Target 1997; Meins *et al.* 1998; Thompson 2000; Symons 2004). The role of attachment status can be conceptualized in various ways (Fonagy and Target 1997; Harris 1999) but there is emerging consensus from different research traditions that the quality of the attachment relationship is likely to set the tone for conversational interactions that take place between mother and child, and it is the quality of such conversational interactions, in turn, that exert a direct influence on children's socio-cognitive development (Main *et al.* 1985; Fonagy and Target 1997; Thompson 2000; Reese 2002; Symons 2004). For example, Fonagy and Target, who put forward various possible connections between secure attachment and superior mental state understanding in children, also explicitly proposed that 'Secure attachment may then engender patterns of verbal interaction between child and caregiver which in turn support thinking about feelings and intentions' (Fonagy and Target 1997, p. 688). Within such a framework, a positive association between secure attachment in infancy and higher levels of socio-cognitive understanding in childhood is to be expected, but this relationship should be mediated by qualitative aspects of mother-child conversational interactions. The empirical basis of such an account is still uncertain. Crucially, the evidence linking observational measures of attachment with higher levels of socio-cognitive understanding is very inconsistent, although it is marginally more consistent for EU than for ToM (Laible and Thompson 1998; Steele *et al.* 1999; Meins *et al.* 2002; Ontai and Thompson 2002; de Rosnay and Harris 2005; Oppenheim *et al.* 2005; Raikes and Thompson 2006). Where a link between attachment and socio-cognitive understanding has emerged, the interpretation that it is

mediated by the mother's conversational style has to some extent been supported (Meins *et al.* 1998; Raikes and Thompson 2006).

To summarize, the proposal that secure attachment promotes children's understanding of mind and emotion does not yet rest on a firm empirical base, although it is noteworthy that the findings discussed above all come from normative samples and therefore may underestimate the significance of attachment for children's subsequent socio-cognitive understanding.

### 12.4.3 Child maltreatment

Maltreated children have been the focus of sustained investigation within a developmental psychopathology context, and it is clear that they encounter many developmental challenges over and above those ordinarily facing typical children: The extent and diversity of these challenges have been described by Cicchetti and his colleagues (e.g. Cicchetti 1990; Cicchetti and Toth 1995). For example, infants and toddlers experiencing maltreatment have aberrant emotional responses to ordinary social situations, such as maternal or stranger approach (Gaensbauer *et al.* 1980), and their attachment organization with their primary caregiver is likely to be characterized by insecurity and/or disorganization (Carlson *et al.* 1989). Such severe emotional disturbance in the mother-infant relationship suggests that atypical patterns of emotional appraisal are likely to be deeply entrenched in children who have been subjected to early maltreatment (Izard and Harris 1995). Young maltreated children also engage in less symbolic and dyadic play than non-maltreated children (Alessandri 1991), they often fail to show typical empathic responses to distress in other children (Howes and Espinosa 1985; Main and George 1985; Klimes-Dougan and Kistner 1990), and they have a higher incidence of emotionally dysregulated behaviour (e.g. Maughan and Cicchetti 2002). Regarding their emotional communications, maltreated toddlers make proportionately fewer references to internal states and maltreating mother-child dyads discuss emotions less frequently than non-maltreating dyads (Beeghly and Cicchetti 1994; Shipman and Zeman 1999). Finally, physical abuse and neglect are associated with considerable delays in school assessments of children's intellectual development (Erickson *et al.* 1989; Eckenrode *et al.* 1993). In sum, the effects of maltreatment are pervasive (Cicchetti and Toth 1995).

In terms of the developmental precursors and correlates of EU outlined above, it is evident that maltreated children are at risk of disturbance on nearly every front. Therefore it is easy to imagine that a normative developmental framework may be an inappropriate backdrop against which to evaluate the emotional development of maltreated children. However, a close reading of the literature reveals much continuity between the development of

EU in normal and maltreated children. Below, we examine the deficits in EU and ToM that have been associated with maltreatment, and we also ask whether they can be understood within the context of the preceding discussion or whether they need special consideration within the context of maltreatment. For clarity, we divide the child maltreatment literature into studies that focus on children's understanding of emotional expressions and studies that focus on more conventional notions of EU and ToM.

### Maltreatment and understanding emotional expressions

In section 12.3 we expressed the view that understanding emotional expressions, whilst different in nature to other aspects of EU, is likely to be an important foundation for later EU abilities. Given the aberrant emotional experience of maltreated children from early on in development, it is plausible that such experience has an enduring influence on their understanding of emotional expressions. To test this possibility, two research groups have measured maltreated and non-maltreated children's recognition of emotional transitions occurring in audiotaped naturalistic conversations between a man and a woman (see section 12.3.2) (Barahal *et al.* 1981; Frodi and Smetana 1984). The findings of Frodi and Smetana for children between 3 and 5 years of age revealed no differences in recognition accuracy between abused, maltreated, matched-control (for verbal ability), and typical control children. However, this young sample may have produced insufficient variability in recognition accuracy to reveal group differences. Indeed, the findings of Barahal *et al.* with children aged from 6 to 8 years showed that maltreated children were significantly poorer at recognizing emotional expressions than their non-maltreated counterparts. But close inspection of these latter data also revealed that differences in recognition accuracy were carried by children's IQ rather than a history of maltreatment.

More reliable differences between maltreated and non-maltreated children have emerged in research focusing exclusively on facial expression recognition. In three separate studies, Camras and colleagues (Camras *et al.* 1983, 1988, 1990) showed that maltreated children between 3 and 7 years of age had poorer understanding of universal facial expressions of emotion and, in the two later studies, poorer understanding of masked negative emotional facial expressions. All facial expressions were posed by a boy or girl model and subjects had to match facial expressions to emotion stories. Importantly, independent confirmation of these findings was obtained by During and McMahon (1991) despite significant procedural variations (including the use of adult and child facial expressions of emotion). Furthermore, Camras *et al.* (1990) examined the possibility that children's verbal abilities related to their recognition of emotional facial expressions and/or explained the observed

differences in performance between maltreated and non-maltreated children. In their study, no association between verbal ability and recognition of emotional facial expressions emerged. However, this finding should be treated with some caution because independent research groups have repeatedly documented such associations with similarly aged children (Izard *et al.* 2001; Schultz *et al.* 2001; Mostow *et al.* 2002) and Smith and Walden (1999) showed that, whilst both maltreated and high-risk children matched for verbal ability were poorer at recognizing line drawings of facial expressions when compared with typical control children, all group differences disappeared once differences in verbal ability were accounted for.

The findings of Camras and colleagues, During and McMahon (1991), and Smith and Walden (1999) also suggest that there is a high degree of continuity in the recognition of emotional facial expressions between maltreated and non-maltreated children. Specifically, these studies reported that maltreated children, despite performing at a lower overall level, differentiated between facial expressions in the same way as non-maltreated children (e.g. Camras *et al.* 1988; Smith and Walden 1999). Thus, even though children found some emotion judgement harder than others (e.g. masked negative emotions were harder to identify than simple facial expressions (Camras *et al.* 1988)), response patterns were not affected by maltreatment status. Continuity in patterns of responding between maltreated and non-maltreated children strongly suggests that maltreated children are delayed in their recognition rather than deviant or deficient in any specific manner. Additional support for this conclusion comes from Camras *et al.* (1988), who compared the relationship between children's ability to pose emotional expressions and their recognition of emotional expressions. They found a robust correspondence and a very similar pattern between the two capacities for maltreated and non-maltreated children.

The only qualitative discontinuity to surface between maltreated and non-maltreated children in this literature emerged in the analysis of children's errors (Camras *et al.* 1990): Camras *et al.* (1996) reported that maltreated children were more likely to make anger misattributions (27 per cent) than non-maltreated children (18 per cent). Whilst this trend was non-significant, it resonates with more recent research showing that older maltreated children (6–12 years of age) have significantly different levels of event-related brain potential activation specific to angry faces (Pollak *et al.* 2001) and they are quicker to recognize degraded facial expressions depicting anger than their non-maltreated counterparts (Pollak and Sinha 2002).

In sum, there is ample evidence that maltreated children perform more poorly than non-maltreated children in the recognition of emotional expressions, in particular facial expressions. For the most part, such recognition deficits are

consistent with delayed development along a normative trajectory. Where maltreated children may differ qualitatively from their non-maltreated counterparts is in their readiness to perceive or attribute anger; this bias possibly derives from their hyper-vigilance to aggressive stimuli (Rieder and Cicchetti 1989) and may relate to their proclivity to attribute hostile intentions within ambiguous situations (Dodge *et al.* 1995).

### Maltreatment and socio-cognitive understanding

At least four separate research groups have documented delayed EU in maltreated young children (Frodi and Smetana 1984; Rogosch *et al.* 1995; Smith and Walden 1999; Pears and Fisher 2005). All these studies employed EU tasks in which children had to appreciate the external aspects or situational determinants of emotion (see section 12.3.1). Two studies are notable in that they were conducted on a small scale but provided excellent control groups; including demographically and intellectually matched control children as well as typical children (Frodi and Smetana 1984; Smith and Walden 1999). In both studies, maltreated children performed very similarly on the EU tasks to the intellectually and socially matched controls. Whilst typical control children performed at a higher level on EU tasks, all group differences in performance disappeared once children's verbal abilities were accounted for. In contrast with the findings of these two small-scale studies, the results presented by Pears and Fisher and by Rogosch *et al.* indicate that maltreatment may have a negative influence on EU even when differences in intellectual ability have been statistically accounted for. These latter studies were conducted with larger samples but did not have intellectually and demographically matched controls, and so it is difficult to ascertain whether the findings reflect the unique influence of maltreatment on EU or whether group differences would disappear if suitable matched control groups were obtained.

Two of the aforementioned studies also analysed whether children's sensitivity to specific emotions differed as a function of maltreatment status (Smith and Walden 1999; Pears and Fisher 2005). Results from both studies revealed that maltreated children did not exhibit any particular pattern of deviance or specific deficits. Therefore, although maltreated children may have lower levels of EU, there is relatively little evidence that the link between maltreatment and EU should be conceptualized in qualitatively different terms to normal children with poor EU, except insofar as it is likely to be only one of many negative ramifications stemming from maltreatment.

Regarding ToM understanding, two studies have recently documented poorer performance by maltreated children (Cicchetti *et al.* 2003; Pears and Fisher 2005). The study by Cicchetti *et al.* employed a large and socially

diverse sample of children aged between 3 and 8 years, and provides good evidence that maltreated children are at a considerable disadvantage in their understanding of other minds. However, it is unclear whether the deficits experienced by maltreated children result from maltreatment *per se* or whether they are a function of the broader intellectual delays experienced by many maltreated children. Despite the compelling link between linguistic competence and ToM (Peterson and Siegal 2000; Astington and Baird 2005), neither investigation employed a straightforward control for verbal ability, although such a measure was available. Cicchetti *et al.* (2003) used a comprehensive composite index of children's verbal mental age (VMA) to restrict their sample; they only examined the relationship between maltreatment and ToM understanding in children with VMA > 48 months. This decision was based on the analyses of Jenkins and Astington (1996) who showed, using a small sample, that children with a VMA < 49 mo did not have the requisite verbal skills to pass ToM tasks. Notwithstanding the merits of the cautious approach adopted by Cicchetti *et al.*, Jenkins and Astington in fact argued that VMA continues to be relevant for ToM understanding *beyond* a VMA of 48 months. However, Cicchetti *et al.* did not examine whether VMA explained differences in ToM understanding between maltreated and non-maltreated children within their restricted sample despite robust negative correlations between maltreatment status and VMA. Pears and Fisher (2005) measured both verbal and performance IQ but, unfortunately, used a composite measure of general IQ in their analyses. Therefore it is possible that the relation between maltreatment and EU may have been further attenuated (and possibly non-significant) if only the verbal IQ index was employed in the analyses.

To summarize, young maltreated children have poorer EU and ToM understanding than their non-maltreated counterparts but it is far from clear whether these deficits are particular to the experience of maltreatment. When maltreated children are compared with carefully matched control groups, which seems to be a prudent research strategy given the profound range of developmental challenges facing them, there is little evidence of maltreatment-specific EU deficits. Thus the impact of maltreatment on children's socio-cognitive understanding is likely to be mediated by the mechanisms outlined earlier in this section, i.e. linguistic development and restricted access to causally coherent psychological discourse.

#### 12.4.4 Implications

This brief discussion illustrates that children's understanding of mind and emotion is closely linked to their linguistic abilities and conversational environments, and it also alerts us to the possibility that other qualitative

aspects of their close relationships may be of significance. When making links between EU and developmental psychopathology, it is important to keep these findings in mind. The co-occurrence of EU deficits and distinctive patterns of emotional or behavioural disturbance, for example, need not imply that the former is in any way conceptually linked with the latter. As we have seen in this section, deficits in EU could arise because of delays in linguistic development or restricted opportunities for social interaction. For example, Cook *et al.* (1994) identified young primary school children who had high or moderate levels of disruptive behaviour problems and showed that these children also had relatively poor understanding of their own emotional experience and the cues for recognizing basic emotion. However, in a similar vein to the maltreatment literature, when intellectual functioning was statistically controlled for, the association between EU and disruptive behaviour reduced dramatically.

In sum, when studying EU in the context of developmental psychopathology, differences between disordered and non-disordered groups, such as relative delays in reaching normative milestones or distinctive patterns of deviation, should be interpreted with caution. Before specific links are made between a given childhood disorder and EU, more commonplace explanations for children's performance on EU assessments, such as poor linguistic development or social exclusion, deserve attention. Whilst these latter factors may be a direct consequence of the disorder or the factors bringing it about, their influence on EU can probably be understood within a normal developmental framework. However, if distinctive patterns of EU can be reliably linked to a specific childhood disorder, and this association cannot be accounted for within a normal developmental framework, it is plausible that such distinctive patterns of EU will provide an important window on the developmental history of the disorder and, potentially, a basis for ongoing maladaptive child behaviours: A readiness amongst maltreated children to perceive or attribute anger in facial expressions and ambiguous situations may be a case in point. From the child's point of view, of course, the reasons for delayed or deviant EU may be of less importance than the fact that the child's EU differs in significant ways from his/her age-mates; assuming that children rely on their socio-cognitive understanding to make sense of complex social situations, delay or deviance relative to peers is likely to carry a heavy price. Therefore, in the following section, we explore the empirical relations between children's EU and their social integration with peers.

#### 12.5 Children's emotion understanding and their socio-emotional competence

In this section, close attention is directed to links between children's EU and their socio-emotional competence. Although we focus on EU, we also draw on

recent research seeking to link individual differences in ToM understanding and children's social competence. By choosing the term 'competence', we are casting a broad net in the hope of establishing normative relations between socio-cognitive understanding and children's socio-emotional functioning along many dimensions (e.g. prosocial behaviour, friendship maintenance, aggressive behaviour, etc). Such normative developmental relations or trajectories are useful on various fronts for research on developmental psychopathology. For example, they illustrate and contextualize critical developmental-stage-relevant skills. They also provide an empirically grounded backdrop against which more searching questions about the development of various psychopathologies can be scrutinized.

Therefore we examine whether EU influences children's socio-emotional competence with peers, whether this relationship is direct or mediated by other factors (e.g. children's verbal abilities), and whether this relationship is specific to EU or is a more general feature of children's psychological understanding of persons. We break up our discussion along thematic lines: first we address positive and then negative manifestations of socio-emotional competence. Because of space limitations, we do not address gender differences in this discussion.

### 12.5.1 Positive manifestations of socio-emotional competence: prosocial behaviour and likeability

The work of Dunn and her colleagues has repeatedly emphasized links between children's socio-cognitive understanding and the quality of their friendship interactions (Youngblade and Dunn 1995; McGuire and Dunn 1997; Hughes and Dunn 1998; Dunn and Cutting 1999). One study of particular note (Dunn and Cutting 1999) compared the influence of ToM understanding, two indices of EU (Cassidy *et al.* 1992; Denham 1986), and verbal competence on the quality of children's friendship interactions between 3 and 4 years of age. By and large, results showed that better performance in all these domains increased the occurrence of children's cooperative pretend play, but it was not possible to tease apart the relative contribution of each.

Does this same pattern of influence, observed within friendship pairs, hold for young children's prosocial behaviour? Broadly speaking, prosocial behaviour is an index of children's voluntary positive overtures and interactions which benefit others within their social environment (Eisenberg and Mussen 1989) and it is also, implicitly or explicitly, a reflection of their ability to establish harmonious or cooperative peer interactions. Prosocial behaviours typically depend on children's understanding or interpretation of current circumstances, and therefore many authors have reasoned that EU will influence children's

ability to act in a prosocial manner (Iannotti 1985; Denham 1986; Denham *et al.* 1990; Garner *et al.* 1994). Investigations of prosocial behaviour have revealed that it is a highly contextually dependent construct, and so generalizations should be made cautiously (e.g. Iannotti 1985; Rose-Krasnor 1997). Nevertheless, evidence has accumulated over many years to suggest that higher levels of EU promote young children's prosocial behaviour and also their acceptance and popularity with peers (Denham 1986; Denham *et al.* 1990, 2002; Cassidy *et al.* 1992; Garner *et al.* 1994; Izard *et al.* 2001).

Two early studies are particularly notable because they allow a comparison of the relationship between children's EU, their perspective-taking abilities in a non-emotional context (which were similar to more contemporary notions of ToM), and prosocial behaviours (Iannotti 1985; Denham 1986). Denham's results (for children aged 2–3 years) and Iannotti's results (for children aged 4–5 years) both indicated that only EU was a reliable correlate of children's prosocial behaviour. A feature of Denham's findings deserves emphasis: there was impressive continuity between children's performance on the EU and cognitive perspective-taking tasks, but only EU was closely linked with children's positive social behaviours. Whilst open to different interpretations, the cross-sectional findings presented by Denham (1986) and Iannotti (1985) indicate that children who are better able to take the emotional perspective of another person are also more likely to initiate and engage in prosocial behaviour in various contexts.

More recently, Denham *et al.* (1992, 2002), Cassidy *et al.* (1992), and Garner *et al.* (1994) have all examined the influence of EU on children's popularity with peers or 'likeability'. Insofar as it is possible to summarize across these four studies, the association between children's EU, their social competence, and their likeability has mostly been upheld: greater EU was associated with increased likeability both concurrently and, to a limited extent, longitudinally (Denham *et al.* 1990). The results presented by Denham *et al.* (2002) deserve mention because they did not find robust concurrent association between EU and children's social competence—a pattern which deviates considerably from the literature reviewed here. Nevertheless, they did show that children's EU between 3 and 4 years of age ( $time_1$ ) predicted their social competence between 4 and 5 years of age ( $time_2$ ), controlling for continuity in children's social competence between  $time_1$  and  $time_2$ .

The findings summarized above highlight the importance of EU for children's prosocial behaviour and their likeability, even when other aspects of their emotional regulation and their parent's emotional expressivity have been accounted for (Denham *et al.* 1990; Cassidy *et al.* 1992). Do such findings also hold when children's verbal abilities are taken into account? Several recent

studies speak to this important issue (Izard *et al.* 2001; Schultz *et al.* 2001; Mostow *et al.* 2002; Cassidy *et al.* 2003). Cassidy *et al.* replicated the positive association between children's EU and their prosocial behaviours at ages 3–5 years, but found that these associations fell away dramatically once children's verbal abilities were taken into account. The findings of Izard and his colleagues, in contrast, tell a different story. In two longitudinal studies, one started when children were 5 years of age (Izard *et al.* 2001) and one started when children were 7 years of age (Mostow *et al.* 2002), they showed that EU was a better longitudinal predictor of children's social skills than their verbal abilities, despite robust correlations between the two domains. Social skills was comprised of three subscales from the Social Skills Rating System (SSRS) (Gresham and Elliott 1990): cooperation, assertion, and self-control. The social skills index resembles other measures of children's prosocial behaviour.

Inconsistencies between research groups regarding the independent influence of EU on children's positive social behaviours may turn, to some extent, on the age group of children examined. The findings of both Dunn and Cutting (1999) and Cassidy *et al.* (2003), with children aged 3–5 years, speak to the joint influences of linguistic competence and EU on children's positive social behaviours. Contrastingly, in older samples (Izard *et al.* 2001; Mostow *et al.* 2002), there is clearer evidence for the specific influence of EU.

Additional evidence for this conclusion comes from research with maltreated children. Recall the findings of Rogosch *et al.* (1995), who documented an independent and negative association between maltreatment and EU (see section 12.4.3). This study was notable in that the authors explored longitudinal relations between early maltreatment, EU at approximately 6 years of age, and social competence at 8 years of age. Regarding physically abused children, a history of maltreatment predicted social isolation at 8 years of age. However, physical abuse also predicted EU (controlling for verbal ability), and EU, in turn, was a robust predictor of both maltreated and control children's social isolation from peers (controlling for verbal ability). In fact, EU mediated the association between physical maltreatment and isolation from peers. In these analyses, EU indexed children's understanding of the situational determinants of sad and angry emotions. When viewed in conjunction with the findings of Izard *et al.* (2001) and Schultz *et al.* (2001) (see above), these results support the wide-ranging conclusion that higher levels of EU between five and six years of age facilitate children's social integration and friendship maintenance.

Finally, recall the findings of Denham (1986) and Iannotti (1985) which placed EU, rather than non-emotional perspective-taking abilities, at the fore-

front of children's socio-emotional competence. More recently, at least four studies have shown that superior ToM understanding is in fact associated with greater socio-emotional competence. Measures included teacher reports of positive social behaviours involving a mentalistic dimension (e.g. cooperative play or make-believe) among 3-year-olds (Lalonde and Chandler 1995), social preference and popularity amongst 3- to 6-year-olds (Slaughter *et al.* 2002; Cassidy *et al.* 2003), teacher ratings of social skill and popularity among 3- to 6-year-olds (Watson *et al.* 1999; Cassidy *et al.* 2003), and observer ratings of children's positive social overtures, interactions, and sensibilities among 3- to 5-year-olds (Cassidy *et al.* 2003). However, when the effects of verbal ability were taken into account, the strength of the association between ToM understanding and socio-emotional competence diminished (Watson *et al.* 1999), in some cases profoundly (Cassidy *et al.* 2003), or disappeared altogether (Slaughter, Dennis and Pritchard 2002). This overall null finding is supported by research with Spanish children aged 4–6 years (Badenes *et al.* 2000).

Therefore, on current evidence, there is a more compelling association between EU and children's socio-emotional competence than ToM and their socio-emotional competence, particularly for children between 5 and 6 years of age. However, this conclusion is not unproblematic; there are significant procedural variations that make the extant literature very hard to integrate. We return to this discussion below in section 12.5.3. In the next section, we consider the ways in which children's EU relates to their experience of conflict and aggression, and to hard-to-manage behaviours.

### 12.5.2 Manifestations of poor socio-emotional competence: conflict, aggression, and hard-to-manage behaviours

We have shown above that there are reasonable grounds to conclude that more advanced EU promotes children's socio-emotional competence. In this section, we first examine the role of children's EU in their management and resolution of conflict, and then ask whether children's EU is likely to exert an influence on negative social behaviours with peers, such as aggression.

Dunn and Herrera (1997) present a rare insight into the antecedents of young children's management and resolution of conflict with friends. Their analysis derives from a sample of 50 second-born children observed and assessed extensively between 33 months and 6 years of age (Dunn *et al.* 1991b, 1995). Drawing on this rich database, Dunn and Herrera explore the influence of relationship-specific patterns of conflict management (child–mother and child–sibling), EU, and ToM understanding on children's naturally occurring conflicts with friends. Summarizing across this impressive investigation,

mothers and siblings who at earlier time points were more sensitive to the child's point of view promoted an interpersonal style in the child characterized by avoidance of direct conflict and active attempts to resolve conflicts with friends. The overall picture of familial conflict management and resolution corresponded nicely with the longitudinal influences of children's socio-cognitive understanding; for example, when involved in conflict with a friend at 6 years of age, children who had higher levels of EU at 40 and 67 months were less likely to use threats, whereas those with better ToM performance at 47 months were more likely to seek clarification of the other person's point of view. In sum, children treated as independent psychological agents within the family and children having greater psychological insight were more likely to negotiate conflicts in ways that minimized the opportunity for aggression and maintain amicable friendship relations. Furthermore, it seems that children's socio-cognitive understanding is more closely tied to their management and resolution of conflict than its frequency of occurrence; at least in young and relatively *typical* children's friendship interactions (Dunn and Cutting 1999).

The careful observational work of Dunn and colleagues opens a window on children's management and resolution of conflict, and it tells us a great deal about the ways in which children can maintain their friendships. Given the central position of EU in their findings, we might also expect that children who engage in high levels of aggressive behaviour or meet hard-to-manage criteria might have lower levels of EU. Whilst some findings suggest that deficits in EU might play a role in such maladaptive behaviour patterns, albeit a minor one (Cook *et al.* 1994; Hughes *et al.* 1998; Denham *et al.* 2002), others report no significant influence of EU (MacQuiddy *et al.* 1987; Hughes *et al.* 2000, 2001). Furthermore, factors which have come to prominence in explaining aggressive and hard-to-manage behaviour, such as executive function, effortful control, and linguistic ability (e.g. Hughes *et al.* 2000; Olson *et al.* 2005), were not accounted for in some of those studies suggesting a role for EU (e.g. Denham *et al.* 2002). In sum, the evidence linking EU deficits to young children's aggressive or hard-to-manage behaviour is poor at best. However, there is reasonable evidence that such behavioural patterns are linked to a preoccupation with anger, the attribution of hostile intent, and violent fantasy throughout childhood (e.g. Jenkins and Greenbaum 1999; Dunn and Hughes 2001; van Tijen *et al.* 2004).

### 12.5.3 Synthesis

One of the most remarkable features of this literature is its heterogeneity. Barely two studies are directly comparable because of methodological and procedural differences. Nevertheless, persistent associations between EU, ToM, and children's socio-emotional competence suggest that this is an important domain of study; particularly because the formation and maintenance of friendships constitute such an important part of children's adaptation to the social world (Gottman 1983; Ladd and Kochenderfer 1996), and in light of the long-term risks facing children who are isolated, rejected, and withdrawn (e.g. Kupersmidt *et al.* 1990; Rubin 1993; Nangle *et al.* 2003). How, then, can we put some order on this mixed collection of findings? Below we attempt a synthesis of the literature reviewed above in sections 12.4, 12.5.1, and 12.5.2, and we discuss some outstanding empirical and theoretical issues.

The research presented above gives EU an important role in the development of young children's prosocial behaviour and their likeability. Furthermore, at least two independent studies suggest that EU mediates or accounts for relations between the family emotional climate and positive manifestations of children's socio-emotional competence with their peers (Cassidy *et al.* 1992; Garner *et al.* 1994). To a lesser extent, children's ToM understanding has also been associated with prosocial behaviour and likeability, but it is unclear whether the influence of ToM understanding can be differentiated from verbal competence. Thus, in conjunction with the overview presented in section 12.4, a viable and intuitive story about the role of socio-cognitive understanding begins to emerge: Certain socialization practices, such as mothers' causally coherent psychological discourse and children's verbal abilities, support the elaboration of psychological understanding, and this understanding, in turn, equips children to respond increasingly sensitively and appropriately to complex social interactions with peers and cultivate good relationships. This conclusion is reminiscent of the positive association documented by Underwood and Moore (1982), in their major meta-analysis, between children's perspective-taking abilities and altruism. Children's sensitivity to and understanding of emotion may have particular salience for their socio-emotional competence, although the reason for this is not yet clear. Furthermore, antisocial or aggressive behavioural patterns may cut across children's social interactions but they do not appear, on current evidence, to be a function of poor EU. Admittedly, the empirical basis of this story is not watertight, but research from various perspectives suggest that it is plausible. Three aspects of this story also deserve close scrutiny. We take these up below.

First, it is possible that the relationship between socio-cognitive understanding and socio-emotional competence is mediated by some other variable. The most obvious candidate is children's linguistic abilities, which have been linked with both positive and negative manifestations of socio-emotional competence (e.g. Putallaz 1983; Hughes *et al.* 2000; Cassidy *et al.* 2003), as well as their socio-cognitive understanding (e.g. Harris *et al.* 2005). The role played by children's linguistic abilities is still far from clear, but at least two findings with children aged 5–9 years suggest that the longitudinal impact of EU on social skills is more profound than the impact of verbal abilities (Izard *et al.* 2001; Mostow *et al.* 2002). Therefore a certain level of verbal competence may be a necessary, but not a sufficient, condition for children to enact their prosocial behaviours and interventions.

Secondly, the possibility that EU, rather than cognitive perspective-taking abilities or ToM understanding, has a unique influence on children's prosocial behaviour and likeability needs clarification. In teasing apart the influences of these closely related domains, various possible explanations present themselves. Regarding measurement, there are typically discrepancies between EU and ToM. With young children, EU assessments tap into substantial variability in performance: ToM assessments are rarely so comprehensive. Regarding validity, EU tasks often ask children to think about situations that have transparent relevance to their own everyday social interactions. However, it is also possible that EU and ToM tasks may access fundamentally different abilities despite the considerable overlap frequently documented between them (see section 12.3.1). For young children in particular, it is possible that better knowledge of emotional expressions makes a unique contribution to their positive social behaviours (Izard 1971). In fact, there exists reasonable evidence that skills in decoding, and to a lesser extent producing, emotional expressions are linked with positive social behaviours and popularity in younger and older children (Edwards *et al.* 1984; Custrini and Feldman 1989; Walden and Field 1990; Boyatzis and Satyaprasad 1994; Izard *et al.* 2001). ToM assessments do not generally draw on children's understanding of expressive behaviours and it is plausible that this is one of the lines along which they cleave with EU assessments in explaining socio-emotional competence (Cutting and Dunn 1999).

Finally, the influence of socio-cognitive understanding on children's socio-emotional competence is likely to shift with development. As we have already noted, it is generally assumed that EU allows children to read and respond to complex social situations *in vivo*. Our own reading of the literature is that this account is very plausible for children until about 5 or 6 years of age; even once linguistic competence has been accounted for. For these young children, the

data testify to considerable concurrent relations between EU, prosocial behaviour, and likeability (e.g. Denham *et al.* 1990). However, as children become older, their social interactions are likely to be increasingly influenced by their history of previous interactions. The implication is that measurements of likeability in young children will be more sensitive to their current level of prosocial behaviour and EU when compared with older children. However, as children become older, their social 'track-record' probably takes on more significance. Thus their repertoire of social skills will be increasingly dependent on their previous interactions, and peer perceptions of a given child are likely to be more stable. In keeping with this overall analysis, Mostow *et al.* (2002) showed that, between about 7 and 8 years of age, children's social skills were very stable indeed and, furthermore, mediated the relationship between EU and likeability. Nevertheless, even in this older group, EU predicted social skills but the reverse relationship did not hold. Also as children become older, the relative importance of their knowledge about emotional expressions is likely to diminish as their explicit capacity to reason about psychological states and motives blossoms (e.g. Schultz *et al.* 2001; Slaughter *et al.* 2002).

In this section, we have seen that children's EU supports their prosocial behaviour, friendship maintenance, and likeability. Maltreated children, who are often delayed in their understanding of mind and emotion, struggle to maintain friendships in terms of both their management of interpersonal conflict and their tendency to become withdrawn from and avoid peer interactions (reviewed by Cicchetti and Toth 1995). Thus the development of EU has clear relevance for developmental psychopathology.

## 12.6 Future directions

In this chapter we have given an account of young children's EU with a view to thinking about developmental psychopathology and further studying emotional disturbance in childhood. We have tried to emphasize that EU cannot be viewed as an isolated phenomenon (Harris 1994). Although the basic relations underpinning EU are part of a shared folk psychological explanatory framework, EU emerges in the context of children's personal emotional histories and social interactions, and is constrained by their ongoing cognitive development. However, a focus on EU reminds us that children are actively seeking to make sense of their own and others' emotional experiences from a very young age (Bretherton *et al.* 1981). The finding that EU is associated with and predicts children's socio-emotional competence should direct our attention to the fact that task-based indices of EU are a proxy index of children's capacity to appropriately read and respond to

complex social situations. Therefore it follows that children who have not reached age-appropriate milestones in their EU or have distorted conceptions of emotion are at risk of being poorly synchronized with their peers. Throughout this chapter, we have attempted to synthesize and draw out the implications of what is a complex literature concerning young children's EU. We have provided conclusions along the way and do not recapitulate them here. Instead, we present two perspectives for future research that extend from our discussion above.

First, we return to the persistent issue of children's knowledge of emotional expressions and its link with more wide-ranging notions of EU. In surveying the literature in sections 12.4 and 12.5 we were struck by the fact that associations between EU and socio-emotional competence may rest, to some extent at least, on children's ability to recognize and label emotional expressions, despite the fact that other aspects of young children's EU are commonly emphasized (e.g. situational determinants) (see sections 12.3.4 and 12.4.3). One possible interpretation of such findings is that children's knowledge of emotional expressions taps into their empathic sensitivity. The problem in likening emotion expression knowledge to empathy is that the empathy construct typically captures both sensitivity to the contextual salience of others' emotional expressions and, crucially, a desire, willingness, or ability to intervene (Hoffman 1982; Zahn-Waxler *et al.* 1982, 1992). However, this latter feature of the empathy construct means that it is grounded in social conduct. Therefore in future research it may be productive to examine children's empathic arousal to others' emotions (Hoffman 1982; Zahn-Waxler *et al.* 1995; Strayer and Roberts 2004), rather than their recognition of emotional expressions in isolation, and to ask how the recognition—arousal relation interacts with EU to inform children's actions. In order to discover how children come to enact increasingly sophisticated prosocial behaviours or why they fail to do so, an experimental approach that emphasizes recognition of emotional expressions in conjunction with children's motivation to act and their burgeoning conscious understanding of emotion may prove very powerful.

Secondly, in section 12.3.1 we noted that there is *décalage* between children's experience of emotion and their EU; for example, children feel surprised before they understand how surprise functions (Izard and Harris 1995). In fact, children's capacities to understand the causes and consequences of emotion and to think about emotion—environment relations undergoes dramatic elaboration throughout childhood. The consequence is that, with development, children stand in a fundamentally different relation to the emotional interactions they encounter. The significance of children's changing

mental attitude to their emotional environments has been eloquently described by Vygotsky (1995) in his dramatic case study of three children referred to the clinic because of maltreatment suffered at the hands of their alcoholic and psychologically disturbed mother. Vygotsky explains how the youngest, middle, and oldest child experienced the punitive and disorganizing environment created by her:

[The youngest] experienced it as an inexplicable, incomprehensible horror which has left him in a state of defencelessness. The second was experiencing it consciously, as a clash between his strong attachment, and his no less strong feeling of fear, hate and hostility. And the third child experienced it, to some extent, as far as it is possible for a 10–11 year old boy, as a misfortune which has befallen the family and which required him [...] to try somehow to mitigate the misfortune [...]. (Vygotsky 1995, p. 341)

In this extract we see that the impact of harsh parenting differs dramatically depending on each child's capacity to understand his/her mother's behaviour. Such clinical insights remind us that children's EU helps to structure their experience of interpersonal interactions. By contrast, in the research presented in section 12.5, EU has been treated as a correlate or predictor of children's social behaviours and integration. Whilst the implication is that different levels of EU exert an influence on children's behavioural organization, it is noteworthy that this possibility has not been examined directly. Treating EU as a predictor of prosocial behaviour, for example, has some inherent problems: there is no guarantee that children's level of understanding will translate into predictable actions or even that children bring their understanding to all the situations they encounter. An alternative organizational approach for future research is to explore how EU moderates children's interactions with the environment and affects their interpretations of the situations they encounter (Sroufe 1996). For example, it may be productive to focus less on whether EU correlates with prosocial behaviour and ask, instead, how EU relates to the sophistication of children's social acts, be they prosocial or antisocial. From a clinical point of view, it may also be productive to explore the extent to which developmentally immature modes of understanding emotion persist in salient interpersonal domains, despite the increasing elaboration of EU manifest in other contexts (see mobility of behavioural functions in Sroufe and Rutter (1984, p.21)). Whilst an organizational approach has not been adopted in EU research to date, there are preliminary findings in the ToM literature to suggest that it will be a productive strategy (e.g. Cutting and Dunn 2002; Cahill *et al.* 2007).

To summarize, EU is a dynamic construct despite the fact that it is often treated in empirical research as a given quantity. Developments in children's EU necessitate and afford opportunities for emotional and behavioural

reorganization, and this ongoing process has obvious relevance for the study of emotional disturbance in childhood.

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