# The Role of Co-Regulation for the development of social-emotional competence

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## Abstract

Regulating emotions volitionally requires the inhibition and modification of an elicited emotional action readiness and includes phases of reflection, planning and self-regulation. The proposed internalization model of reflective emotion regulation argues that caregivers' co-regulation of emotionally challenging events plays a constitutive role for the development of 4- to 6-year-olds' reflective emotion regulation. The model specifies the gradual shift from co- to self-regulation by focusing on two important ways how caregivers structure emotionally challenging interactions: Through emotion talk, caregivers promote the development of preschoolers' emotional awareness. Once established, they support children in establishing a repertoire of effective emotion regulation strategies and they guide preschoolers' emerging skills to generate, evaluate, and select from alternative appraisals or behavioral responses.

## Keywords

emotion regulation, co-regulation, self-regulation, emotion socialization, social-emotional competence

# The Role of Co-regulation for the Development of Social-Emotional Competence in Early Childhood

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## 1     Introduction

Social interactions in the family, in preschool and in other early childhood settings offer a wide range of possibilities for preschoolers to obtain and practice competencies in the social-emotional domain: for instance, successfully dealing with peer conflicts by applying problem solving skills or emotion regulation strategies, coping with own emotions, cooperating in joint activities (Denham et al. 2007; Eisenberg et al. 1997; Eisenberg et al. 2004). How do preschoolers acquire social-emotional competencies and how do caregivers contribute to this development? In this paper, we address these questions by emphasizing that caregivers play a constitutive role in the child's social-emotional development, especially by co-regulating emotionally challenging situations. After defining the concept of social-emotional competence, we focus on the role of emotion regulation to children's functioning in social interactions and relationships. Regulating own emotions in a reflective way enables children to satisfy their needs in a socially coordinated and desirable way, which is considered an important developmental task in 4 to 6 year-olds (Holodynski et al. 2013; Sroufe 1996).

We suggest a conceptual model – the internalization of reflective emotion regulation – that proposes a gradual transition from interpersonal regulation (co-regulation) of children's emotions to intrapersonal regulation (self-regulation) of emotions. Assuming that self-regulation of emotions evolves from the co-regulation of emotionally challenging situations through children's caregivers, the mechanisms underlying this developmental shift are addressed. Ideally, this transition proceeds through caregiver-child interactions, which provide children with age-appropriate strategies of emotion regulation. We postulate four specific types of regulation strategies: (1) distraction, (2) reappraisal, (3) soothing, and (4) response modulation. By applying these strategies, caregivers support children's emotion regulatory development proceeding through three developmental levels. In each level, caregivers typically provide particular regulation tools that fit children's developmental status. Initially, caregivers adopt all aspects of emotion regulation. As children get older, caregivers give specific prompts and, finally, use increasingly more metacognitive prompts to support children's self-regulation of emotion. Based on this model, we will discuss potential directions for future research.

## 2    Social-emotional competence and emotion regulation

Social-emotionally competent behavior is characterized by two aspects: First, *social competence*, which manifests itself in effectiveness in social interactions, characterized by a given individual's ability to meet personal needs while maintaining positive relationships with others. Second, *emotional competence,* which manifests itself in emotional expression that is accepted in a given culture, a reflective understanding of own emotions and those of others, and an effective emotion regulation (Rose-Krasnor/Denham 2009). In early childhood, remarkable achievements take place in the realm of social-emotional development that parallel the increasing challenges associated with social interactions at different ages (Saarni 1999).

Following a transactional, multilevel model of social-emotional competence (Rose-Krasnor/Denham 2009), effectiveness in social interactions – characterized by positive engagement with peers and appropriately regulated emotions – is considered to be an important developmental task. Different skills and motivations contribute to managing one's own and others' needs in social interactions. These underlying skills of social-emotional competence include self-regulation, social and emotional awareness, perspective taking, social problem-solving, as well as empathy and prosocial behavior. In this paper, we focus on *emotion regulation* for mainly two reasons; First, because of its relevance for functioning well in social interactions and peer-relations; Second, because of its association with major developmental changes in the preschool period. Several studies have shown that emotion regulation has important implications for the general psychosocial adaptation and the acquisition of social skills (e.g. Calkins/Howse 2004; Eisenberg et al. 2000; Sroufe 1996). Appropriate emotion regulation leads to a decrease in maladaptive behavior (Denham/Burton 2003; Izard 2002; Raver 2004). Considering social behavior, children with higher competencies in emotion regulation behave socially more appropriate and have fewer conflicts with peers (Denham et al. 2007; Eisenberg et al. 1997; Spinrad et al. 2006), while children with difficulties in emotion regulation show increased aggressive behavior and externalizing problems (Eisenberg et al. 2000).

In the literature, the concept of emotion regulation has been defined in multiple ways. In a broader sense, every action associated with the modification of emotions could be seen as emotion regulation (Thompson 1994). However, from a developmental perspective, we find it critically important to distinguish the regulation *by* emotion from the regulation *of* emotion (Gross/Thompson 2007; Holodynski et al. 2013). Both constitute developmental achievements during children's development, but occur at different ages. Regulation *by* an emotion refers to an action readiness that is inherent to the emotion itself (Frijda 1986), e.g. the avoidance of gaze in situations of (social) over-stimulation or fleeing in situations of fear. This process develops relatively early in ontogeny, and will, in the following, be referred to as the *emotional regulation of actions* (Holodynski/Friedlmeier 2006). Regulation *of* an emotion, mostly defined as the 'extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to achieve one's goal' (Thompson 1994: 27), refers to

situations when the individual first experiences an emotion and then tries to regulate it, e.g. the avoidance of gazing at an attractive gift in a situation that requires the delay of gratification. Thus, the emotion and its associated action readiness is no longer the motivating force of behavior, but the target process that becomes regulated. In this case, emotion regulation is based on the volitional inhibition or modification of an elicited emotion so that the dominant action readiness of an emotion is not enacted but replaced by a subdominant behavioral alternative (Campos et al. 2004; Holodynski et al. 2013).

This form of emotion regulation requires a series of sophisticated higher-order competencies, most importantly taking a psychological distance from one's own emotions and applying self-regulation strategies (i.e. executive functions) in order to volitionally inhibit and modify emotional experience of behavioral inclinations in terms of situational demands. These competencies have been addressed within the concept of hot executive functions (Zelazo et al. 2010). In the following, this process will be referred to as *reflective emotion regulation* (Holodynski et al. 2013), which is the main focus of this article.

Typically, reflective emotion regulation is needed in contexts that require the individual to delay the satisfaction of a given motivation, or to decide among conflicting motives either within or between individuals. Viewed within a broader developmental framework, reflective emotion regulation can be considered as one dimension of a broader self-regulatory system integrating a series of psychological functions, such as motivation, perception, volition, and goal-directed behavior (Campos et al. 2004; Gross/Thompson 2007; Zelazo et al. 2008). To coordinate these functions effectively and autonomously is critical for behavioral adjustment and constitutes a primary developmental achievement. In this sense, self-regulation of emotions comprises the application of these functions to one's own emotions. Achieving self-regulation of emotions refers to those components of reflective emotion regulation that the child is able to perform without the support of others. In the following sections, we will address the question of how self-regulation of emotion develops, and which factors contribute to this development. We especially draw attention to the constitutive role of caregivers supporting this development.

## 2.1    The constitutive role of co-regulation for child development

Vygotsky's socio-cultural perspective suggests that higher psychological functions such as thought or language are culturally shaped. They develop in social interactions (Vygotsky 1997/1931). Development proceeds from an *inter*personal regulation of behavior and underlying psychological processes to an *intra*personal regulation of these processes. Social interactions with caregivers are significant because caregivers provide culturally rooted tools that are internalized as mental functions in the course of development. Ideally, caregivers operate in the *zone of proximal development*. Vygotsky (1998) suggested that children may function at two different levels: First, the actual level of development, referring to the level at which a child functions without support, i.e. by him- or herself. Second, the proximal level of development, referring to the level at which children function when scaffolded by a more competent partner. Through providing physical and psychological

tools in interactions, caregivers help children to advance their actual level of development. These general principles can similarly be applied to the development of emotions and emotion regulation. Both developments can be explained as a shift from interpersonal regulation (co-regulation) to intrapersonal regulation (self-regulation; Holodynski et al. 2013; Sroufe 1996).

## 2.2 The role of co-regulation in emotional development

According to the internalization model of emotional development, infants initially possess precursor emotions that need to be regulated interpersonally (Holodynski/Friedlmeier 2006; see also Calkins/Hill 2007; Sroufe 1996). More specifically, before infants integrate the components of an emotion (i.e. appraisal, physical reaction, expression, and feeling) and their contextual embedment (i.e. cause, action) into a fully functioning system, caregivers co-regulate the infant's emotional behavior and experience.

In this co-regulatory process, the rudimentary and unfocused infant expressive behavior becomes refined into a differentiated, contextually fine-tuned repertoire of expressions and their related emotions, for instance by the caregiver's monitoring and mirroring of the child's affect-expressive behavior (Bennett et al. 2005; Gergely/Watson 1999; Holodynski/Friedlmeier 2006; Malatesta/Haviland 1982; Schore 1994; Sternberg/Campos 1990). During this phase, the regulation *by* emotion, i.e. the *emotional regulation of actions* is shared between child and caregiver: Caregivers respond to infants' emotions by interpreting their expressive behavior as an appeal for satisfying certain needs. Infants' crying, for instance, typically leads caregivers to sooth them. Children learn about these contingencies, and internalize them. As a result, caregivers' co-regulation efforts decrease whereas self-regulation skills develop gradually (Sroufe 1996). Caregivers support this process by encouraging children to perform motive-serving actions themselves instead of performing these actions for their child, and, in tandem, children less often appeal to their caregivers. As a result, children show the motive-serving behavior more often, for instance, by comforting themselves. Conceptually, the function of children's expressive behavior shifts away from appealing to caregivers towards performing self-regulatory activities (Friedlmeier/Holodynski 1999).

## 2.3 The role of co-regulation in the development of reflective emotion regulation

In the current literature, there are many correlational studies supporting the assumption that primary caregivers also play an important role for their children's development of reflective emotion regulation in at least two important ways: First, caregivers support children in developing emotional awareness. Emotional awareness can be defined as the conceptual awareness of subjective feelings, associated causes, appraisals and consequences of an emotion (Fogel 2009; Teper et al. 2013). Second, once this foundation is laid, caregivers support children in establishing a repertoire of effective emotion regulation strategies (Morris et al. 2007).

### 2.3.1 Establishing emotional awareness

A precondition for reflective emotion regulation is the ability to distance oneself psychologically from a current emotional episode, taking a bird's eye view, in order to evaluate the current episode in terms of causes and consequences (Bischof-Köhler 2000; Giesbrecht et al. 2010; Holodynski et al. 2013; Lyons/Zelazo 2011; Saarni 1999; Teper et al. 2013). Typically, toddlers start labeling emotions in their second year, they relate emotions to specific situations in their third year and their naïve theory changes from a behavioral to a more mentalistic understanding of emotions in their fourth and fifth year (Meerum Terwogt/Stegge 1998). Importantly, emotion-related language is the central tool for emotional awareness and distancing and both are related to advanced levels of emotion regulation (Carlson/Beck 2009; Cole et al. 2010; Holodynski et al. 2013; Müller et al. 2009).

One particular way in which caregivers promote this ability in preschoolers is through conversations about emotions, including labeling feelings and relating these to specific causes, appraisals, expressions, behavioral inclinations, and potential ways to regulate emotions (Denham 1998; Morris et al. 2007). This *emotion talk* sensitizes children for inner feelings. It facilitates the development and further differentiation of a *theory of emotion* that can be defined as coherent scripts linking emotional experiences with specific verbal labels, expressions, causes, appraisals, and regulation strategies.

Research has identified a style of parenting characterized by a high use of emotion talk to be associated with developing appropriate emotion regulation capacities (Ellis et al. 2014; Garner et al. 1997; Gottman et al. 1997; Wilson et al. 2014). This style of parenting, linked to parents' appreciation and acceptance of emotions and their regulation, is called *emotion coaching*. Emotion coaching means empathic listening, validating the child's emotions, guiding emotion regulation, and teaching the child problem-solving skills (Gottman/DeClaire 1998). In contrast, a dismissive or disapproving parenting style is linked to avoiding or punishing the expression of negative emotions of the child. These punitive and minimizing responses are associated with lower levels of competence in children's emotion regulation (Denham et al. 2007; Eisenberg et al. 1998; Fabes 2001; Lunkenheimer 2007). While most of this research is correlational, Havighurst and Harley (2007) developed an intervention program that aims at fostering children's emotion regulation competencies via supporting core features of parents' emotion coaching. An evaluation study revealed that the intervention group had lower levels of negative emotionality and problem behaviors as compared to a waiting control group (Wilson et al. 2012). Hence, empirical research indicates that emotion coaching is one central strategy to support the development emotional awareness and the self-regulation of emotions.

On a more general level, there are a number of approaches describing three processes through which caregivers support the development of emotion regulation and emotional awareness (Denham et al. 2007; Eisenberg et al. 1998; Hooven et al. 1995; Morris et al. 2007): (1) Caregivers provide models for competent emotion regulation through their own emotional expressiveness and emotion regulation (*modeling*); (2) *contingent re-*

*sponding* to children's emotions and (3) intentional *teaching* or *coaching* of emotional issues (Eisenberg et al. 1998). While contingent responding refer to caregivers' encouragement or discouragement of children's emotional expressions, teaching and coaching entail caregivers' use of deliberate instructions to help children link expressions, situations, and words into coherent scripts. All three mechanisms are relevant for establishing emotional awareness. Being aware of one's own emotional experience enables the child to achieve the second level of self-regulation of emotion: the acquisition of an effective repertoire of emotion regulation strategies.

### 2.3.2  Establishing a repertoire of emotion regulation strategies.

A large variety of regulation strategies help each one of us to modify our emotions. Examples for such strategies are distraction, reappraisal of the emotion-eliciting event, or positive self-instructions (e.g. Gross/Thompson 2007; Larsen/Prizmic 2004). During the preschool period (i.e. 4 to 6 years of age), children master an increasing repertoire of effective emotion regulation strategies. Early in the second year, a significant developmental achievement consists in social referencing and the self-initiation of interpersonal regulation. Hence, searching for social support is considered as a rudimentary form of self-regulation of emotion (Holodynski 2006). During the second and third year, there is a transition from passive to more active strategies and, as a consequence, the first truly self-regulating strategies emerge, namely distracting oneself from the emotion-eliciting event and self-soothing (Bridges/Grolnick 1995; Calkins/Hill 2007; Friedlmeier/Holodynski 1999; Spinrad et al. 2004). The development of executive functions facilitates managing to inhibit emotional or motivational impulses (Zelazo et al. 2010). Together with normative development that enables children to follow social norms (Rakoczy/Schmidt 2012), children refine their skills to inhibit and transform an emotionally triggered action readiness and to generate alternative ways of responding that allow them to satisfy their needs in socially coordinated and accepted ways. Finally, advances in language and symbolic skills, social cognition and perspective taking (Sodian/Thoermer 2006) allow children to acquire increasingly complex cognitive regulation strategies, as, for example, self-instruction or reappraisal strategies, changing the evaluation in a given situation as well as affective and behavioral responses (Gunzenhauser et al. 2014).

There are four general types of self-regulation strategies that focus on the different components of an emotion: (1) distraction, focused on the elicitor of an emotion, (2) reappraisal, focused on the appraisal component, (3) soothing, focused on the feeling component, and (4) response modulation, focused on the action-readiness component, including expressive and bodily reactions (Gross/Thompson 2007). The four types of self-regulation strategies all emerge during the preschool years (Chen 2015; Morris et al. 2011).

For each of these regulation strategies, a shift from co- to self-regulation can be observed during the first years. Overall, there is a gradual transition from co- to self regulation (Grolnick et al. 1998, Holodynski/Friedlmeier 2006; Kopp 1989). While initially dis-

traction and soothing strategies are adopted by the caregiver, children increasingly apply these strategies themselves (Bridges/Grolnick 1995; Friedlmeier/Trommsdorff 2001; Sroufe 1996). Furthermore, there is initial evidence for a shift from more substitutive strategies (e.g. distraction, soothing) to more instructive and reflective ways of co-regulation (e.g. prompts for reappraisal or response modulation). These age-dependent changes support children's emotion regulation competence concurrently and prospectively (Morris et al. 2011; Putnam et al. 2002, Spinrad et al. 2004). Accordingly, co-regulation through preschool teachers in the day care setting varies with children's age: Whereas responses to toddlers' negative emotions mainly focus on soothing and distraction, preschoolers are often provided with verbal instruction to show self-regulation (Ahn/Stifter 2006).

To summarize, research has demonstrated the important role of caregivers in supporting the development of self-regulation of emotions through emotion coaching and co-regulation in emotion episodes that is well coordinated with a child's developmental level. Building on these grounds, a combination of emotion coaching plus specific ways of co-regulating children in emotionally challenging situations catalyzes children's development of emotional self-regulation. Most approaches share the assumption that emotion regulation shifts from co-regulation by caregivers to self-regulation by the child. It is important to note here that this shift does not occur abruptly but self-regulation gradually emerges from co-regulation of emotions. To our knowledge, there is no elaborated theoretical model that specifies how this shift occurs. To address this issue, we outline a conceptual model that specifies the type and amount of co-regulation that seems optimal and adaptive given the developmental level of the child.

## 2.4     The internalization model of reflective emotion regulation

The internalization model of reflective emotion regulation (see Figure 1) is based on the assumption that children's emotions are initially regulated by their primary caregiver (Sroufe 1996). During the preschool years, children increasingly take over control by internalizing components of reflective emotion regulation. But how does self-regulation of emotions develop? And what are the critical factors contributing to this development?

Imagine a situation in which a child is sad because it forgot the favorite toy at home and now wants to play with it. The caregiver can co-regulate the child's frustration on three general levels. (1) The mother could soothe the child by comforting and/ or she could distract it by initiating another fun game. That means the mother regulates the sadness of her child by carrying out the successful actions on behalf of her child (adopted emotion regulation). (2) The mother could instruct her child to carry out a specific regulation strategy, e. g. a soothing strategy (to take a deep breath) or a distraction strategy (to take an attractive alternative activity that can distract the child from her sadness). Here, the mother does not directly regulate her child's emotion, but instruct a concrete regulation strategy (co-regulation by specific prompts). (3) The mother could encourage her child to reflect the situation and think about possible strategies how he or she could regu-

late his or her frustration (co-regulation by meta-cognitive prompts). These examples illustrate that caregivers can support emotion regulation on different levels of co-regulation that allows a child an increasing self-regulation of his or her emotion.

Following a functionalistic understanding of emotions, an emotion represents an action-readiness that is triggered by an appraisal of an occurring event in motive-relevant terms, in order to change the situation in a way that serves the satisfaction of the person's needs and concerns by showing specific expressions, body-related reactions, and subjective feelings (Barrett 1998). This understanding is in agreement with general functionalistic emotion theories as conceptualized by Frijda (1986), Lazarus (1991) and Scherer (2004). Events are first perceived and evaluated (e.g. a child sees another child eating yummy cookies). Based on this appraisal, adaptive body reactions occur (e.g. salivary production increases), and certain automatic response tendencies emerge (e.g. to approach the cookies). These response tendencies are experienced as sensations or feelings of a given quality (e.g. a sudden craving for cookies). Sensations and feelings lead to motivational states (e.g. to get a cookie), and goal-oriented behaviors (e.g. to walk towards the other child), eventually resulting in a target-directed behavior (e.g. to take a cookie from the plate) (Holodynski/Friedlmeier 2006).

Based on the model of emotion regulation suggested by Gross and Thompson (2007), four different types of emotion regulation strategies can be distinguished and we can specify at which level of processing certain regulation strategies operate in order to shift from the dominant to a subdominant, but more desirable, behavioral response (Figure 1): (a) *Distraction strategies* shift the focus to a new target and thus trigger a new line of consecutive mental processes eventually resulting in a different emotion. In our example, a caregiver might direct the child's attention to an attractive toy to help it forget about the cookie. (b) *Reappraisal strategies* are tailored towards taking a fresh look at the same target, thereby modifying the activation of response tendencies and subsequent processes. In our example, the caregiver could tell the child that cookies are not a yummy as they look. (c) *Soothing strategies* directly address the intensity of experience, including both the intensity of subjective feeling and the physiological arousal, while leaving the elicitor and its appraisal unchanged. In our example, the caregiver could soothe the child by hugging and comforting it. (d) *Response modulation strategies* directly operate on the level of the behavioral inclination and either inhibit the impulse or transform it to a socially acceptable form. Having their main impact on the level of observable behavior, response modulation strategies also include strategies that are tailored towards redirecting more basic behavioral impulses to socially acceptable behavioral responses. In our example, the caregiver could tell the child to politely ask the other child whether it would like to share (see bottom of Figure 1). Thus, many strategies that are often referred to as problem-focused coping (Lazarus/Folkman 1984) are subsumed under response modulation strategies.

The core feature of the internalization model of reflective emotion regulation addresses the "as-yet-unresolved" issue of co- and self-regulation (Gross/Thompson 2007:

8). More specifically, it specifies different levels on which caregivers co-regulate relevant episodes in developmentally appropriate ways by providing tools that fit the developmental status of the child and that can be internalized as self-regulation strategies. From this perspective, development proceeds from an interpersonal regulation of behavior and underlying psychological processes to an intrapersonal regulation of these processes. In her study on maternal meta-emotion coaching in children's self-regulation of negative emotions, Cook (2005) provides evidence for a distinction between a co-regulation that instructs the child to carry out a specific regulation strategy and a co-regulation that encourages more self-reflection and prompts the child to generate and chose an appropriate regulation strategy. This is also in line with the concept of emotion coaching (Gottman/DeClaire 1998) and the proposed strategies on providing the child with psychological tools of self-regulating his or her emotions.

*Figure 1*. The internalization model of reflective emotion regulation
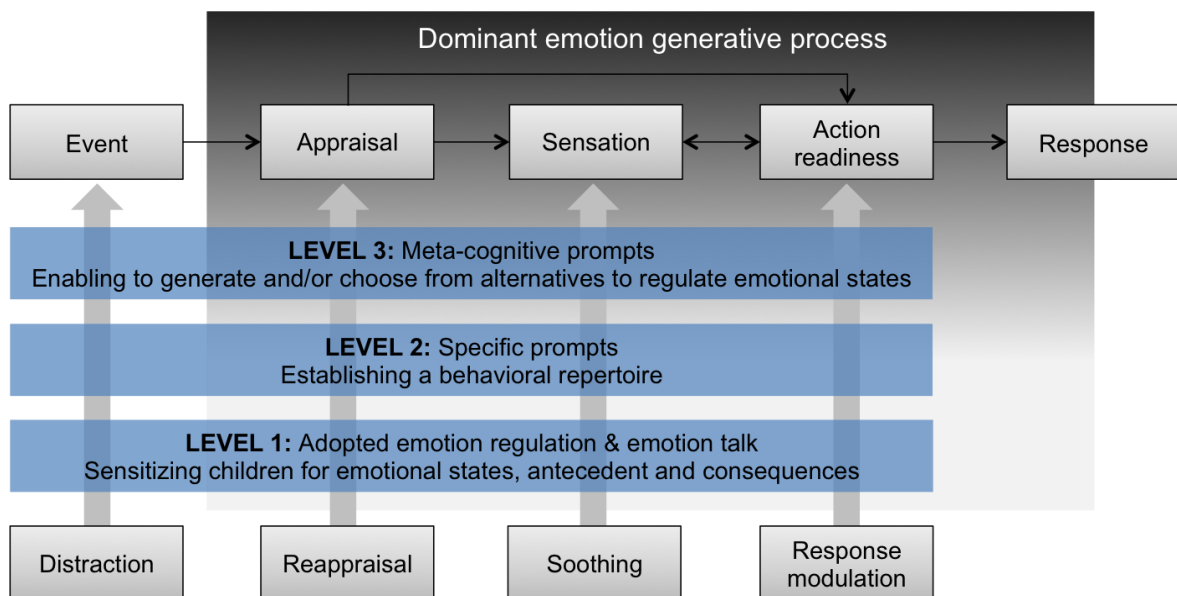


*Source:* own representation

We have adopted this distinction between a type of prescribing co-regulation and a type of meta-cognitively oriented co-regulation and propose the internalization model of reflective emotion regulation. This model is inspired by the internalization model of emotional development (Holodynski/Friedlmeier 2006) and postulates three different levels on which caregivers co-regulate children's emotions and the implications that the specific level of co-regulation has for child development:

Level 1 (*adopted emotion regulation and emotion talk*): Initially, a caregiver adopts all components of reflective emotion regulation without involving the child in any way. Thus, it is the caregiver who decides whether and how an emotion needs to be regulated and it is her who offers help in emotion regulation. Level 1 co-regulation strategies can have their starting points at the event (i.e. distracting the child), at the sensation component (i.e. soothing the child) or at the action readiness component (i.e. inhibiting the child's

impulses). A central strategy is emotion talk: Within talks about emotions between caregivers and children, children get sensitized for internal feeling states, how they are related to causes and consequences in behavioral terms and which emotion regulation strategies could be chosen (Dunn et al. 1991; Morris et al. 2007). Therefore, emotion talk is promotive at all levels of co-regulation, but is of central significance at the first level of co-regulation through supporting the emotional awareness.

Level 2 (*co-regulation thru specific prompts*): At this level, the caregiver instructs the child to self-regulate specific aspects, involving certain strategies of reflective emotion regulation within social interactions. Co-regulation is characterized by providing the child with specific prompts that she or he can apply for regulating her or his emotion without further assistance. Co-regulation strategies can have their primary impact at every point in the emotion generative process. For example, the caregiver might instruct the child to defocus the emotion-eliciting event (i.e. distraction), to take a deep breath (i.e. soothing), to follow a specific rule (i.e. response modulation) or he might provide the child with an alternative look at the situation (i.e. reappraisal). This level helps the child to establish a basic repertoire of effective behavioral routines to regulate emotions. As reported earlier, children's skills to inhibit and modulate emotional impulses refine during the preschool years (Zelazo et al. 2005, 2010). While specific prompts that demand to execute, but not yet to generate, responses as distraction, soothing or socially acceptable behavior responses presumably are applied in the late toddler and early preschool years, specific prompts to reappraise are thought to start later, as cognitive regulation strategies demand symbolic and language skills to change a situation's meaning and lead to affective and behavioral responses in consequence (Sodian/Thoermer 2006).

Level 3 (*co-regulation thru meta-cognitive prompts*): At this level, caregivers use meta-cognitive prompts to transfer further parts of a reflective emotion regulation to the child. As in level 2, co-regulation strategies can have their impact at every component in the regulation process, but child's part in the process is demanded more increasingly. For instance, the child is prompted either to generate alternative appraisals (e.g. "Did it really happen this way?"), or distractive, soothing or behavioral responses (e.g. "What could you do now?", "How could you distract/sooth yourself?"), or to choose from a set of alternative appraisals or responses and execute the self-chosen alternative (e.g. "What would you like to do instead: go outside, paint a picture or play with the others over there?"). This level of co-regulation helps a child to actively explore and evaluate alternative regulation strategies and to volitionally choose and execute a specific strategy from a set of alternatives. As reappraisal prompts are considered as more challenging to children's developmental competencies, meta-cognitive reappraisal prompts likewise are supposed to start later in development than meta-cognitive prompts related to behavioral responses. Further, as evidence about caregivers' co-regulation indicates (Morris et al. 2011; Putnam et al. 2002; Spinrad et al. 2004), we suppose that, together with a developmental decrease in emotion intensity (Holodynski 2006), co-regulation strategies of distraction and soothing decline, independent from the level of co-regulation.

To conclude, the internalization model of reflective emotion regulation assumes that children proceed through these three levels at different ages for each of the above-mentioned regulation strategies. This is of special relevance when it comes to applying more complex and cognitively demanding regulation strategies like reappraisal or response modulation strategies which come into play some time later than other strategies such as distraction which are less demanding in cognitive terms. Across the preschool years, children become more and more aware of emotional states in themselves and others, and they improve their abilities to apply more complex and more effective regulation strategies. For acquiring each of these more complex strategies, caregivers provide scaffolding at the different levels of development.

Rising through these different levels of co-regulation, children regulate emotions in increasingly self-regulated ways. All regulatory activities are initially applied without conscious awareness (see also Gross/Thompson 2007). Differing from other approaches (e.g. Crick/Dodge 1994; Lemerise/Arsenio 2000) we postulate a formative phase during the preschool period in which self-regulation is constituted by the way in which caregivers co-regulate emotionally challenging episodes. This allows us to define the components of caregivers' co-regulation that seem critical to describe the gradual transition from co- to self-regulation.

## 3    Conclusions and future directions

In this paper, we highlighted the constitutive role of co-regulation through caregivers for the development of emotion regulation in early childhood, based on theoretical and empirical findings about the positive developmental impacts of caregivers' emotion coaching and caregivers' co-regulation that is adjusted to the child's developmental level. We postulate that the transition from interpersonal co-regulation of the child's emotions to intrapersonal self-regulation of emotions proceeds through critical caregiver-child interactions. Based on a process model of emotion regulation that distinguishes different phases, ranging from perceiving and evaluating a given event to showing a behavioral response, and different co-regulating strategies to modify each sub-process, we proposed three developmental levels of co-regulation, each requiring a different way of scaffolding from the caregiver.

Our model makes a number of assumptions that are associated with a specific cultural model, namely the model of psychological autonomy, which is prevalent in Western educated urban middle-class (Keller 2007; Keller/Kärtner 2013). According to this cultural ideal, sensitizing children for their internal mental states and making these the dominant frame of reference for behavior is of primary importance and this is also what characterizes emotion regulation: becoming aware of and deliberately regulating emotional responses by rational reflective agency (Kärtner 2015). Beyond this reflective psychological approach, there are other, more external, mechanisms by which emotions and their expression can also be regulated effectively, for example via strategies such as shaming or threatening. These strategies may be similarly effective in that they reduce the enact-

ment of undesirable behavior, however, they do not rely on reflection but are based on different mechanisms. Importantly, cultures differ considerably in the degree to which these different strategies of socializing emotions are valued and practiced (Röttger-Rössler et al. 2013; Röttger-Rössler et al. 2015) and future research should systematically take culture-specific norms and preferences into account in analyzing the development of emotion regulation. To test the internalization model of reflective emotion regulation, experimental research and intervention studies are required. Such studies are able to reveal causal and sustainable effects of underlying co-regulation processes. Furthermore, they can demonstrate its constitutive role in the development of children's social-emotional competence. Bearing in mind that emotion-regulation has significant impacts on development, our model provides a theoretical basis for concepts in the field of intervention, training, and counseling for designing programs that foster children's self-regulation of emotions by focusing on developmentally appropriate co-regulation practices of caregivers.

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