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Approach and Withdrawal in Early Emotional Development

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Introduction

The capacity to approach or withdraw from stimulation is a key aspect of emotional life. Approach and withdrawal have been studied since Darwin initially described them in 1872.[1] They are core systems of emotional behaviour and personality.[2-5] Individual differences in approach and withdrawal underlie children's emotional behaviour.[6-7] Adopting this system's model for emotional development allows findings in cognitive neuroscience, and psychophysiology to be integrated into our understanding of how emotional life develops. This view also does not equate specific facial expressions with discrete emotion states or brain centers but views emotions as neuro-biological processes that are integrated with cognition throughout development. This article describes approach and withdrawal emotion in infancy and the role of individual differences in these core aspects for young children's subsequent functioning.

Relevance

Approach behaviours and emotion can be observed in the first months of life and become more elaborated with development. Facial expressions, behaviours and underlying physiological

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changes that move the child toward stimuli index approach. Newborns will turn their eyes and head toward novel stimulation of moderate intensity. Interest and smiling are examples of approach emotion, as are anger expressions to blocked goals.[7-9] Anger, supported by increased heart rate, facilitates action toward regaining goals via persistent approach. Thus, anger, with the same directional valence as the positive emotion expressions of interest and enjoyment, is part of the approach system.[5] In contrast, low activity toward goals, increased cortisol response, expressions of sadness or fear, and behaviour promoting movement away from a stimulus index withdrawal.[10-11]

Approach and withdrawal differences may persist over time and thus have importance for understanding emotional risk and resilience.[12] Withdrawal is a risk factor for childhood depression.[13] Greater fear, sadness and behavioural inhibition to negative events have been linked to behavioural difficulties and poor emotion regulation.[13-15] Differences in withdrawal in novel stimulus contexts are thought to reflect temperament differences resulting from gene by environment interaction.[13,16] Less is known about early differences in approach, but “exuberance” or sociable temperaments have been proposed to reflect strong approach tendencies.[17-18] Individual differences in approach and withdrawal are clearly important features in young children’s emotional competence.

Problems

Developmental theorists have been slow to adopt a view of emotions as neuro-biological processes rather than feeling states. Rather than viewing anger and sad expressions as read-outs of discrete negative states or as assembled facial “attractor patterns,”[19-20] viewing them as approach or withdrawal responses offers a contextually sensitive and functional approach to early individual differences in emotion.

Past work on negative emotion in infancy also tended to focus on the specificity of emotions to eliciting contexts. It is clear by now that such specificity does not exist for most of the contexts studied.[21-22] Approach and withdrawal allows a functional categorization of contexts based on children’s action and physiological responses. Contexts that elicit positive emotions and orienting (interest and enjoyment) and anger to blocked goals are all classed as approach activating, while those eliciting fear, sadness and cortisol increases are classed as initiating withdrawal. The degree to which any context promotes approach or withdrawal can be examined empirically so research can now focus on describing specific contexts and the variation in the

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approach or withdrawal behaviour, including facial and vocal expression as well as correlated physiological patterns observable within them.

Research Context

The study of approach and withdrawal to goal blockage has revealed the early onset of these emotions as well as individual differences. When goals are blocked, most babies act to regain what was lost, and appear angry. Others become passive and appear sad. Observable in 2- to 6-month-olds, these individual differences are stable across the first year of life.[9] Infants learn to expect an event (goal) followed by briefly blocked access: they activate a musical slide show by pulling a ribbon attached to the wrist. A baseline of two minutes allows infants to acclimate to the standard setting. During learning, pulling triggers the brief slideshow. Infants must tug repeatedly to regain access. Infants learn this contingency within 6 minutes, the majority within one session. Approach emotions of interest and enjoyment occur during this period and set the stage for assessment of response to goal blockage when the slideshow is unexpectedly turned off.

Among babies who learn, reactivity to goal loss is either approach or withdrawal.[11] Babies who appear angry actively try to get the slideshow back. These characteristic responses characterize to goal loss and do not occur in “baby bot” machine simulations of infant learning since machines do not experience “wanting” or “loss”.[23,24] Infants’ heart rates increase, but despite being aroused, they are not distressed. Cortisol, a stress hormone measured in saliva remains stable. They remain interested in obtaining the goal and smoothly re-engage when access is returned to them.[25] A smaller group of babies show sad facial expressions and decreased heart rate. These babies tend to slow their pulling and show increased cortisol response, suggesting that they are more stressed by goal blockage.[11] They appear to give up easily and when access is restored, they show less interest and enjoyment.[25]

Key Questions

Does maternal caregiving influence the emergence of individual differences in early goal blockage responses? Sensitive maternal behaviour between birth and 4 months attunes infants to social contingencies and promotes a generalized expectancy of a responsive world and should therefore also promote greater approach emotions.[26-27]

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How are approach and withdrawal related to subsequent adaptive and dysregulated behaviour? Vulnerability to behavioural inhibition is only one axis along which emotional difficulties may develop. Helplessness or hostility in response to challenges are problem behaviours likely to be linked to difficulty in regulating approach and withdrawal emotions. Approach emotion, including anger, should be related to positive aspects of behaviour including sustained effort when minor difficulties are encountered, but be unrelated to uncontrolled bouts of negative emotion, such as tantrums and other forms of dysregulated behaviour. Sadness, if adaptive, might be related to greater help- or comfort-seeking, although it may be associated with greater helplessness and passivity.[28]

Recent Results

Studies considering both the biological and experiential contributions to individual differences in approach and withdrawal are, as yet, few but thus far support that early individual differences in anger/approach are unrelated to dysregulated behaviour. Evidence suggests that tantrums starting in the second year through preschool age are sequential displays of anger and sadness with the secondary, sad component being the prolonged, more slowly dissipating emotional reaction while anger dissipates more quickly.[29]

In one study, the time that it took the toddlers to stop playing, the degree of protest shown, and the rapidity with which toddlers calmly re-engaged in play with the toys were reliable indices of persistent motivation to play. More anger to goal blockage in infancy was related to toddler's persistence in playing, indicating consistency of approach emotion from 4 to 20 months. While earlier maternal sensitivity was related to showing less negative emotion by 4 months in general, early maternal sensitivity did not affect anger and sadness differentially and was unrelated to toddlers' persistence or to protest.[30]

Approach and withdrawal emotions at 5 months and maternal reports of infant negative temperament are not related in a simple or direct fashion.[31-32] Some relations have been found between sadness/withdrawal and maternal reports, but not anger. Sadness was related 1) to low activity, suggesting that infants who are low in approach are more passive, and 2) to composite ratings of negative temperament, but not to distress to novelty or limits dimensions individually.[31-32]

Maternal reports of tantrum onset and a composite score of their severity at 12 and 20 months were unrelated to the infants' anger to goal blockage.[32] Supporting this view, anger predicts

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emotional competence in older children and is related to the persistence of instrumental responses during repeated goal blockage in young infants.[31,33] Increased anger was observed only among children whose mothers reported that they themselves were angry, supporting a hypothesized transactional model of coercive parental-child interactions.[34,35]

Gaps in Knowledge

Work on approach and withdrawal in infancy and later consequences is still limited. The stability of individual differences in goal blockage emotions has been established, but the cross-contextual consistency of approach and withdrawal emotions should be examined. Withdrawal responses to goal blockage and behavioural inhibition appear to be different emotion styles, based on maternal reports, but direct behavioural study is needed. Excessive inhibition and greater passivity/low approach reflect different axes of emotional risk, so it is important to determine to what extent these represent distinct vulnerabilities in children.

Continued study of early sensitive maternal caregiving in relation to early approach and withdrawal emotion is needed. To examine how experience effects approach and withdrawal both dyadic in-home interactions, and global ratings assessments of caregiving should be examined. If results continue to support approach and withdrawal emotions are relatively independent of maternal influence before 6 months, we must examine whether later maternal responses moderate initial approach and withdrawal tendencies. Mothers may not entrain early differences but may subsequently support approach or withdrawal responses directly as they respond to their children, or indirectly through their structuring of infants' play and learning experiences. Such studies will allow us to examine how approach and withdrawal styles become consolidated as well as how they are linked to experience, remembered, and eventually form the basis of the child's emotion concepts and emotional scripts.

Finally, once anger and sad responses are elicited, individual differences in how they are regulated are of considerable interest. This will require continued study of the interface of approach and withdrawal emotions in relation to physiological responses, developmental changes in attention and cognition, as well as maternal behaviour.

Conclusions

Study of early individual differences approach and withdrawal emotion promises to expand our knowledge of the development, regulation and socialization of emotional competence.

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Understanding how experience contributes to the adaptive, appropriate expression and regulation of approach and withdrawal emotion is important in developing models of early development. Examination of contextual differences between withdrawal emotion to novelty, and withdrawal emotion in goal blockage contexts, currently thought to reflect low approach and/or passivity, will help to identify those children who may show greater emotional vulnerability.

Implications

Individual differences in approach and withdrawal emotions and their developmental trajectories will become increasingly apparent as young children expand their horizons in the preschool period. As the number of children entering group care settings during infancy and preschool is likely to increase, understanding the developmental trajectories emotions that promote appropriate emotional development is necessary to help identify and support children who may have emotional vulnerabilities.

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