SECTION 1. CRITICAL IMPORTANCE OF EMOTIONAL DEVELOPMENT

Early Emotional Development: New Modes of Thinking for Research and Intervention

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ABSTRACT. Recent thinking about early emotional development in a context useful for pediatricians and other clinicians is reviewed in this chapter. Important functions of emotions are that they help define individuality, motivate approach or withdrawal from a situation, and communicate with caregivers. Emotional development in the first years of life may be seen as a series of predictable stepwise transitions when changes are pervasive and involve major reorientation for children and families. Pediatrics 1998;102:1236–1243; emotional development, infants, developmental transitions, emotional availability, imagination.

This chapter of New Perspectives in Early Emotional Development reviews recent thinking about early emotional development in a context that can be useful for clinicians in pediatric settings. Beginning with some definitions and current views, the discussion leads to illustrations of adaptive functioning of early emotions in two areas: motivation and caregiving. Developmental transitions in emotion will then be reviewed, followed by some practical thoughts about assessing emotional availability.

DEVELOPMENTAL COMPLEXITY AND EMOTIONS

Contemporary views of early emotions are framed by our appreciation of developmental complexity. Development involves changes within individuals over time, and the developing child is best understood in terms of increasingly organized complexity. Development, by definition, also involves dynamic exchanges within the environment. For the developing child, personal meaning is expanding, transforming, and reorganizing. Moreover, developing individuals are immersed in particular cultures and caregiving contexts. Meaning becomes organized to some extent in unique ways that carve out individual pathways for adaptation.1–8 The clinician’s job, therefore, is a difficult one—to assess meaning in all of this complexity, for health as well as for illness.

There are several reasons clinicians should be concerned with emotional development. The first is that emotions help define one’s individuality. From the standpoint of an individual’s experience, emotions define a sense of consistency; they set parameters for sensitivity and responsiveness, wherein a person comes to “feel right” (or otherwise) about his or her relation with the world.9,10 From the standpoint of what others observe, emotional responses can be said to define temperament, which in turn can be regarded as an individual’s characteristic set of thresholds and latencies for such responses.11,12 Clinicians can make use of the connections between emotions and individuality. When a clinician gets in touch with a patient’s emotional life, that person is likely to feel understood—helping and healing then become possible. Moreover, getting in touch with another person’s emotional life can help in working through a problem area, while appreciating its connection with other areas (a clinical skill sometimes known as “systems sensitivity”).13,14 Also, when clinicians help parents to appreciate their infant’s temperament or emotional individuality, caregiving attitudes may improve.15

A second reason is that emotions during early development have two central adaptive functions that help define the meaning of experience. These are motivation and communication. Emotions motivate an infant either to approach or to withdraw from a situation, either to maintain or to terminate stimulation. Infant emotions also are linked to need states that may communicate something that motivates caregiving by others. The linkage to need states points to the other adaptive function of emotions: communication. Emotions communicate intentions to people who not only observe emotions but respond. Emotional signals thus are intrinsically connected with the child’s social functioning and social development. The communication of pleasure, interest, surprise, or particular forms of distress all serve to guide social exchanges and activities. Clinicians make use of these aspects of emotions as well. The clinician continually monitors emotional expressions in infancy is especially important to understand the infant’s intentions and state of wellbeing. It is not surprising that clinicians sometime refer to emotions as “the language of infancy,” a language existing before the development of speech. After infancy, however, emotional signals continue to provide a
THINKING ABOUT EMOTIONS: THREE HELPFUL VIEWS

Three current views take into account the adaptive functions of emotions within a developmental systems framework. These views frame our current thinking and bring considerable agreement to a field characterized previously by disagreement and diversity.

The first view is organizational/adaptive. Emotions were regarded formerly by many as reactive, intermittent, and disruptive events; now they are recognized as active, ongoing, and adaptive processes. They serve two kinds of adaptive functions: motivation within individuals and communication among individuals. In terms of motivation, there are two kinds of phenomena: short-acting emotions (which many following Paul Ekman16 would consider “emotions proper”) and longer-acting emotions (usually referred to as moods and temperaments). Emotional organization incorporates the principle of regulation, as is found in other psychobiological systems. In other words, there is a usual zone of regulatory adaptive functioning, and dysregulation is characterized by extremes, by either “not enough” or “too much” emotion.

A second view has to do with complexity; emotions are seen now as processes that have meaningful components and configurations. These components often are nonlinear and involve subsystems of appraisal, expectations, arousal, pleasure, pain, and autonomic and somatic feedback, as well as feedback from gestures, actions, and communications. All can occur in varying configurations. Adding to the complexity of this picture, different configurations of emotion may have components that are ordered in different ways in different contexts.17-19

The third view is relational and refers to the importance of context. Emotions were studied previously in an isolated, mechanical way. Now we appreciate that all processes of emotion involve significant person–environment relations. In other words, emotions are constructs that need to be understood in terms of the goals of the individual (with intentions and appraisals) in relation to the individual’s environment.18,20

The preceding views of emotion may seem abstract, but they are useful for researchers and clinicians alike in consideration of ongoing discoveries in molecular genetics and developmental neurobiology.21 In terms of the organizational/adaptive view, it seems highly likely that types of emotion dysregulation will be clarified by discoveries of genetic and molecular aberrations. It also is possible that strength, competence, and mental health may be found to be fundamentally different from their “opposite” conditions of emotion dysregulation and disorder. If such is the case, it may make possible more effective interventions. In terms of complexity, it seems certain that we will understand more about the genetics of the components and configurations of emotion. From a related perspective, we anticipate clarifications in terms of the relational view of emotions. The context specificity of components of emotional predisposition will be understood better with respect to particular situations. We have already learned that genetic expression can be influenced profoundly by environmental context.5 We will undoubtedly learn much more about the particular contexts for emotional health as well as for emotional illness.

DEVELOPMENT

The three views about emotion also are useful in thinking about development—the changes that occur within individuals over time. In terms of the organizational adaptive view, changes sometime involve a period of transition and reorganization; therefore early adaptational functions may be different from later functions. Thus, the first 1½ years of life are likely to be different in adaptive organization from the second and third years. In terms of complexity, developmental psychobiology involves increasingly organized complexity. Genetic and environmental influences with respect to components of emotional processes are likely to change with development. Similarly, new configurations of emotional processes are likely to emerge, as well as new sets of genetic and environmental influences. As we learn more about the psychobiology of early development, we anticipate that complex organizations will illustrate features of continuity as well as of change. In terms of the relational view, an increased complexity of person–environment relations includes the fact that transactions of experience will occur in particular circumstances, often within intimate and increasingly complex social relationships.

The MacArthur Longitudinal Twin Study provides an illustration of the changing aspects of genetic and environmental influences on emotion during the second and third years of life.22 Our analyses of observed empathic responses in the child also illustrate the usefulness of the views presented above about emotion. Following the work of Zahn-Waxler and colleagues, components of the toddler’s empathy to the distress of another were coded from videotapes of approximately 200 twins.23,24 Component emotional responses included such behaviors as cognitively oriented visual checking, emotional arousal, and prosocial activities such as helping, soothing, or sharing. Genetic influence at 14 and 20 months was indicated by substantially higher similarities in empathic responses of identical twins compared with fraternal twins. There was evidence of substantial environmental influence as well, but the patterns of genetic influence on component responses was different, indicating the usefulness of a components approach in thinking about developmental change.

Longitudinal results at 24 and 36 months of age in this study revealed continued genetic influence on empathic responses (cognitive, emotional, and behavioral arousal in response to the distress of another-
er), but with a dramatic difference of testing conditions. When an unfamiliar tester was the source of distress, a predominantly genetic influence on empathy was observed. But when the mother was the source of distress, predominant influences were of the shared environmental type (indicated by substantial similarities in both fraternal and identical twins). In other words, testing context made a major difference. Presumably, strong socialization forces shared by the twins in their day-to-day interactions with parents and others were a major influence in the context when mothers elicited the child’s empathic response, but not when responses were elicited by testers.

I now would like to return to some broader areas of adaptive functioning of early emotions that indicate their role in enhancing development. These areas include 1) more general motivational tendencies, and 2) the caregiving relationship.

Emotions and More General Motivational Tendencies

The motivational and communicative functions of infant emotions are closely connected. As motives, emotions are inborn tendencies present in infancy that continue throughout life. Emotions are fostered by caregivers (who themselves are emotionally available) as they respond to the communicative signals of infant emotional states. From the infant’s point of view, there is a monitoring of experience according to what is pleasurable or unpleasurable. Such experiential states guide activity according to degrees of approach or withdrawal. From the mother’s point of view, infant affective expressions guide caregiving. One needs only to think of the messages conveyed by an infant’s cry (“Come change something”) or by an interested, smiling expression (“Keep it up, I like it”).

Then, during the middle of the infant’s first year, a momentous development takes place. Emotional expressions of others take on a new meaning and are monitored in a new way. When confronted with a situation of uncertainty, the infant engages in social referencing, searching out emotional expressions of significant others to guide behavior accordingly. Thus, if mother smiles, the infant is encouraged to approach an odd-looking toy or a stranger, and if mother looks frightened or angry, the infant cancels an approach or retreats. Social referencing adds a new level of shared meaning to the infant’s affective monitoring.

Emotions also guide another motivational tendency. Research has documented that from the earliest days, an infant has a tendency to explore the environment, seeking what is new to make it familiar—a process that Jean Piaget referred to as cognitive assimilation. This tendency also has been studied as “mastery motivation” and “mastery pleasure.” More simply, we can refer to this as a directed tendency of the child to “get it right” about the environment. The emotions of interest, surprise, and pleasure often accompany such activities.

Emotions and the Caregiving Relationship

Another illustration of the adaptive functioning of infant emotions (for both motivation and communication) is seen in the caregiving relationship. Through repeated responses to infant emotional signals, caregivers respond appropriately with their own emotions and actions. Caregivers also help infants regulate their emotional states (for example, by making extended crying unnecessary or by promoting interested alert states). Over time, the child learns that such regulatory functions take over his or her own emotional regulation. Thus, emotion regulation experiences with caregivers become internalized by the developing child if there is consistency and if the relationship is secure, as attachment researchers have emphasized. Indeed, the attachment researcher Alan Sroufe has defined attachment processes in aggregate as “the dyadic regulation of affect.”

This leads to another connected point. Development and its increasing complexity mean that the infant’s emotions are becoming more differentiated (in terms of their motivation and communication) at the same time that the context of the caregiving relationship also is undergoing development and revision. Infant emotional signals of joy, anger, fear, and surprise take on particular meanings that change to some extent as shared expectations change. Through repeated experiences with emotionally available caregivers, the child learns about emotional regulation and how emotions are communicated. During the second year, emotions are involved in negotiating responses to caregiver prohibitions; these exchanges involve interest, surprise, distress, anger, pleasure, and other emotions. Empathy, pride, and shame also typically develop during the child’s second year, as the onset of speech and better command of emotional communication give a richer expression of the child’s emotional availability to the parent. Overall, early emotional development offers repeated opportunities for emotional exchanges that not only involve conflict and its resolution but “attunement,” as Daniel Stern has put it, as the toddler develops new skills and emotional reactions.

DEVELOPMENTAL TRANSITIONS AND “MILESTONES” IN EARLY EMOTIONAL DEVELOPMENT

Parents and clinicians often ask about “milestones.” Can we say there are milestones—regular age-expectable sequences—in early emotional development? I used to be involved in “mapping expeditions” of the features of early emotional development. But I have grown cautious about making such generalizations in consideration of the three research-based views of emotion. Components of emotions and their configurations change not only with development but also with contexts, in particular those involving experiences with caregivers. Most cautiously, therefore, I present the list in Table 1 that results from recent interview studies about prototypes of emotion primarily from middle-class Euro-American mothers in Denver, CO.

Based on my research and clinical observations over the past 30 years, it generally is safe to say that emotions of distress, happiness, interest, surprise, and disgust are present in the first 6 postnatal months. In the second 6 months, anger, fear, and sadness appear. These results admittedly are from
Denver mothers in a particular ecologic niche, but they are consistent with much of the literature. Still, components of these emotions will vary in relation to their contexts—a consideration that becomes even more important during the child’s second and third years. Components of emotions, such as appraisals, intentions, goals, and communicative styles, become increasingly varied in relation to their experiences with people. As might be expected, the mothers in our recent studies reported variations in these later appearing emotions.

Thinking about developmental transitions rather than milestones provides a perspective that can be useful for clinicians. The idea of developmental transitions as periods of reorganization that can be opportunities for intervention (sometimes in the midst of stress and turmoil) is encompassed in T. Berry Brazelton’s parenting book *Touchpoints* (Addison Wesley, 1992). In a pioneering theoretic monograph written in 1959, René Spitz pointed out that infant development does not occur in a linear manner, but rather in a stepwise manner. Spitz also pointed to times of psychobiological reorganization during these step changes that were indicated by new patterns of emotion. Today, we can represent schematically our knowledge of developmental transitions, as in Figure 1. Ages during the transition are approximate, and individual variations in the timing of transitions become greater as the child gets older.

As my colleague Joe Campos and I now think about such transitions, they are times in development when changes are pervasive, enduring, and involve major reorientations in person–environment relations. In other words, such transitions provide the setting for other changes in the child and family. Emotional communications are central to this process.

Seven such transitions can be designated from birth through 5 to 7 years, all having considerable clinical and research documentation.

The first transition of birth has been well described by the Neonatal Behavioral Assessment Scale, which also takes into account the adaptive functions of emotions. The emotional expressions of crying, interest/attentiveness, quiescence, and capacities for self-soothing are important aspects of the newborn’s developing behavioral repertoire. These are used to assess states of need and motivation, as well as the clarity of communication of these states, for both clinician and caregiver. The rich variety of these emotional expressions also serve to indicate the newborn’s uniqueness and individuality.

Table 1. Emotional Development in the First 3 Years

<table>
<thead>
<tr>
<th>Emotions developing during the first year</th>
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<tbody>
<tr>
<td>0–6 Months</td>
</tr>
<tr>
<td>Distress/crying</td>
</tr>
<tr>
<td>Happy or joy/smiling</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Distaste (“disgust”)</td>
</tr>
<tr>
<td>6–12 Months</td>
</tr>
<tr>
<td>Anger</td>
</tr>
<tr>
<td>Fear</td>
</tr>
<tr>
<td>Sadness</td>
</tr>
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Emotions developing during the second year

| Pride                                   |
| Possessiveness                          |
| Affection                               |
| Generosity                              |
| Anxiety                                 |

Emotions developing during the third year

| Shame                                   |
| Envy                                    |
| Embarrassment                           |

In the six developmental transitions that follow the neonatal period, changes in emotional expression are prominent. They typically occur after other psychobiological changes have taken place. In particular, they seem to provide communications that consolidate new roles of the child within the family.

The 2- to 3-month transition is typified by the onset and flowering of the social smile. It supplements an enhanced wakefulness and an enhanced capacity for eye-to-eye social contact, changes that in turn provide new opportunities for engagement and learning. Because of these features, we have referred often to this transition as “an awakening of sociability.” Parents typically respond to these changes not only by increasing their own social interactions with the infant, but also by taking their infant outside of the home more and by increasing interactions with others. New parents have told us that at this time, their infant is less like a doll and more human.

The 5-month transition has been characterized as the onset of focused attachment and often is typified by the infant’s distress or anxiety on the approach of a stranger and heightened distress on separation from primary caregivers. This also is a time when cognitive development is enhanced. Not only does the infant begin to remember goals when they are out of sight, but the infant begins to have shared goals with caregivers.

Shared meaning in this sense is illustrated with peek-a-boo and similar games that begin during this transition period. The expectations and anticipatory sense of delight, as well as the infant’s demonstrable knowledge of the routines in the peek-a-boo game, illustrate a shared sense of the past (knowledge of rules of the game) and of the future (expectations of what will come). Emotions become anticipatory in play, as well as in conditions of separation and distress.

In most infants at this time, many of the relationship experiences with primary caregivers have become internalized in a person-specific way. Families now experience an additional change in their infant’s relation to them. Because of heightened distress, separation and substitute caregiving have different consequences than before.

The 10- to 13-month transition is marked by the onset of walking and its socioemotional conse-
quences. Clinicians, including Margaret Mahler and colleagues, typified this time as one when the child often appears elated and begins to use emotions that communicate a sense of pride.43 Young toddlers also may experience more distress at this time because as they walk and are more autonomous, they experience consequences of caregiver prohibitions and other more distance-oriented emotional signals from adults. In a longitudinal controlled study, we found that these emotional changes did not occur in all healthy toddlers, but rather tended to occur in those who began walking earlier.44 Moreover, earlier walkers also were characterized by a particular emotional predisposition before, during, and after the transition—a predisposition for expressing distress toward physical restraint (such as in being dressed, put in a chair, or put to bed). This study also made us realize something about transitions we had not appreciated before: the importance of timing. Children who normally enter developmental transitions earlier may have different emotional experiences than those who enter transitions later in age.

The 18- to 22-month transition brings other momentous changes. This has sometimes been earmarked as the time of the “transition from infancy to early childhood” because the changes are major. Changes include the beginnings of self-reflective awareness, as well as the beginnings of multiword speech.45-47 Emotional changes include the acquisition of what has been referred to as early moral emotions, such as “distress on the violation of standards,” as Jerome Kagan has put it.9 The toddler not only wants to “get it right about the world,” but sometime becomes upset when an expectation about the way things “should be” is violated (for example, with a broken doll or a dirty toy). Empathy is another emotional change that becomes consolidated at this time. Toddlers respond to another’s distress with personal expressions of concern and distress, accompanied by behaviors of caring, soothing, and helping, as Carolyn Zahn-Waxler, Marian Radke-Yarrow, and others have so amply demonstrated.24,48 The onset of shame expressions also may occur at this time. Not surprisingly, the family again reorganizes the child’s role during this transition. The child is held more responsible for intentions and for emotional regulation; there is a corresponding increase in the time and effort required for socialization.

The 3- to 4-year transition occurs when the preschooler becomes narratively competent. The ability to construct a narrative organization for emotion-laden experience is another momentous developmental acquisition, one wherein the child can represent past experience and future expectations in a coherent way and can portray it in language and share it with another. Thus, the child can tell mother about what happened in day care or with grandmother when they were apart. The capacity for narratives, acquired during this transition, also is a major step in being able to understand and regulate emotional life. By their nature, narratives typically are organized to deal with an emotionally unexpected situation or conflict. As such, they allow for “affective meaning-making,” as put by Dennis Wolf and colleagues.49 Emotional tension moves to a high point in a narrative structure and then comes to some sort of resolution. Thus, the understanding of family situations, roles, and conflicts often is played out by the child using narratives. Narratives also allow for the playing out of alternative possibilities for future events, as emphasized by Jerome Bruner.50 Assessing individual differences in preschoolers’ emotion-laden play narratives now forms the basis for a research technique that gives us a window into the child’s understanding of family relationships as well as a variety of moral and emotional themes. Such narratives also link to the presence or absence of behavioral problems.51-56

Finally, the 5- to 7-year developmental transition originally highlighted by Sheldon White is important and has been reviewed recently by Arnold Sameroff and Marshall Haith.57,58 The transition is marked by enhanced cognitive, perceptual, and attentional capacities as well as by capacities for social and emotional regulation. All of these features reflect important neural–maturational developments and are associated with school readiness. The entry into school at this time initiates major changes in the child’s role relationships, not only with respect to the family but with peers and teachers.

ASSESSING EMOTIONAL AVAILABILITY, USING OUR EMOTIONS, AND ENCOURAGING ADAPTIVE ALTERNATIVES

Assessing emotional availability is an important feature of clinical practice. Emotional availability is a relational concept based on the knowledge that in any caring relationship, a certain range of organized emotions is associated with continued involvement, intimacy, and developmental change. Being emotionally available is equivalent to communicating an openness toward an acceptance of another’s feelings and expressed needs. Thus, it is not surprising that both clinical experience and research experience demonstrate that emotions can be a sensitive barometer of early developmental functioning in the child–parent system.9,29-63

If the child–parent relationship is healthy, sustained pleasure and mutual interest should be evident, as well as a well-modulated range of emotional expressions, both negative and positive. The clinician will see evidence of this in the child and the parents, and in their interactions. If the relationship is not functioning well, one sees little pleasure, and the range of emotional expressions is restricted; replacing expressions of interest there may be evidence of avoidance, “turning off,” or apathy. Maladaptive patterns such as fearfulness and vigilance or sustained anger and hostility also may be apparent and, in extreme circumstances, there may be sadness and depression.

Clinical experience has taught us that assessment of emotional availability is in one sense straightforward and in another sense not. In one sense, clinicians have long found emotions to be central. Expressed discomfort is a basis for consultation, and therapeutic progress is monitored through observation and empathy. Moreover, patients’ emotional ex-
expressions reveal how they feel. In another sense, there is an aspect of this kind of assessment that is not straightforward. A difficulty emerges from the relational nature of emotional availability; to assess emotional availability, the clinician must use his or her feelings and be emotionally available. This is often not easy with children. For example, their expressions of sadness and depression are painful to acknowledge when they are experienced by adults as resonant responses. Discomforts of this type probably contributed to the fact that childhood depression went unacknowledged for so long and that painful observations of child abuse went unappreciated for decades.64,65 Because of the empathic difficulties in seeing the implications of pain in infants and toddlers, we have referred often to this aspect of emotional availability as “coming to grips with the painfully obvious.”

CONCLUSION

In concluding, I direct our attention to another new area of thinking that has been previously neglected. This involves the child’s early imagination and the development of future-oriented processes.66–68 Imagination is an adaptive psychological function of emotional significance, and it deserves more attention. It is through exercising imagination that the child, parent, and clinician can envision new combinations and better possibilities.32,69 As adults, we often acknowledge that imagination in play, movies, and art adds enrichment to our lives by showing us alternative worlds. We often forget that with children, viewing alternative possibilities also is vital for social exchange and for other aspects of everyday functioning. The child needs to see another’s view for effective communication and to see alternative possibilities when a goal is blocked or a conflict is encountered.

At 3 to 4 years of age, children develop narrative capacities that allow them to organize meaningful alternative personal worlds of emotional significance and to express them to others.49,50 Alternative imaginary worlds allow the child to try out varying expectations in a future-oriented way. As Inge Bretherton has expressed it, the narratively competent young child can organize emotionally meaningful experiences according to an “as if” imaginative mode that can lead to a “what if” cognitive mode.68 Alternative possibilities can be created, envisioned, and, in a sense, “tried out” in advance.

Recent observations have underscored a surprising developmental feature in terms of the child’s early imagination. Children as young as 3 years are able to transform reality while playing without being confused, and they can experience pleasure with their caregivers when doing so. This is quite different from a traditional psychoanalytic view that the young child normally has difficulty distinguishing fantasy and imagination from reality. It also is surprising as to the extent to which imaginative capacities can be seen to develop in important ways at the very beginning of language (for example, soon after the onset of multiword speech).

The following vignette from a 24-month-old is presented as an example of early imagination (Fig 2).69 This child was videotaped and recorded in one of our studies and was seated between his parents, who were eating dinner at home. The child begins making motions and sounds with his bread. We refer to the vignette as “A Horse Made From Bread.”

The above example is among many we have recorded in our studies that illustrate early imaginative transformations at 2 years of age. Our research group would emphasize that research on early imaginative capacities and their variations is at an early phase. It seems likely, however, that such variations are considerable and that many children, particularly under conditions of environmental deprivation and stress, show less of such abilities. Certainly, children who are stressed may at times confuse elements of the imaginary with what is real, especially when they feel not in control, frightened, sleepy, or ill. The implications of early variations in this ability are as yet unclear. What does seem clear is that these are areas of major emotional significance for many children and their families. It also seems clear that as interventionists, we soon will be presented with increasing opportunities for learning about variations in future-oriented processes and emotion-laden imaginative processes in young children as well as the implications of these processes for fostering adaptive alternatives in development. This will occur as we learn more about the particulars of biological variation from advancing knowledge of molecular genetics and cognitive neurosciences and as we learn more about the particulars of cultural variation from advancing knowledge of our increasingly diverse and interconnected society.

REFERENCES


69. Emde RN, Kubicek L, Oppenheim D. Imaginative reality observed during early language development. *Int J Psychoanalysis*. 1997;78:115–133
Early Emotional Development: New Modes of Thinking for Research and Intervention
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Pediatrics 1998;102;1236
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