

Why Do Babies Cry?

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Full Text: Headnote ABSTRACT: This paper discusses the baffling phenomenon of extensive crying in infants for unknown reasons, frequently referred to as "colic." Traditional explanations based on gastrointestinal, allergenic, and psychosocial factors are discussed, and evidence supporting a stress-release theory of infant crying is presented. The various sources of stress during infancy are reviewed, and appropriate caregiving responses to crying are discussed. An important distinction is made between the two major functions of crying: communication of immediate needs, and the release of tensions resulting from past trauma. Inappropriate caregiving responses to crying are also described, as well as the possible consequences of repressed crying.

INTRODUCTION A baby's crying can invoke powerful feelings in caretakers. In a survey in the United States of new mothers who were asked to describe their feelings when they were unable to quiet their crying babies, respondents mentioned feeling exasperated, underconfident, afraid, anxious, unloving, resentful, and confused. Some even felt extreme hostility towards their infants (Jones, 1983). Similar results were found in a survey of mothers in England and Australia. In this study, eighty percent of mothers whose babies cried extensively mentioned feeling depressed, and 50% of them felt a strong urge to hit their babies (Kitzinger, 1989). Not surprisingly, infant crying has been linked to child abuse (Murray, 1979; Frodi, 1985). In a survey of battered infants, 80% of the parents reported that excessive crying by their child triggered the abuse (Weston, 1968). It is therefore vitally important to help parents understand and cope with their baby's crying. Babies often cry for reasons that appear unrelated to any apparent cause or immediate need. It has been observed that about one third of the instances of crying in newborn infants are of undetermined cause (Aldrich et al., 1945), and that young babies cry on the average of 1.5 to 2 hours per day (Brazelton, 1962). Crying duration typically peaks when the infant is six to eight weeks of age, and then gradually declines. This pattern, so characteristic of infants in Western cultures, has been found in the !Kung infants of Africa as well, implying that this phenomenon is not specific to industrialized societies (Barr et al., 1987a). However, the overall amount of infant crying in primitive cultures is less (Kitzinger, 1989). Conflicting opinions about crying abound in parenting manuals. Most of the advice, based on the assumption that all crying in infants is undesirable, asserts that the appropriate caretaking response is to quiet or "soothe" the baby. In one book aimed at helping families cope with crying, a successful intervention was considered to be one that stopped the crying (Kirkland, 1985). Not once was it suggested that crying might serve an important physiological or emotional function. The assumption that all crying should be stopped has been seriously questioned in the author's book, *The Aware Baby* (Solter, 1984). The present article discusses traditional explanations for crying and then presents evidence for a stress-release theory of crying.

TRADITIONAL EXPLANATIONS FOR CRYING There are numerous traditional explanations for seemingly inconsolable crying with no discernible medical cause. Three of the most common theories offer explanations based on gastrointestinal, allergenic, or psychosocial factors. Perhaps the most common of these explanations is the gastrointestinal theory, which states that infants cry because they have abdominal pain (Illingworth, 1954). The term "colic," originally referring to abdominal pain, has become essentially synonymous with crying behavior. A "colicky" baby is one who fusses and cries a lot. Thus, parents are led to believe that whenever their baby cries for no apparent reason, he or she must be suffering from abdominal pain. A possible evolutionary explanation for colic has recently been proposed. The size of the human brain, combined with the limitations of the size of the human pelvis due to our upright stature (cephalopelvic size incompatibility), have resulted in selective pressure for human infants to be born at progressively earlier stages in their development

(Trevathan, 1987). The digestive system of human neonates would have had to undergo selection for accelerated maturation fairly recently in human evolution, and gastrointestinal absorption may still be less than optimal in some infants, resulting in discomfort and crying (Peters, 1994). This theory, although intriguing, does not fit with Dr. Spock's observation that, "The strange thing is that the colicky or crying baby usually prospers from the physical point of view. In spite of hours of crying, he continues to gain weight . . . better than average" (Spock, 1976). This is not what one would expect from infants with marginally-functional digestive systems. Furthermore, no gastro-intestinal malfunction has been found in babies who cry extensively. The digestive systems of these babies are not different from those of babies who cry less (Jorup, 1982), and neither constipation nor diarrhea has been found to be associated with so-called "colicky" babies (Wessel, 1965). To further counter the colic theory, there is evidence that many older babies continue to have crying episodes, even though their digestive systems would presumably be fully mature by then, and the babies would be assimilating a variety of solid foods. In an extensive survey of crying babies, only 25% had stopped by three months of age, and 25% were still crying at nine months of age (Kirkland, 1985). Another survey of 80 normal babies found that crying peaked at six weeks of age, but that, at 12 months of age, the babies still cried almost an hour a day on the average, and for no discernible reason (Brazelton, 1985). The explanation of crying being purely the result of an immature digestive system, therefore, is inadequate. Related to the gastrointestinal theory is the allergenic theory. When infants are bottle-fed, an immediate suspect is an allergy to cow's milk protein. However, when 32 normal, 4-week-old infants with colic were switched from cow's milk to soy milk, there was no reduction in either the duration or frequency of crying, or in intestinal gas production (Barr et al., 1987b). In spite of this finding, it is known that some babies are allergic to cow's milk, and this possibility should be considered in all cases of extensive crying. However, crying is not usually the only symptom. Cow's milk allergy produces a myriad of other symptoms that can include a tender abdomen, abnormal-looking bowel movements, poor weight gain, rashes or eczema, a runny nose, and wheezing. The possibility of lactose intolerance should also be considered when a baby (whether breast-fed or bottle-fed) cries extensively and fails to thrive. Some breast-fed infants react to the minute quantities of cow's milk protein found in the breast milk after the mother consumes dairy products, although studies performed on this have been contradictory and inconclusive. One study with twenty mothers of breast-fed infants with persistent crying found no reduction in the amount of infant crying when the mothers avoided cow's milk (Evans et al., 1981). Another study found that about 30% of babies diagnosed with severe "colic" cried less after all dairy products were eliminated from their mother's diet. However, when a double-blind crossover follow-up was done, in which the mothers swallowed capsules containing either cow's milk, whey, protein, or potato starch, several infants did not begin crying again, which indicates that the reduction in crying in those infants was unrelated to the elimination of cow's milk protein from the mother's diet (Jakobsson & Lindberg, 1983). The actual number of colicky babies sensitive to cow's milk protein was therefore closer to 20%. Many mothers report that their breast-fed babies cry less when certain other offending foods are eliminated from the mothers' diets. The foods most commonly cited are caffeine, alcohol, eggs, nuts, citrus, legumes, onions, strawberries, wheat products, and grapes (Kitzinger, 1989). In one study, the crying levels of some breast-fed infants were significantly higher after the mothers had consumed chocolate or fruit (Evans et al., 1981). However, unless the foods are first eliminated and then reintroduced in the mother's diet to see if the crying increases, one can never be certain that the mother's consumption of the food actually caused the crying. Nevertheless, there does seem to be evidence that food allergies and sensitivities can be a possible factor in the etiology of infant crying, although this fails to account for the majority of cases. The most common psychosocial theory of crying implies that babies cry because their mothers are lacking in love or confidence, or are anxious or hostile. However, the studies are once again inconclusive. Although correlations have been found between mothers' lack of confidence and anxiety levels and the amount of crying by their infants (Stewart, 1954; Lakin, 1957), it is quite likely that a mother's lack of confidence could be the result of having a crying baby, rather than the cause. In fact, another study found no discernible

personality differences soon after birth between mothers whose babies cried a lot and those whose babies did not. However, by the time the babies were three months old, mothers whose babies cried extensively felt less warmly towards their babies, and less confident than those in the comparison group. By six months postpartum, when the crying had diminished, this difference in confidence levels was no longer significant (Shaver, 1974). Another study investigating maternal personality and emotional factors failed to find any significant correlation between a mother's level of anxiety and the amount of crying by her baby (Paradise, 1966). Thus, the various traditional explanations for crying during infancy are inadequate, and the majority of cases of extensive crying remain unexplained. According to Dr. Spock, "We don't know the basic cause of most colic or irritable crying" (Spock, 1976).

CRYING AS TENSION-RELEASE MECHANISM A primary function of crying is to communicate needs and discomforts that require a caretaking intervention, such as feeding, holding, stimulation, or a change in position. When an infant expresses a need by crying, it is the caretaker's responsibility to discern the infant's need, and to satisfy it as accurately and as promptly as possible. However, some babies continue to cry even though they are being held and all imaginable needs have been filled. This paper proposes a secondary function of crying, namely that of stress-release mechanism (Solter, 1984). It is quite likely that crying allows babies to release the pain and tension resulting from physical or emotional stress and trauma. As an illustration, babies typically cry when a vaccination is administered, but also for several minutes afterwards. In fact, the crying may last much longer than the actual physical pain, because there is emotional pain as well, consisting of fear, confusion, indignation, anger, and perhaps a sense of betrayal. The physiological process of crying allows all of these feelings, in addition to the physical pain itself, to be discharged. Many experts agree that crying during infancy is an important outlet for accumulated tensions and frustrations, and that it is not detrimental to the infant. Dr. Brazelton writes, "The cyclic timing of . . . crying periods, plus the infant's determination to cry them out, are strong evidence to me that he is expressing some inner need to cry or let off tension" (Brazelton, 1969). Magda Gerber, founder of Resources for Infant Educators, advises that "All healthy babies cry. We would worry if they didn't cry . . . Do not want to stop the crying. Respect the child's right to express feelings" (Gerber, 1979). Sheila Kitzinger writes, "For a baby the only way of discharging this intolerable build-up of tension is to cry. Crying enables the tension to be released . . . And the baby feels better afterwards" (Kitzinger, 1989).

RESEARCH ON THE BENEFITS OF CRYING There is considerable scientific research on the physiological and psychological effects of crying. This evidence supports the theory that crying is beneficial and serves as a natural stress-release mechanism. Dr. William Frey, a biochemist researching tears and the lacrimal glands, compared tears shed for emotional reasons ("emotionally-induced tears") with those shed because of an irritant such as cut onion ("irritant-induced tears") (Frey & Langseth, 1985). Adult subjects watched a sad movie and collected their own emotional tears in a test tube. These same subjects were subsequently exposed to cut onions in order to produce irritant tears. The biochemical analyses of the two kinds of tears revealed statistically significant differences, specifically higher protein concentrations in the emotionally-induced tears. Further analyses of emotionally-induced tears revealed the presence of certain hormones and neurotransmitters that are found to be present in the body during stress. These substances serve to prepare the various body organs to cope adaptively with stress. However, since they are no longer needed after the stressful event is terminated, their continued presence would maintain the body in a state of needless tension and arousal. Dr. Frey concluded from his research that the purpose of crying in response to stress ("psychogenic lacrimation") is to remove waste products from the body through tears, just as waste products are excreted by urinating and defecating. Crying, therefore, serves the purpose of restoring the body's chemical balance after a stressful event has occurred. Sweating is another mechanism by which the body rids itself of chemical substances. Physiological studies have been performed to measure fluctuations in blood pressure, pulse rate, basal body temperature, and brainwave patterns during crying in adults. The subjects were adults involved in specific kinds of psychotherapy, during which they cried and raged, sometimes for an hour or more. Measures taken before and after these therapy sessions revealed lower blood pressure, pulse rate, and body

temperature, and more synchronized brain-wave patterns than in a control group of people who exercised vigorously for an equivalent period of time (Karle, Corriere, & Hart, 1973; Woldenberg et al., 1976). As these are generally considered to be measures of tension, the conclusion from these studies is that crying serves to reduce tension. If crying removes excess chemicals from the body and also reduces tension, one would expect it to be related to physical and psychological health. In fact, Dr. Frey has suggested that the suppression of tears might possibly lead to an increased susceptibility to physical and psychological problems (Frey & Langseth, 1985). Studies have confirmed this. One survey found that healthy people reported crying more (and had a more positive attitude about crying) than those who suffered from ulcers or colitis (Crepeau, 1980). There are also documented cases of a relief of asthmatic symptoms and a disappearance of hives when the patient began to cry (Doust & Leigh, 1953; Graham & Wolf, 1950). It has been found that children suffering from various forms of trauma benefit from therapy that allows the natural stress-release mechanism of crying (Emerson, 1989; Levine, 1994; Jewett, 1982). Severely disturbed children also benefit from crying. Several therapists have noted profound and rapid improvements in autistic children after they were allowed and encouraged to cry and rage during holding therapy sessions (Waal, 1955; Zaslow & Breger, 1969; Welch, 1983), and children with extreme behavior problems have also been cured with similar holding therapy (Magid & McKelvey, 1987). A rare hereditary disease, the Riley-Day Syndrome (also known as familial dysautonomia), makes children unable to shed tears. These children typically sweat profusely and salivate to the point of drooling. Some are prone to vomiting (Riley et al., 1949). It is as if their bodies have to compensate for the lack of tears by excreting toxins in other ways. Prolactin, a hormone that plays an important role in lactation, has been found to act directly on the tear glands and to help regulate crying (Frey & Langseth, 1985). The higher the prolactin concentration in the body, the lower the crying threshold, and the greater the tendency to shed tears. This may partly explain why many women find, during the postpartum period, that they are more prone to crying than usual. Perhaps this is a built-in, physiological mechanism serving the purpose of reducing the concentration of stress hormones in the breast milk by allowing women to excrete these substances through tears. These different areas of research all support the conclusion that crying is a necessary and beneficial physiological process, which allows people to cope with stress, and can be considered an inborn healing mechanism. Although newborn infants typically do not shed tears when they cry until they are several weeks old, they do sweat profusely during crying spells. Furthermore, studies have shown that, in three-day-old normal infants, there is improved oxygenation to the brain during crying spells, resulting from the increased cerebral blood volume that occurs during crying (Brazy, 1988).

SOURCES OF STRESS AND TRAUMA DURING INFANCY

It was proposed earlier that an important function of crying during infancy may be to resolve past traumatic events. There are six major categories of trauma or stress during infancy.

Pre- and Perinatal Trauma

The first kind of stress is that caused prenatally and during the birth process. The field of prenatal psychology has shown that babies are sensitive, intelligent, receptive, and extremely vulnerable before birth (Verny, 1981; Chamberlain, 1992). Maternal stress levels during pregnancy have been found to correlate with the amount of crying in the infant. In one survey, almost half of the mothers whose babies cried extensively reported having been under considerable ongoing stress during pregnancy. These stresses included living in poverty, frequent quarreling with a spouse, caring for a dying parent, being pressured either to have an abortion or give the baby up for adoption, or excessive worrying about the baby. None of the mothers whose babies cried less frequently reported any unusual stress during pregnancy (Kitzinger, 1989). Birth itself can be an extremely painful, confusing, and frightening experience for infants. The major kinds of birth trauma result from being drugged, removed by forceps, Cesarean delivery, experiencing prolonged labor, and anoxia. After birth, it can be frightening and confusing for the newborn to experience sudden coldness, brightness, rough handling, harsh sounds, or separation from the mother (Janov, 1983). Medical interventions such as electronic fetal monitoring, heel-sticks, eye drops and circumcisions are also distressing to infants. Dr. William Emerson, an expert on prenatal and birth trauma, found that 55% of a sample of 200 children showed signs of moderate to severe birth

trauma (Emerson, 1987). Traumatic births have a potential for causing life-long problems. It is now known that there is a correlation between perinatal complications and later susceptibility of children to emotional and behavioral problems (Batchelor et al., 1991). There is some evidence that schizophrenia and violent crimes are caused in part by stressful conditions at birth (Mednick, 1971), and near-death experiences at birth have been found to correlate with later suicidal behavior (Roedding, 1991). A possible link between birth trauma and physiological ailments has been proposed, including conditions such as angina, asthma, colitis, migraines, joint pains, thyroid imbalances, and upper respiratory diseases (Janov, 1983). It has been found that babies whose mothers have experienced a difficult delivery tend to cry more than babies whose mothers had a more pleasant delivery. In one survey, mothers whose babies cried the most were significantly more likely to have had obstetrical interventions or made to feel powerless during birth (Kitzinger, 1989). Another study showed that babies who had problems at birth were more likely to wake up crying frequently at night during the first 14 months (Bernai, 1973). Babies whose mothers were given epidural anesthesia during labor cried significantly more during the first five days than babies of unmedicated mothers, although the difference was no longer significant at ten days of age (Murray et al., 1981). A possible physiological correlate of pre- and perinatal trauma is that these infants are in a continual state of tension resulting from an overactive sympathetic nervous system and an excess of stress hormones. This biological "fight or flight" response may have been adaptive in helping the infants survive the birth trauma, but may last longer than needed, resulting in physiological problems. This increased sympathetic effect might account for the sleep disorders commonly observed in birth traumatized infants. Another consequence might be sluggish digestion resulting from the inhibitory effect of the sympathetic nervous system on the digestive organs. This would provide renewed credibility for the colic theory discussed earlier, but with the underlying cause of abdominal discomfort being, in this case, emotional stress. The extensive crying that occurs in babies following a traumatic birth could therefore be a biological stress-release mechanism which allows excess chemicals to be excreted from the body (through sweat and eventually tears), and which also provides a release of energy, thereby completing the physiological stress/relaxation cycle. If the birth trauma was severe, the baby may have long crying spells every day for several months before the trauma is completely resolved and homeostasis is attained. Babies traumatized by birth can be healed through therapy involving gentle birth simulating massage and other techniques in an empathic atmosphere that accepts their crying (Emerson & Schorr-Kon, 1993). Unfilled Needs A second source of stress during infancy is unfilled needs, specifically the need for being touched and held. There appear to be critical periods in human development during which certain needs must be met in order for optimal development to occur. The first nine months after birth are a critical period for the need to be touched and held. In extreme cases, a lack of sufficient physical closeness during infancy can result in higher mortality rates (Spitz & Wolf, 1946), mental retardation (Provence & Lipton, 1962), stunted growth (Gardner, 1972), and a propensity for violence (Restak, 1979). Unfilled needs for closeness can occur when newborns are placed in incubators, or during later hospitalizations. Insufficient holding can also occur to a lesser degree under so-called normal conditions because of parents' worries about "spoiling" their baby, combined with the isolation of parents in industrialized cultures and the inherent difficulties of attending to an infant 24 hours a day. Studies have shown the positive effects of increased physical contact with infants. When increased tactile stimulation (stroking) was given to low birth weight infants for ten days, the infants were more alert, more consolable, and gained weight faster than control groups who did not receive extra handling (Solkoff & Matuszak, 1975; White & Labarba, 1976). In an interesting study of the effects of increased carrying on infants, mothers who were asked to carry their infants an extra two hours per day reported one hour less crying per day at six weeks of age than a control group of mothers who had been asked to provide only increased visual stimulation (Hunziker & Barr, 1986). Some parents report decreased crying after they begin taking their babies to bed with them, thereby providing close physical contact during the night (Kitzinger, 1989). Some babies have tactile defensiveness: they seem to reject touching or closeness. These babies have almost certainly been traumatized either by birth or by unmet needs for

closeness following birth. Rather than interpret these babies' cries as a desire to be left alone, gentle holding and stroking will allow them to release and resolve their rage and terror (Solter, 1984). Overstimulation Information overload is a potential source of stress for infants. While appropriate stimulation is vital for optimal development, it is now recognized that more is not necessarily better, especially in the case of very young or preterm infants (Korner, 1987; Spinelli, 1987). Stimulation that is only moderately different from previous experiences is tolerated the best. One study found that bright lights and loud noises were overstimulating for preterm infants, while gentle rocking and a heart beat tone appeared to be beneficial (Barnard, 1973). Infants are vulnerable to overstimulation because the nervous system is not fully mature at birth. This may be due to the recent selective pressure for ontologically earlier birth resulting from the cephalo-pelvic size incompatibility in humans which was discussed earlier. Furthermore, because infants lack information and experience about the world, new stimuli cannot be easily integrated into established cognitive structures. Brazelton has observed that fussy periods tend to occur after active efforts by infants to maintain alert and responsive states, and he proposed that "this period of active fussing . . . could then be seen both as a period for discharging overstimulation and for reorganization toward homeostasis " (Brazelton, 1985). He also made the interesting observation that, following periods of crying, infants tend to sleep more deeply. In addition to helping the infant release tensions, crying following overstimulation may also be a mechanism by which the infant protects itself from further stimulation. In many traditional cultures, there is a period after childbirth, lasting up to six weeks, during which the new mother is kept with her baby in a warm, quiet, and sometimes dark place, while other women tend to her needs (Kitzinger, 1989). This not only guarantees that the new mother will receive adequate rest and time to bond with her infant, but it also protects the newborn infant from overstimulation, and allows time for recovery from possible birth trauma. Adding to this the fact that there is usually close physical contact between mother and infant during most of the first year of life, it is not surprising that the babies in these cultures are reported to cry less than those in industrialized ones (Kitzinger, 1989). The latter are exposed to an overwhelming array of stimuli beginning in a noisy hospital, and continued at home with the sounds of other family members, visitors, television sets, radios, ringing telephones and doorbells, flushing toilets, showers, dish washers, vacuum cleaners, and law mowers. Furthermore, modern infants are expected to endure these sounds while being separated from their mothers' body with its familiar heartbeat, digestive sounds, and voice. Developmental Frustrations A fourth source of stress results from developmental frustrations due to babies' helplessness and lack of competence. According to Spitz, "Frustration is inbuilt in development" (Spitz, 1965). The intent to master a new skill always precedes the ability to learn it. This discrepancy is an ongoing potential source of frustration for babies. Thus, a three-month-old might become frustrated when attempting to grasp an object, or a six-month-old when trying to crawl. Daily frustrations such as these build up and are then released in periodic bouts of loud crying. Physical Pain Physical pain is a fifth possible source of stress in babies' lives. Infants often experience rashes, teething pain, middle ear infections, and, once they become mobile, mild abrasions. Abdominal pain (colic) is not to be ruled out entirely, as it is probably experienced by some infants some of the time. Crying is a baby's way of communicating that pain is present, but it is also a natural recovery process that must be allowed to take place before full healing can be expected. Analgesics may be necessary at times, but whenever possible medical care should be supplemented with a supportive atmosphere that is accepting of babies' need to cry. Frightening Experiences A sixth source of stress is frightening experiences (other than a traumatic birth). Newborns are easily startled by sudden movements or noises. It is important to avoid these, if possible, and to provide comfort and reassurance if they should occur, but also to allow crying to take place following a frightening stimulus. Babies are easily frightened by parents' quarrels, by being yelled at, hit, handled roughly, sexually abused, or mistreated in other ways. It is likely that babies are also affected by parental illness, stress, anxiety, anger, or depression that manifests itself as unloving or inconsistent care. Further anxiety and stress can be produced when parents try to mold and socialize their babies' behavior prematurely, when transitions are too abrupt, or when the baby's natural sleep cycles are interrupted. Once

attachments are formed, by six or eight months of age, separations from primary caretakers can be terrifying for infants. Although this separation anxiety is considered a sign of normal, healthy development (Ainsworth et al., 1971), it can be a new source of stress in babies' lives. To conclude, infancy is far from being a stress-free stage of life. Babies are extremely vulnerable because of their lack of information and skills and their total dependence on others to meet their needs. The ideal goal would be to fill all needs and prevent all stress in babies' lives. But some stress is inevitable, no matter how loving the parents are. Thus, every baby needs to cry to some extent.

RESPONDING TO CRYING For any given crying episode, it is imperative to check for immediate needs as well as for pain and discomfort. Once all possible needs, as well as medical causes, have been eliminated, it is safe to assume that the crying is serving a stress-release and healing function. Although the exact cause of the crying may be difficult to discern, parents and caretakers nevertheless have an important role to fulfill as nurturers and listeners. Babies benefit immensely from being held during crying episodes by an attentive and empathic person who can calmly acknowledge and accept their feelings. The approach recommended is similar to the holding therapy for deeply disturbed children (mentioned earlier). Holding therapy need not be reserved for emotionally disturbed children. The approach can be used for normal children and infants as well (Welch, 1988). Writing about babies who cry extensively because of maternal stress during pregnancy, Kitzinger says, "What you can do is to contain your baby's distress, hold and make it safe by acknowledging and accepting the pain without trying to blot it out. It is not a question of rushing around trying one strategem after another to make the baby stop crying . . . It does not help to struggle to stop the baby crying" (Kitzinger, 1989). The importance of closeness and acceptance during crying spells cannot be overemphasized. In the past, parents were commonly advised not to hold their babies every time they cried, and to ignore them during long crying spells, for fear of "spoiling" them. It was believed that no harm could come from leaving babies in their cribs to "cry it out" alone. Evidence from adults in Primal Therapy who have relived their infancy indicates otherwise. Patients have remembered crying alone in their cribs at night, and these memories are typically accompanied by tremendous fear and grief (Janov, 1973). When babies' cries are not responded to, the inevitable feelings are those of extreme powerlessness and terror. Having no knowledge of the fact that an adult is in an adjacent room, this isolation is experienced by babies as possible imminent death, because of their total dependence on others for survival. Babies should therefore never be ignored while crying. More recently, parents have been advised to respond to every cry, but to attempt to "soothe" or "quiet" the baby, past the point of filling immediate needs. Thus, parents have been misled into thinking that their babies need to be continuously walked, rocked, jiggled, or nursed. A "high-need" infant may simply be one who has more stress than average (resulting perhaps from pre- or perinatal trauma), and who needs to cry extensively in order to discharge tensions and restore physiological and psychological homeostasis. Several parental feelings can interfere with the ability to be empathic listeners during babies' crying episodes. Most parents desperately want their babies to be "happy". Thus, those who do not understand the beneficial aspects of crying may feel anxious or incompetent when their baby cries inconsolably. Some parents interpret the crying as rejection, and conclude that the baby does not want to be held. If the parents were distracted from their own attempts to cry as infants, or if they were ignored or punished for crying, there will understandably be a strong urge to repress their own infant's crying in similar ways.

HOW CRYING BECOMES REPRESSED It has been said that Western civilization is a "non-cathartic" culture (Heron, 1977). Few people have been allowed to do all the crying that was needed as babies and children because their well-meaning, but misdirected, parents and other caretakers tried to repress most attempts at this kind of emotional release. Some methods, such as hitting, shaking, yelling, or ignoring the infant, inflict additional stress and pain. Others, such as rocking, walking, using pacifiers, overly frequent feedings, or nursing for "comfort" appear to be more loving and humane. However, most of these techniques serve only to postpone the crying by temporarily distracting the infant. All caretaking interventions that serve the purpose of repressing emotional healing through crying are damaging to the infant in the long run because they interfere with the natural tension-release mechanism. The practice of drugging crying infants has

been carried out for centuries. In the past, in Europe, parents routinely gave alcohol or opium to their infants to get them to stop crying and go to sleep. Wet-nurses commonly smeared their nipples with opiate drugs so the baby would sleep. Popular preparations containing opium were readily obtained from pharmacists under the names of "Laudanum," "Paregoric," and "Godfrey's cordial." Many infants became addicted, while others died from overdoses (Kitzinger, 1989). Nowadays, pediatricians frequently prescribe drugs for crying infants. The medications given for "colic" include sedatives (such as dicyclomine-hydrochloride, belladonna and phenobarbital), antispasmodics, antihistamines, antacids, and analgesics. Twenty-five percent of babies have been given sedatives by the time they are 18 months old (Kitzinger, 1989). Not only do these drugs interfere with a vital healing mechanism, but they can have dangerous side-effects, and make the babies lethargic and unresponsive. As children grow older, the messages to deny emotional or physical pain (thereby preventing full healing of the pain) are communicated through verbal phrases that are often passed on from generation to generation. Expressions such as "Big boys don't cry," "Be brave," or the commonly heard threat, "If you don't stop crying, I'll give you something to cry about," tell children to stop feeling and expressing painful emotions. Because of these various attempts by parents and other caretakers to curtail crying episodes, most children eventually learn to suppress their own crying. In fact, by six months of age, most babies already show signs of certain repetitive behaviors, called "control patterns," that serve the purpose of repressing their own strong emotions (Solter, 1984). Common control patterns in babies include thumb-sucking or pacifier-sucking and frequent demands to nurse for comfort rather than for hunger. Other control patterns include head-banging, self-rocking, and attachment to an object such as a special blanket. The use of pacifiers as a method for repressing crying in infants is widespread. It is customary for medical personnel to place pacifiers in babies' mouths during painful medical procedures, such as circumcisions, vaccinations, and heelsticks. In one study it was found that infants given pacifiers during heelsticks cried less during the procedure than a control group who were not given pacifiers (Field & Goldstein, 1984). It is hardly surprising that pacifiers reduce the amount of crying, since sucking is incompatible with crying. The sucking reflex is so strong in newborns that it dominates over the need to cry. The fact that the babies with pacifiers cried less, however, does not imply that they experienced less pain. Although it is more pleasant and convenient for medical personnel to have calm infants during medical procedures, the question remains as to whether such an artificial suppression of the infants' tendency to cry out in pain is actually in the best interest of the infant. Thumb-sucking and pacifier-sucking have traditionally been considered to be positive "self-comforting" behaviors, when in fact they are control patterns that repress the healthy expression of emotional or physical pain in an environment that does not fully accept crying. A common technique used by mothers to "soothe" babies during crying spells is frequent nursing for comfort, rather than for purely nutritional purposes. When used excessively, this can cause overeating to become a control pattern, resulting in a lifelong tendency to repress feelings by means of food. Babies should certainly be fed if hunger is suspected, but not all fussiness indicates hunger. Nursing purely for comfort can lead, not only to obesity, but also to the psychological repression of painful emotions. In a study of mothers' interpretation of infant crying, three kinds of crying were recorded (pain, hunger, and startle) and played back to the mothers. They incorrectly perceived an excessive number of samples as hunger cries (Ostwald & Murry, 1985). This common misinterpretation of crying would explain the tendency of many mothers to overnurse their infants. Some parents find, to their dismay, that nursing a baby to sleep only postpones the crying. The baby wakes up several times crying during the night. When babies over six months of age wake up frequently crying at night, it is often because they are not allowed sufficient opportunity to release tensions by crying during the day and at bedtime (Solter, 1984). The problem of night awakenings in older babies can be solved by nursing the baby a little earlier in the evening in order to prevent falling asleep at the breast, and then replacing the bedtime nursing with loving holding, while accepting any crying that occurs. Based on the author's work with parents, this usually brings dramatic results, and has proven to be a successful method for preventing night awakenings. Although infants in primitive cultures cry less than those in industrialized countries, it is possible that the need to cry exists, but is

repressed by frequent nursing, serving the function of a pacifier. In cultures where the infants are nursed several times per hour for several years, there is often considerable crying when the child is weaned, indicating that nursing has become a control pattern. A !Kung woman (nursed frequently for several years) was interviewed about her childhood. She remembered crying extensively during her mother's subsequent pregnancy (when she was weaned) and following her brother's birth (Shostak, 1981): When mother was pregnant with Kumsa, I was always crying. I wanted to nurse. Once, when we were living in the bush and away from other people, I was especially full of tears. I cried all the time ... (After the birth): I wanted the milk she had in her breasts, and when she nursed him, my eyes watched as the milk spilled out. I'd cry all night, cry and cry until the dawn broke. Some mornings I just stayed around and my tears fell and I cried and refused all food. That was because I saw him nursing. Perhaps the crying following weaning in these cultures is the child's way of "catching up" on crying that needed to occur during infancy. A time-honored method of "soothing" infants is by means of rhythmic vestibular stimulation such as bouncing, jiggling, or rocking. Movement stimulation is vitally important for infants' development, but if it is frequently the parental response to crying, it can result in a suppression of the kind of crying that is beneficial for infants. Furthermore, babies can become accustomed to this kind of stimulation and eventually begin to provide their own movement when feeling sad, anxious, or frustrated. This could be the possible origin of self-stimulating behaviors such as head-banging, self-rocking, and, later on, general hyperactivity. It is of interest to note that parents typically provide more movement stimulation for their infant sons than for their infant daughters (Fagot & Kronsberg, 1982). Coincidentally, hyperactivity has been found to be much more common in boys than in girls (American Psychiatric Association, 1980). It seems likely that the more frequent vestibular stimulation for infant boys is used by parents as a means of repressing crying, thereby resulting in a movement control pattern that manifests itself as hyperactivity during the school years. Rhythmic and repetitive actions are characteristic of most control patterns during infancy. This is true, in particular, for any kind of sucking (whether it be on a thumb, finger, pacifier, bottle, or breast), and for self-stimulating behaviors such as self-rocking and head-banging. It seems that infants can effectively "soothe" themselves with these rhythmic techniques, which have almost a hypnotic effect. Infants who suck their thumbs or a pacifier often appear to be in a trance-like state, with decreased responsiveness. However, these mechanisms do not allow a release of the underlying accumulated stresses, so the tranquilizing effect is only temporary. The infants will need to resort to the same mechanisms repeatedly in order to cope with the tensions. Thus, these control patterns during infancy can be considered a form of psychological numbing or dissociation, a process which allows people to effectively shut off pain, but not to resolve it. The resolution of stress and trauma can be accomplished only by emotional release, specifically crying, which infants do spontaneously once they are feeling that their emotions will be accepted. Based on the authors' extensive experience with infants, it has been observed that, when thumb-sucking infants are given empathic attention and permission to cry, they spontaneously remove their thumb from their mouth in order to do so. There is an inverse correlation between the degree of responsiveness in infants and the frequency of control patterns. Although most infants have well-established control patterns by six months of age, this is by no means universal. Those who have been encouraged to cry freely in someone's arms since birth do not engage in repetitive and rhythmic activities such as non-nutritive sucking or self-rocking. These infants are typically alert and responsive during their waking hours. At the other extreme are autistic children who show almost total lack of responsiveness to other people. They typically engage in ritualistic and repetitive behaviors such as hand-clapping, self-rocking, head-banging, masturbation, or spinning (O'Gorman, 1970). These can be considered control patterns that are operating most of the time. Autistic children often have a history of early trauma such as a difficult birth, an early separation from the mother, or an illness. Interestingly, these children react with rage when their ritualistic behaviors (control patterns) are interrupted. Their repressed feelings, normally kept firmly under control through their rhythmical behaviors, are then discharged through crying and raging. This is precisely what is accomplished during holding therapy discussed earlier. Control patterns that begin during

infancy take on different forms as children grow. Thumb-sucking is often replaced by nail-biting by the age of 14 (MacFarlane et al, 1954). In adults, control patterns can take the form of habits such as smoking, drinking, or overeating. These may have their origins in infantile control patterns of sucking on a thumb, pacifier, breast, or bottle, but transformed into more socially acceptable behaviors for adults. Nevertheless, the same mechanism of repression is at work for the adult as for the infant. It is extremely difficult to break oneself of these habits (which are also physiological addictions in the case of nicotine or alcohol) without allowing oneself to release the repressed emotions through crying. Babies given sedatives for "colic" may be at high risk for drug abuse as teenagers and adults. When children's very first attempts to release their painful feelings are repressed with powerful, mind-altering drugs, it would not be surprising if they turned to drugs later on in life in order to cope with their feelings.

CONCLUSION To conclude, crying serves a dual purpose during infancy. A primary function of crying is to communicate vital and basic needs during the preverbal years. The second function has been largely unrecognized until recently. Research has shown that crying is a beneficial physiological process that plays a central role in the resolution of trauma and the restoration of homeostasis. The communication function of crying is gradually replaced by language as babies grow older, but the healing function of crying is not. People of all ages continue to benefit from this kind of emotional release. Thus, in contrast to the widely-held belief that the clinical management of infant crying should aim at quieting infants, this paper proposes that, once all immediate needs have been met, and all medical problems ruled out, crying infants should be held and allowed to cry as much as needed. The impact of early trauma need not have devastating, life-long consequences. Infants have the ability to heal themselves fully through the natural tension-release mechanism of crying, from the effects of prenatal, birth, and other early traumas, as well as from the stresses of everyday life. Although crying is generally considered to be a necessary part of the grieving and recovery process for adults in psychotherapy (Weizman & Kamm, 1985), and also for children past infancy (Jewett, 1982), this acceptance of the need to cry has not generally been extended to preverbal infants. Could it be that we are reluctant to give infants full human status? Are we afraid that they are too immature to process their painful emotions in this manner? Perhaps we prefer to think of infancy as a stress-free, blissful state, thereby failing to acknowledge the intensity and depth of infant emotional pain. Certainly much confusion has arisen from the fact that infants are non-verbal, and crying is their primary way of communicating their needs. It is erroneously assumed that for every crying episode an immediate need is being expressed. This belief leads to the incorrect conclusion that a continuation of the crying would imply that the caretaker has not adequately met the infant's needs. If we probe into the depths of our own psyches, we may find the major reason for our inability to recognize infants' need to cry, and our unwillingness to allow them this vital release. Since few of us were allowed to express our own pain when we were young, an infant's cry cannot help but trigger our own repressed grief, anger, or fear. Our own inner child is yearning to cry out and be heard. Parents and caretakers must be prepared for the intensity of their own emotions, and encouraged to release their own pain. With conscious effort, it is possible to reverse the insidious tendency, passed on from generation to generation, to repress babies' efforts at emotional healing through the vital mechanism of crying.

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