

# Ethics in Early Life Care and Lactation Practice

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## Keywords

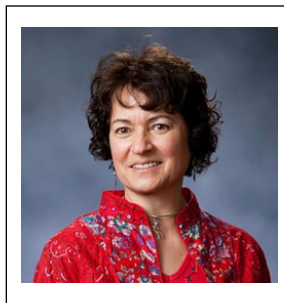
breastfeeding, ethical action, ethical decision making, child development, evolved developmental niche, lactation, professional ethics

In this editorial, we review briefly principles and concepts within health care ethics and approaches to moral decision making and behavior. We apply these principles and concepts to the realm of breastfeeding and lactation and do so with an emphasis on young children's needs because many adults are unaware of children's evolved needs. In addition, we point out how ethical actions at each level of the social ecological model could help adults implement what children need in 2020 and beyond.

## Baselines for Babies

Adults can be misled by the findings of research studies if no baselines are kept in mind for research design or interpretation of results. Where do we find a baseline for early care? How do we know what children need for optimal normal development? Every animal evolved a developmental system for the young that optimizes normal development. Humans are no different.

Humans emerged from the social mammalian line 20 to 40 million years ago and evolved to be bipedal, which shrank the pelvis and made it necessary for children to be born highly immature in comparison to most animals and other hominids—human infants look like fetuses of other animals until around 18 months of age, for example, in terms of skull fusion, brain development, ability to feed oneself (Konner, 2005; Trevathan, 2011). As a result, humanity's developmental system evolved to provide intensive care, such as the 24/7 type of care listed in Table 1. Anthropologists have noted these common childrearing characteristics around the world among nomadic foragers, the type of society that represents 99% of human genus history—prior to the last 10,000 years or so when settled agriculture societies began to be established—and that is still present around the world (Hewlett & Lamb, 2005). Most



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practices are 30 to 40 million years old as part of social mammalian developmental systems and for humans have been called the “hunter gatherer childhood model” (Konner, 2005). More recently, the set of practices has been named the *evolved developmental niche* (EDN) or *evolved nest* (e.g., Narvaez et al., 2019; Narvaez, Gleason, et al., 2013). The EDN can be considered a baseline for normal human child rearing (Narvaez, 2016). Each of the nest components has neurobiological evidence to show its importance for a healthy brain and body (e.g., Narvaez, Panksepp, Schore & Gleason, 2013), so lack of EDN experiences represents undercare for the human species (Narvaez, 2014; see Table 1). Human beings are especially complex, with the most extensive maturational schedule. What happens early often lasts a lifetime (Shonkoff et al., 2012). When children do not receive what they evolved to expect (i.e., the evolved nest), they are more likely to develop increased stress reactivity from poorly developed: vagal tone (Porges, 2011); hypothalamic pituitary adrenal (HPA) axis, the central stress response system (Lupien, McEwen, Gunnar, & Heim, 2009); and misdeveloped gene expression (Meaney, 2001, 2010).

In addition to the EDN and genes, humans receive, from their ancestors, a host of other inheritances such as epigenetic programming, developmental plasticity, basic needs, self-organization, microbiome, maternal ecology, cells and body

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**Table 1.** Humanity's Evolved Developmental Niche.

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 Characteristics of the evolved developmental niche (EDN; aka evolved nest)
 

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- The EDN represents “the reliable and repeatable features of stimulation and experience occurring in an organism’s developmental context . . . the set of ecological and social circumstances typically inherited by members of a given species . . . reconstructed in each generation . . . [serving] as a primary basis for the development and maintenance of . . . species-typical behavior” (Lickliter & Harshaw, 2010, p. 497)
  - Soothing perinatal experiences (e.g., calm gestation; at birth, no separation of baby from mother or painful procedures)
  - Affectionate touch: Carried or kept near others constantly; no negative (punitive) touch
  - Responsive care: Keeping infants and young children optimally aroused and content in order to keep biochemistry favorable for rapid growth and promote secure attachment to primary caregiver(s); perceiving and accurately interpreting infant’s cues
  - Breastfeeding on request, frequently (2-3 times/hour initially) for 2-5 years
  - Allomothers: Frequently cared for by responsive individuals other than mothers (fathers and grandparents, in particular)
  - Positive climate and social support: High social embeddedness
  - Self-directed social play in natural world with multiage playmates
  - Nature connection: Relationally attuned to local landscape
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Note. Table 1 was adapted from the following sources, which can be consulted for more information about the EDN: Hewlett and Lamb (2005); Lickliter and Harshaw (2010); Narvaez, Braungart-Rieker, Miller, Gettler, and Hastings (2016); Narvaez, Gleason, et al. (2013); Narvaez, Panksepp, Schore, and Gleason (2013); Narvaez, Valentino, McKenna, Fuentes, and Gray (2014).

plans, local ecology, and culture (Fuentes, 2009; Jablonka & Lamb, 2005; Margulis, 1998). The first half dozen of these are related to experiencing the EDN. Sensitive periods for various physiological systems occur through the early years, setting up epigenetic programming when the organism is most developmentally plastic. Meeting basic needs for the EDN supports optimal normal self-organization. Lactation and maternal physiological ecology are also particularly related to the microbiome infants develop, which is integrated with immune system function.

Now that we have established awareness of humanity’s heritage and a baseline for normal care, we turn to professional ethics. Babies have deep needs that are fulfilled by the EDN, an adaptation provisioned by a community. In the modern era, we can place health care and other caring professionals in that community. How is a professional to act in light of this knowledge?

## Professional Ethics

Professional health care ethics focuses on several overarching principles and related concepts (Beauchamp & Childress, 2013) that we can apply to lactation professionals. We review four principles: respect for autonomy (pp. 101–149), justice (fairness; pp. 249–299), nonmaleficence (do no harm; pp. 150–201), and beneficence (pp. 202–248). We note how they might influence professional behavior pertaining to lactation and treatment of infants.

### *Respect for Autonomy*

To respect a person’s autonomy is to acknowledge the person’s right to hold views; make personal choices; and engage in actions that are congruent with personal views, beliefs, and values. For a helping professional, to respect the autonomy of other persons involves negative obligations (i.e.,

refraining from actions that are not agreeable to the other) and positive obligations (i.e., providing information and support so that the other can make informed decisions; Beauchamp & Childress, 2013, pp. 106–107).

Babies have little capacity for autonomy but need to build it for life success. Initially, adult behaviors help babies develop capacities for autonomy they will exercise later. For example, after natural birth (no drugs or interference), babies placed on the mother’s abdomen make their way up to the breast, manipulate the nipple with their hand, and activate milk letdown. Because humans learn from acting on the environment, the newborn in this case begins to learn a successful pattern of responses within the local ecology that includes mother. Moreover, breastfeeding, in comparison to bottle feeding, puts baby in charge of how much will be consumed. In our ancestral environment, babies were carried in slings that allowed them to be in the midst of maternal and community activities but also allowed them to reach for the breast as needed (Hrdy, 2009). Feeding was frequent because human milk is thin, digested more easily and quickly than human milk substitutes (Clancy, Hinde, & Rutherford, 2013; Power & Schulkin, 2016).

Overall, children’s future autonomy as adults can be undermined if early care is not responsive to their needs. How is that possible? With undercare, they are less likely to develop well-functioning neurobiological structures. Self-regulatory systems can be misdeveloped and lead to long-term effects (e.g., Gleason & Narvaez, in press). Children are less likely to be self-controlled and intelligent, at least in social and stressful situations (Narvaez, 2014, 2016; Narvaez, Gleason, et al., 2013).

Parents may not know about the deep needs of babies because some new parents are not familiar with babies and do not receive parent education. Or the parenting of babies and children that the expectant parents have witnessed within their social network may have been negative examples with

respect to the EDN. Part of the professional's responsibility may be to educate the parents about their baby's needs and support them in meeting those needs.

### **Beneficence**

The principle of beneficence includes doing or promoting good, preventing harm, and removing conditions that are harmful or evil (Frankena, 1973, p. 47). Beauchamp and Childress (2013) described two rules of beneficence. The first, positive beneficence, is providing benefits to other people. The second, utility, requires people to balance costs, risks, and benefits to achieve the best possible results (pp. 151, 202).

For persons who have never been autonomous, which includes infants and very young children, the surrogate decision maker (i.e., the parents for most infants) should use the "best interest" standard (Beauchamp & Childress, 2013, pp. 228–229). The best interest of infants, apart from emergencies, is to provide the EDN. For example, separating parents and the newborn right after birth for procedures, which was the norm for decades in U.S. hospitals, violates the principle of beneficence for the parents and the newborn. Both can become depressed if, after birth, immediate physical contact is prevented due to not taking advantage of the adaptive post-birth hormonal magnetism that promotes attachment (Buckley, 2015). Acting insensitively to the infant's discomfort during the perinatal period violates the infant's best interests. For example, letting infants cry during procedures (outside a real emergency) not only contributes to infant distrust toward the world but can prime mothers to think that baby crying is not a critical signal for adult responsive intervention.

### **Nonmaleficence**

The principle of nonmaleficence is to avoid doing harm or evil to other persons (Beauchamp & Childress, 2013, pp. 150–152). Rules of nonmaleficence include refraining from: killing or incapacitating; causing pain, suffering, or offense; and depriving others of necessities of life (p. 154). Persons in the helping professions have an obligation to avoid imposing the risk of harm through negligent professional behavior (pp. 154–155).

To know what harm could be done, one must have a baseline of what is normal. The EDN provides a baseline for infant care. Authors of publications for expectant and new parents often act naïve about what is best for baby, as if we have no knowledge of how to promote baby well-being unless there is an experiment to tell us. This bias can mislead parents and health care professionals about what is good for babies. For example, Oster (2019), in a recent book, *Cribsheet*, attempted to guide new mothers with supposed scientifically based guidance about what works. She contended that breastfeeding does not matter in the long term.

The author, however, had no baseline norms for what human childbearing and child rearing look like. She cherry-picked research and did not critique study designs or analyses. Oster included a brief section on research methods and described the different designs of studies, which makes the reader think she must know what she is talking about: randomized controlled trials (RCTs), observation, case studies. She emphasized the "gold standard" for experimental science, RCTs. But this emphasis is misleading in determining what babies need. First, RCTs are useful for something new, like a new drug, for which there is no prior knowledge. But we have prior knowledge about child rearing—2 million to 20+ million years of it. We are social mammals whose line has been around for 20 to 40 million years and have evolved a developmental system (EDN) for rearing the young that helped our germ lines survive and thrive in the last 2 million years (Konner, 2005). Second, she fails to note that we cannot ethically randomly assign babies to the nest components (e.g., this baby will be carried all day, and this one left alone). So there are few studies of childrearing components that can meet the "gold standard." Again, we need to take an evolutionary, ethological, and deep history perspective on what is appropriate for child care.

### **Justice (Fairness)**

Drawing on the body of past philosophic thought, Beauchamp and Childress (2013) described justice as "fair, equitable, and appropriate treatment in light of what is due or owed to persons" (p. 250). Often, health care professionals seem ready to put adults' needs first, minimizing the needs of babies. For example, at birth, the newborn's discomfort often is not mitigated (Liu et al., 2007; Wagner, 2006) as health care professionals work through a checklist of procedures, even encouraging circumcision, without awareness of the impact on baby's long-term health and psychosocial development. So, one must ask, justice and fairness for whom? The rights of babies need to be placed centrally in the eyes of health care professionals and parents. However, unless the needs of the parent who gives birth and the coparent are met, they will not be capable of being the nurturing caregivers necessary for the evolved nest.

Justice-based reasoning has been studied by psychologists for a century. We discuss that next.

## **How Health Care Professionals Make Ethical Decisions**

Most people engage in reasoning about ethical issues and use some combination of decision-making approaches. Philosophers have described many approaches that are distinctive largely because of differences in emphasis. Three approaches are described below: a focus on universal principles, duties, and human rights; a focus on utility (i.e., the greatest good for the greatest number); and a focus on virtue.

**Table 2.** Neo-Kohlbergian Moral Judgment Schemas: Personal Interests, Maintaining Norms, and Postconventional.

Neo-Kohlbergian schemas and descriptions
<p>Personal interests schema: Decisions about what to do are based on what is advantageous to the individual in the situation (i.e., what will be rewarded), on equal exchanges with others, or on personal relationships (Rest, Narvaez, Thoma, &amp; Bebeau, 2000, p. 387)</p>
<p>Maintaining norms schema: Decisions about what to do are based on what will maintain societal relationships and societal norms (e.g., existing laws and procedures; Rest, Narvaez, Bebeau, &amp; Thoma, 1999, pp. 36–40)</p>
<p>Postconventional schema: Thinking at this level emphasizes the spirit of laws instead of the letter of laws; understanding that the status quo need not be maintained if alternative ideals and agreements can be established to bring about greater justice for all through fair application. When thinking at this level, “the person realizes that laws, roles, codes, and contracts are social arrangements that can be set up in a variety of ways” (Rest et al., 1999, p. 41) according to sharable ideals that are not “idiosyncratic or ethnocentric preference or personal intuition” but “are open to rational critique, and can be challenged by new experience, by logical analysis, and by evidence” (p. 42).</p>

### *Act According to Universal Principles, Duties, and Human Rights*

This type of reasoning has been widely studied by psychologists for about a century. Moral reasoning, as compared to the broader concept of morality, is a cognitive process that evolves as children develop into adolescents and adults (Inhelder & Piaget, 1958). It is influenced by the development of social perspective taking (Selman, 1971), formal education (Rest, 1979, pp. 107–113; Rest, Narvaez, Bebeau, & Thoma, 1999, pp. 64–70), social milieu (Jennings & Kohlberg, 1983), learning experiences with peers whose moral reasoning is more cognitively advanced (Blatt & Kohlberg, 1994), and diverse life experiences (Narvaez & Hill, 2010; Rest et al., 1999, pp. 124–127).

A helpful description of how adults reason about moral problems is provided by the neo-Kohlbergian framework, which is based on analyses of tens of thousands of respondents to the Defining Issues Test (Rest, 1979, 1986; Rest et al., 1999). The framework illustrates how people make decisions from three basic schemas or conceptual frames. The distribution of preferred schemas changes with age, education, and experience, whereby the use of the lower schema decreases as the use of the higher schemas increases (see Table 2). The advantage of the two higher level schemas is that more perspectives are taken into account and coordinated for greater justice.

An important concept underlying the principle of justice is honoring basic rights. Babies have the right to be given what they need—compassionate care from a welcoming community. They should not be isolated, untouched, or separated from their caregiver(s). They should not be subjected to painful experiences, such as cry-it-out techniques. Of course, they should receive the elixir of optimal development: human milk at the breast.

When health care professionals understand the EDN, they can see what rights babies should have, and notice how those rights may be violated routinely, even when there is no purpose for the violations. The baseline suggested by the nest

may move health care providers to provide parents with necessary support so that can provide the nest to their children. Baby-friendly hospital practices (Baby-Friendly USA, 2016; World Health Organization, 2017, 2018) are part of a supportive context for baby well-being.

What about parent needs? Certainly, professionals must be concerned about the needs of parents and support their well-being as well. Exhausted parents are less able to take care of their children. Cross-culturally, family and/or community support for mothers and babies used to be routine for the first few weeks. Programs like postpartum home visits by professionals have been linked to positive outcomes for mother and child in many cases where they have been studied (McNaughton, 2004).

### *Maximize Welfare: Maximize Outcomes for All*

Utilitarian reasoning is focused on what is best for the most people. In a famous story by Ursula LeGuin called “The Ones Who Walk Away From Omelas,” people in a utopian village, where everyone is happy and healthy, have a dark secret. Stored away in a basement there is a child whose misery allows everyone else to be happy. The price of the village’s well-being is the mistreatment of the child. This is an extreme example of the tabulation of positive and negative potential consequences that a “true” utilitarian would make. It illustrates one of the problems with utilitarian theory: the interests of the majority can be allowed to override the interests of a minority (Beauchamp & Childress, 2013, p. 360).

Utilitarians have difficulty taking into account long-term outcomes. For example, minimal or no breastfeeding has long-term effects on a person’s health and well-being. Individuals’ health and well-being influence the community and nation throughout their life and those of their relations. Individuals with poor neurobiological structures often pass on their impairments to the next generation (Scorza et al., 2019). And so, undermining health in the short term also can affect society in the long term.

**Table 3.** Four-Component Model of Moral Behavior (Focusing on Processes That Must Occur in a Particular Situation).

Component	Description
Moral sensitivity (perceive and interpret the situation)	<ul style="list-style-type: none"> <li>• Recognize there is a moral problem</li> <li>• Identify parties (stakeholders) involved</li> <li>• Determine possible courses of action and how they would affect various stakeholders</li> </ul>
Moral judgment (reasoning; decide what is the best thing to do)	<ul style="list-style-type: none"> <li>• Apply professional ethical codes</li> <li>• Decide which alternative action is most morally justifiable</li> </ul>
Moral motivation (prioritize the chosen action over competing priorities)	<ul style="list-style-type: none"> <li>• Commit to taking the most morally justifiable action</li> <li>• Take responsibility for moral outcomes</li> </ul>
Moral character and implementation (persevere and complete the action)	<ul style="list-style-type: none"> <li>• Internal: courage, ego strength, strength of conviction</li> <li>• Interpersonal processes: interpersonal warmth, empathy, caring, compassion, connectiveness, assertiveness, and conflict resolution skills</li> <li>• Know and effectively implement the steps needed to complete the action.</li> </ul>

Note. Table 3 was adapted from the following sources, which can be consulted for more information about the four-component model of moral behavior: Bebeau (2002); Duckett and Ryden (1994); Rest (1982, 1984, 1994); Rest, Narvaez, Bebeau, and Thoma (1999); Rest, Narvaez, Thoma, and Bebeau (2000).

**Act Virtuously: Act in the Right Way for the Situation, Taking Everything Into Account**

Virtue involves behaving in the right way at the right time for the right reasons (Aristotle, 1988). One must have appropriate perceptions, knowledge, and intuitions, built from experience. Triune ethics theory (Narvaez, 2008, 2014) points out how one’s mind-set can alter perceptions, sensitivities, judgments, motivation and action possibilities (affordances). Stephen Porges (2011) noted that individuals quickly assess (early subconscious processing) the safety of every situation (neuroception). For example, when one feels threatened, the stress response is activated, shifting blood flow away from higher order thinking and mobilizing self-protective action (Sapolsky, 2004). This contrasts with the feelings of openness that come from states of social engagement such as gratitude where the ability to imagine possibilities is open, flexible, and creative (Fredrickson & Losada, 2005). Applied to professional ethics, mind-set shifting means that the professional must take care not to be in a stressed mode when making new critical decisions and avoid developing routines and practices within a stressful frame.

Nearly all societies across the world have emphasized the importance of a well-developed heart-mind when making decisions and/or taking action (Deloria, 2006; Narvaez, 2013, 2016). The heart-mind represents a combination of deep intuition and emotional intelligence based in real-life experience. In modern industrialized schooling, most students are not encouraged to develop the integrated heart-mind but are encouraged to make decisions logically, apart from heart or deep intuitions. This kind of emotionally detached imagination can mislead us into thinking that thinking and logic are the best guides to living our lives in the workplace and even at home. Many of the world’s problems can be traced back to just such approaches (Easterly, 2007).

All adults have an ethical responsibility to facilitate children’s optimal development. A virtue focus promotes “I-Thou” instead of “I-It” relationships within the setting. This means treating a baby like a person, not an object; giving equal respect to babies; and taking seriously and responding kindly to the signals of the baby.

Those of us who learned to dissociate from early toxic experiences must also learn to be emotionally present in decision making. Becoming overly scripted and decontextualized undermines virtuous response.

A focus on virtue acknowledges that ethical action requires much more than moral reasoning alone. We describe identified components of ethical action in the next section.

**Steps to Ethical Action**

James Rest realized that moral reasoning per se was not enough for ethical action. He developed a four-component model, describing the kinds of cognitive and psychological processes and behaviors that would have to take place for ethical action to occur (Rest, 1982, 1984, 1994, pp. 22–25; further refined by Narvaez & Rest, 1995; Rest et al., 1999; see Table 3).

When considering real life situations using the four-component model, one must notice and be sensitive to the important aspects of a situation. Then, one must determine what is the best course of action, coordinating principles, intuitions, goals, and many other factors. But that is not enough. One must prioritize moral values over other competing values and then carry out the best action, knowing what steps to take and persevering until completion. An ethical behavior can fail at any point for lack of sensitivity, judgment, commitment, or action capacities.

The model has been used in many professional settings and adapted for use with dental students (Bebeau, 1994, 2006), and nursing students and educators (Duckett & Ryden,

**Table 4.** Steps to Guide Professional Ethical Behavior.**Background**

1. What are the facts about this situation and what logical conclusions you can reach?
2. What are your assumptions about the situation?
3. What else do you need to know about this situation and where and how will you get the needed information?

**Component 1: Moral sensitivity**

1. Who are the stakeholders in this situation and how is each affected?
2. What cues of the stakeholders should you be attentive to?
3. Whose rights and/or duties should be considered and what are they? Are any in conflict?
4. What possible alternative actions might you take, and what are the potential consequences of each action?
5. What ethical theories and/or principles and/or concepts and/or virtues should you consider in order to decide what you should do?

**Component 2: Moral reasoning**

1. What clinical information should you consider when reasoning about this situation?
2. What contextual and human factors should you consider?
3. Which rights and duties should be upheld and for whom?
4. Which ethical principle(s) and/or concepts should be given priority in this situation?
5. All things considered, which alternative action should you take?

**Component 3: Moral commitment (or motivation)**

1. If you were to take the moral action you think you should take, what negative and/or positive consequences do you think might occur?
2. Do you think you would be able to take the moral action you have selected?

**Component 4: Moral character and implementation**

1. What obstacles do you foresee in completing the chosen action?
2. What personal inner characteristics do you have that will help you to take the selected moral action?
3. Given that there may be many ways to implement your selected moral action, what interpersonal skills might you use to achieve positive consequences and limit negative ones?
4. What specific steps will you take to complete the action?
5. What support do you need, and where can you access it, to help you complete the action?

Note. Depending on the ethical situation encountered, you might answer these questions individually or with your professional team. These assessment questions were derived from the four-component model originally developed by James Rest and published in numerous versions in book chapters and journal articles (e.g., Bebeau, 2002; Duckett & Ryden, 1994; Rest, 1982, 1984, 1994; Rest, Narvaez, Bebeau, & Thoma, 1999; Rest, Narvaez, Thoma, & Bebeau, 2000).

1994; Grace, 2018; Waithe, Duckett, Schmitz, Crisham, & Ryden, 1989). It has also been used in K-16 educational settings (Narvaez, 2009; Narvaez & Bock, 2009; Narvaez, Bock, & Endicott, 2003; Narvaez, Bock, Endicott, & Lies, 2004; Narvaez & Endicott, 200; Narvaez & Lies, 2009).

In Table 4 we list ways to apply the four-component model to the question of how health care and other helping professionals can face everyday ethical challenges with the goal of resolving them. Professionals can use the model in a step-by-step fashion. Versions of this table have been used in many collaborative teaching-learning situations with students and other professionals.

## Conclusion: Where Do We Go From Here?

Humans on earth face an uncertain future in the next 50 to 100 years as global warming and climate instability continue to accelerate, leading to decreased biodiversity; more intense natural disasters; climate change migrants; and wars over water, food, and other necessities of life. If the unraveling of civilization continues, the dwindling number of humans may again become hunters and gatherers. This is a scenario that many adults today may not want to face. In

this potentially realistic future, human milk would, again, be an extremely valuable resource and more immediately lifesaving for infants and young children than it is currently. Human milk appears to support the development of full human capacities, no more needed than in this time of multiple ecological crises.

But, we have a more optimistic view of the future because of news reports that more people of all generations and from many places around the globe are recognizing the challenges and mobilizing knowledge and skills to reverse the lifestyles and attitudes that have brought us to this perilous time (Narvaez, 2017). In order to save our earth and the future of humanity, we need to change our baseline assumptions for what is normal, good, and preferable (Narvaez & Witherington, 2018). Children and young adults around the globe have been stepping up to lead demonstrations; their youth and passion are not going unnoticed by the older generations. We will need to optimize the development of children and youth so they can face the challenges that prior generations have put into their hands (Gleason & Narvaez, in press).

Many aspects of society will need to be transformed to move toward ecological sustainability. From a child development perspective, transformation must involve the many levels identified by Urie Bronfenbrenner's (1979) ecological

systems model, informed by converging evidence, including neurobiological studies, of what experiences shape growing brains in healthy ways. Children develop within a multilayered set of influences. For optimal development, the systems must be coordinated in supporting the child's healthy development. The *microsystems* are direct relational experiences the child has with parents, teachers, peers, neighbors. How well the microsystems interact form the *mesosystem*. The *exosystem* represents those aspects of the social and physical environments that indirectly influence family functioning, such as quality of housing, workplaces. The *macrosystem* comprises the larger societal influences such as compulsory schooling, limitations on parental choices such as discrimination for being a particular minority. The *chronosystem* is the historical period and its distinctive effects on what the child experiences.

Transformation must occur at every level of the social-ecological model which is widely used to guide practice and research in public health. Health care professionals are particularly involved at the exosystem and mesosystem levels where their behavior toward mother and child can have long lasting influence. There are many variations of this model and authors of several articles in this special issue have included a version in their article. Previous *JHL* authors have also used the social ecological model (e.g., Chin et al., 2013; McLeroy, Bibeau, Steckler, & Glanz, 1988). Of course, professionals can and should be involved in transforming policies to support optimal healthy development (the macrosystem).

A vital aspect of the transformation required is to restore provision of the evolved nest at every level of the ecological system. Focusing in on human milk provision, there are specific steps that can be taken around the world to increase, in the near future, the proportion of infants who receive human milk according to international guidelines.

1. Step up efforts to stop governments in specific countries from distributing free or subsidized artificial baby milk products for children. Many countries purchase infant formula from manufacturers for this purpose (Kent, 2017). See the book review of *Governments Push Formula* by George Kent (Smith, 2020) in this issue of *JHL*. Kent featured three countries in his book that illustrate this problem: Chile (pp. 27–36), Egypt (pp. 37–44), and the United States (pp. 45–73).
2. In the United States, phase out infant formula supplements in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC; Kent, 2017, pp. 71–73). Families meeting the income guidelines could be given a generous allowance instead of infant formula; Kent suggested cash or food grants comparable to the cost of formula. Another option would be vouchers that could be used only for a large variety of healthy foods and safe donor milk, if needed. We suggest that the vouchers be used for infant formula only in the event of donor milk shortages, in specific locations, and for limited times. The money the U.S. government spends on formula distributed free to income-eligible families via WIC could be used for the cost of a new baby-friendly WIC program.
3. Increase resources for monitoring the International Code of Marketing of Breast-Milk Substitutes (World Health Organization, 1981) violations and stimulating corrective actions in specific countries.
4. Develop mechanisms for expanding safe donor human milk banks so that the alternative to the mothers' own milk, when mothers cannot provide it, is not artificial baby milk produced by code-violating companies operating solely to make money for shareholders and not to protect the health of babies. (See a pair of articles about donor milk for foster children in this issue. Also, look for more articles about donor milk in the May 2020 issue.)
5. Redouble efforts to engage many more hospitals in becoming "baby friendly" (less than 20% of U.S. hospitals are currently). The Minnesota Department of Health (n.d.) has recognition programs that help hospitals, work sites, child care providers, and local communities to become more baby/breastfeeding friendly. For hospitals this can be a stepping stone to achieving the Baby Friendly USA national recognition. Other U.S. states have similar programs. Many countries other than the United States already have a much higher proportion of baby-friendly hospitals.
6. Identify and call out professional groups (such as the American Academy of Pediatrics), newspaper articles, books for parents, and lay magazine articles and ads that represent a conflict of interest on the part of the authors and/or publishers and companies that go against the EDN, such as those who profit from sales of infant formula and devices that undermine breastfeeding. (See "Lactation Newsmakers: Protecting Breastfeeding from Conflicts of Interest" in this issue.)
7. Work on and support legislation for longer paid family leaves. The United States lags behind most other countries in how families are supported in creating an "evolved nest," or not, during the all-important first 1,000 days. See Schwarzenberg, Georgieff, and American Academy of Pediatrics (2018) regarding the first 1,000 days. Include support of childbearing military personnel and veterans. (See the article in this issue about military veterans receiving care from the Veterans Administration that suggests a need for interventions for childbearing veterans.)
8. Continue increasing the number and quality of lactation support programs in workplaces and schools, and address equity issues that may prevent some

groups of employees and students from benefitting from these. (See the articles in this issue about supporting working mothers—WIC recipients who pump—and breastfeeding college students.)

9. Use professional expertise and leadership skills to encourage workplaces to include on-site child care to facilitate direct breastfeeding (rather than pumping milk) during the workday.
10. Advance support programs for incarcerated childbearing and childrearing parents. Include education about the evolved nest and preparation for breastfeeding. Also, include a special live-in area in the prison or jail for mothers and babies. Until space for a live-in area can be remodeled, create lactation rooms for pumping and storing milk for delivery to the infant by family, friends or couriers. This could be an example of a “break the cycle of undercare of babies” program. There is program for inmates at the Washington Corrections Center for Women in Gig Harbor, Washington (People.com, 2018). Paynter (2018) and Paynter and Snelgrove-Clarke (2017) have investigated criminalized women and breastfeeding, and policies and legal protections for incarcerated women in Canada. As is the case with many high-level policies, codes, and laws, Paynter (2018) found a large gap between what ought to be and what is still to be in Canada. This is a new frontier for lactation/breastfeeding professionals and advocates for criminalized women in Canada and around the world.
11. Federal funders in the United States and abroad should issue calls for proposals and set aside funds for grants that allow well-prepared researchers to study human milk feeding that meets national and international standards (American Academy of Pediatrics, 2012; World Health Organization, 2019) in relation to longer-term outcomes than those typically studied. High-quality longitudinal, epidemiological studies relating infant feeding, measured very precisely, to a host of long-term mother and infant outcomes could yield much better data than we have to date.
12. Invest in providing parenting education in public high schools and community education programs that includes information about the evolved nest and its effects. Include information about the risks of infant formula.
13. Make breastfeeding and human milk provision the cultural default so that those with special needs, such as breast cancer survivors (this issue) or mothers living with HIV (this issue), can receive special support.

We challenge you to select one of the items on this list and help move it forward in any way(s) that you can, while continuing the great lactation/breastfeeding work that you are already doing in your local communities and beyond.

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