Three Views:
Infant Feeding and Weaning in the United States, Mexico, and Sweden

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Introduction

Like other adult female mammals, most human women are biologically equipped to give birth to live offspring and then nourish those babies for a period of time by producing milk. At some point before reaching adulthood, young humans stop receiving food from their mothers’ bodies and learn to consume plants and/or animals found in their environments in order to meet their nutritional needs. Within most other species of mammals, this transition happens at roughly the same age and to roughly the same range of foodstuffs for all individuals (Dettwyler 1999). Humans, however, as a uniquely global species with the powerful overlay of culture, exhibit a wide range of behaviors in this arena, with a wide variety of expressed reasons for their choices (Dettwyler & Fishman 1992, Dutta et al. 2006, Notzon 1984, Synott et al. 2007, Van Esterik 2002). Although there are certainly biological constraints on what can be fed successfully to a human infant, and a substantial body of scientific research showing that some choices promote better health outcomes than others (Allen et al. 1992, American Academy of Pediatrics 2009, Greer et al. 2008, Ip et al. 2007, Marlin et al. 1980, Öhlund 2008, Olsson et al. 2008), there is still a great deal of latitude in the exact content, timing, and introduction sequence of non-milk baby foods. Into this gap, each human culture pours a raft of beliefs, values, norms, and social practices. This paper attempts to summarize, compare, and contrast the dominant infant feeding practices in three modern cultures: the United States of America, Mexico, and Sweden.

These three countries and the cultures they house were selected for a variety of reasons. The United States was chosen because the author is a U. S. American with direct experience of its infant feeding and weaning practices, and because U. S. American culture
has had a substantial influence on these practices in other cultures (through such diverse arms as the recommendations of professional organizations like the American Academy of Pediatrics, global marketing of baby food and supplement products by U. S. corporations, U. S. government and charity food aid to poor or disaster-stricken areas, and the portrayal of infant feeding in exported films and television programs). Mexico was chosen as a close geographical neighbor to the United States with extensive and longstanding cultural influences in both directions, and as an interesting illustration of indigenous cultural practices competing with Western ideas for sway over individual behavior (with often very mixed results). Sweden was selected as the third country for comparison because it is renowned for its high rates of breastfeeding (both at birth and throughout infancy) and its institutional support of families with young children, and because it has one of the healthiest child populations in the world (Öhlund 2008). All three countries’ dominant cultures subscribe to an essentially Western framework of scientific medicine and thought about balancing traditional and modern modes of knowledge, and all three are industrialized countries with ready access (at least in urban areas) to information and goods from the rest of the world. All three also had shockingly (by current First World standards) high rates of infant malnutrition and mortality as recently as the early 20th century, which have since improved with the propagation throughout the developed world of public health measures to provide clean water and promote adequate nutrition (Fomon 2001, Öhlund 2008, World Health Organization 2003). They therefore provide a varied, but sufficiently limited for present purposes, cross-section of human experience in the feeding of young children.
What is an infant, and what is weaning?

Before proceeding further, some definitions are in order; cross-cultural comparison is meaningless without a shared understanding of the terms under discussion. In this essay, the terms “infant” and “baby” are used interchangeably to mean a human child between birth and one year of age. A “young infant” or “young baby” is younger than six months and an “older infant” or “older baby” is older than six months. A “newborn” is an infant less than six weeks old. A “toddler” is a child between one and two years of age. “Young child” is used more broadly to describe members of any of the above categories as well as the child who has passed his or her second birthday but not yet begun formal schooling, which occurs in the countries considered here at about five or six years of age. These definitions are consistent with common usage in the medical, ethnographic, public policy, and popular literature (see e.g., Aldous 1999, Grummer-Strawn et al. 2008, World Health Organization 2003, BabyCenter.com 2009).

“Weaning” and the terms used for foods given to young children have less standardized meanings; this lack of consistency has in fact been the subject of academic consternation and debate (Dettwyler & Fishman 1992, Greiner 1998, Van Esterik 2002). This essay considers “weaning” as the process, usually occurring over months or years, of shifting a child’s source of nutrition from its mother’s (or another lactating woman’s) body to nonhuman sources; weaning begins the first time the child is offered anything other than breast milk to eat or drink and is complete when the child no longer consumes any human milk (Dettwyler & Fishman 1992, Greiner 1998). “Complementary feeding” is the provision of other foods in addition to breast milk (World Health Organization 2002).
“Solid food,” “weaning food,” or “beikost” (a German word that translates literally as “beside-food”) is any food firm enough to eat with a spoon or the fingers, including gruel and fruit or vegetable puree as well as hard crackers (“teething biscuits” or “digestives”) and elements of regular adult cuisine (known as “table food”); it may in fact be quite liquid in texture, but is distinguished from milk and other beverages (BabyCenter.com 2009, Dettwyler & Fishman 1992, Whitehead 1985). Infant or baby “formula” is a commercially manufactured beverage, most commonly based on cow’s milk, that has been altered to suit an infant’s immature digestive system and to approximate human milk in macronutrient (fat/protein/carbohydrate) content, and that is sold as a supplement to or replacement for breast milk (World Health Organization 1981). “Exclusive breastfeeding” is the provision of nothing other than breast milk (from the baby’s mother or another woman, either direct from the breast or expressed and offered in a bottle or cup) to eat or drink; “mixed feeding” is giving an infant some human milk and some other liquid(s) (typically plain or sugared water, formula, fruit juice, tea, grain-based beverages, or the milk of an ungulate) (Dettwyler & Fishman 1992, World Health Organization 2003). I avoid the term “bottle feeding” because it does not identify the contents of the bottle and is therefore confusing; a bottle-fed baby might be exclusively breastfed, exclusively formula-fed, mixed-fed, or complementarily fed. The terms “extended breastfeeding” and “prolonged breastfeeding” are also problematic, though commonly used in U. S. pediatric and popular literature, because they imply a continuation of breastfeeding beyond some cutoff age that is not always clearly specified (nor often recognized as the cultural artifact that it is); these terms are of interest, however, because they delineate norms governing the appropriate duration of breastfeeding (Dettwyler & Fishman 1992, Stein et al. 2004).
When should weaning begin?

Since the early 1970’s, the World Health Organization (WHO), the United Nations International Children’s Emergency Fund (UNICEF), and other respected international bodies have promoted a global policy of exclusive breastfeeding beginning within one hour after birth and continuing for the first four to six months of life, with few and narrowly defined exceptions (UNICEF 2009, World Health Organization 2003, 2005, 2009). (Knowledgeable people disagree – sometimes heatedly – about whether the exclusive breastfeeding period should be closer to four months or to six months, but all major international medical bodies recommend something in this range.) These policies were developed largely in response to a 20th-century trend, beginning in the United States and western Europe and then spreading around the world, of supplementing or replacing breast milk with artificial infant formulas, often with disastrous health and economic consequences (Dettwyler & Fishman 1992, Fomon 2001, Notzon 1984, World Health Organization 1981). Although breastfeeding is making a gradual comeback, according to WHO figures from the beginning of this decade only 35% of the world’s infants are breastfed exclusively for at least four months (World Health Organization 2001). Current official recommendations – that is, those given by most government agencies, public health clinics, and professional organizations of nutritionists and pediatricians – in the United States of America, Mexico, and Sweden are all essentially aligned with WHO policy. Actual practice varies considerably, both within and among the three countries.

In Sweden, breastfeeding is almost universally initiated within hours after birth, and the majority of Swedish newborns are exclusively breastfed (Freeman et al. 2000, Synott et al.
2007). About three quarters of Swedish babies are still receiving most of their nutrition from breast milk at six months, and up to 20% continue to breastfeed for one year or longer (Öhlund 2008, Synott et al. 2007). Mixed feeding of both breast milk and commercial baby formula is uncommon; though formula is readily available, it is perceived throughout Scandinavia as less healthful and less convenient than breast milk, and as such is reserved for unusual situations when breast feeding is either not an option or is, according to medical advice, insufficient (for instance, very premature babies or mothers undergoing chemotherapy) (Synott et al. 2007, World Health Organization 2009). The majority of parents in Sweden do not, however, wait the full recommended four to six months before offering their babies other types of beikost. Reasons for introducing solids to young babies in Sweden are similar to those given by parents in other European countries as well as in the United States and Mexico, and usually involve the baby no longer seeming satisfied with breast milk or formula alone, combined with advice, usually from older female relatives based on the advice they had received (from pediatricians and other authority figures) in the mid- to late 20th century, that feeding a baby solids at one or two months of age is appropriate and will help it sleep through the night (Forman 1984, Guerrero et al. 1999, Li et al. 2008, Sullivan 1981, Synott et al. 2007). Swedish parents often report that they are aware of the official recommendations, but that they trust their own intuition about their babies’ needs more than a blanket statement by health authorities (Synott et al. 2007).

In Mexico, breastfeeding newborns is also very common; different authors report rates of 79% to 98%, depending on the region, year, and type of study (Guerrero et al. 1999, Leyva-Pacheco et al. 1994, Long-Dunlap et al. 1995, Vandale-Toney et al. 1997). Unlike Sweden, however, exclusive breastfeeding is quite rare, with 80% to 90% of infants
receiving something other than breast milk during the first month of life and as few as two percent of babies exclusively breastfed at four months of age (Ibid.). Mexican mothers also commonly offer water, sugar water, cow’s milk, or tea to their newborns, and some indigenous Mexican cultures discourage feeding colostrum (the low-volume, protein- and antibody-rich “pre-milk” made by lactating mothers in the first few days after birth) on the basis that it is not nutritious (Lipsky et al. 1994, Mennella et al. 2005). Anecdotal evidence from a casual survey of Mexican websites devoted to infant care indicates that Mexican popular opinion is shifting somewhat in favor of exclusive breastfeeding, but mixed feeding (usually breast milk plus formula for a few months, followed by formula plus complementary foods for the rest of the first year) is still the norm. Reasons for not breastfeeding or for introducing other foods include those discussed above, as well as a variety of conditions described in the public health literature as “folk illnesses” related to emotional states, illness of the child, and direct advice from physicians (Guerrero et al. 1999). Both Mexico and the United States lag behind Sweden in adoption of UNICEF Baby-Friendly Hospital Initiative practices in maternity wards, which are intended to promote breastfeeding and have indeed been shown to do so (DiGirolamo et al. 2008, UNICEF 2009).

In the United States, initiation of breastfeeding is even lower than in Mexico, with 70% to 85% of mothers ever breastfeeding their infants. Breastfeeding prevalence also varies by location in the U. S. and is strongly related to feeding practices in hospitals, where about 95% of U. S. American babies are born. It is more common in the United States than in Mexico, but less common than in Sweden, for babies to receive some breast milk for at least 6 months, with 25% to 45% still breastfeeding at that age (DiGirolamo et al. 2008, Li
et al. 2008, Skinner et al. 1997). The American Academy of Pediatrics (AAP), which is the premier professional organization for U. S. physicians specializing in care of infants and children, recommends exclusive breastfeeding for four to six months and mixed breast and complementary feeding for one year or longer (American Academy of Pediatrics 2009); clearly, these recommendations have not yet been put into full practice (though current rates are much better than those of three or four decades ago, when only 10% of U. S. babies were breastfed for more than a few weeks (Fomon 2001)).

Reasons for stopping or supplementing breastfeeding in the United States include perceptions of infants’ appetites outstripping milk supply, as mentioned above, and/or babies beginning to bite the nipples, but also frequently involve the mother’s need to return to paid work (Li et al. 2008). Maternity leave is much more generous in Sweden than in the United States, and fewer Mexican than U. S. American women are engaged in work outside the home that separates them from their young children, so going back to work full-time is commonly cited as a major factor in infant feeding practices only in the U. S. A number of laws have recently been enacted guaranteeing a woman’s right to express milk at work with a mechanical pump in order for her baby’s caregiver to give the baby the expressed milk (La Leche League 2009), but they do not yet exist in all U. S. jurisdictions, and not all companies and workers are aware of and respect these laws, and the author can attest from personal experience that working full-time and pumping enough milk to feed a growing baby can be a challenge. Thus, breastfeeding rates drop off sharply between six and twelve weeks of age (the time during which many mothers return to work), and most U. S. American babies consume at least some infant formula throughout their first year of life. (The author, unable to keep up with demand for pumped milk but wanting to avoid
commercial formula for a variety of reasons, chose to supplement her son’s breast milk intake with whole goat’s milk starting at about ten months.) The degree to which U. S. Americans follow WHO and AAP recommendations to introduce solids no earlier than four months of age is strongly correlated with socioeconomic and educational status, with more affluent and better-educated parents much more likely to delay solids than poorer, less-educated families (Fein et al. 2008). Formula-fed infants are also more likely to receive early solids than breastfed babies (Bronner et al. 1999, Jacknowitz et al. 2007). Race appears related to the prevalence of specific reasons given for different feeding practices in the U. S., but not to rates of the actual practices (Li et al. 2008).

Reasons for not stopping breastfeeding in the first year of the baby’s life are similarly varied in all three cultures (and in reports from other industrialized countries), and include low cost, convenience and portability, cleanliness, immunological and other health benefits to the baby, weight loss and other health benefits to the mother, social or familial encouragement, pediatrician’s advice, opportunities for mother-infant bonding, stress reduction, and assorted other emotional and psychological benefits (Dettwyler & Fishman 1992, Forman 1984, Synott et al. 2007).

**What should babies eat?**

Breastfed or formula-fed, every infant must eventually learn to eat other foods. Since the goal is not only to nourish the child adequately but also to accustom him or her to the local adult cuisine, variation is to be expected in the weaning foods provided by different cultures. In all three countries considered here, bland foods are introduced first, acting on the shared belief that young infants would not or could not accept spicy foods. The
temperature of foods fed to young babies is also carefully kept close to body temperature, to avoid either burning the child’s mouth or having it reject something as too cold. First solid foods are also universally soft and mushy in texture, because most babies lack both teeth and oral fine motor skills at the age at which they begin to eat these so-called solids (Dewey 2002, personal experience, WholesomeBabyFood.com 2009).

Beyond these constants, though, there is little cross-cultural agreement about the “right” first beikost. In the United States, it is generally assumed (and pediatricians often advise) that babies start, around five or six months of age, with very small (a teaspoon or two) portions of a thin gruel made from breast milk or formula and powdered rice, fortified with iron. Rice is perceived as least allergenic and easiest to digest, and iron is added because by six months of age most babies have used up the “extra” iron they stored in utero and need to take some in from food (BabyCenter.com 2009, Grummer-Strawn et al. 2008, Hain Celestial Group 2005). Some in the U. S. (and many in other countries) reject this idea, though, as white rice consists of simple starches (which are quickly metabolized to sugar in the body, therefore doing little to provide lasting satiety and possibly contributing to later development of diabetes mellitus) and virtually no other nutrients (Bonyata 2008, Melin 2009, Yaron 1998). Other popular early solids in the United States include avocado; mashed banana; pureed green beans; boiled mashed sweet potato, white potato, or winter squash; pureed apple, pear, peach, or apricot; plain yogurt; and oat gruel (BabyCenter.com 2009, Grummer-Strawn et al. 2008, La Leche League 2009, WholesomeBabyFood.com 2009, Yaron 1998). Most U. S. American parents serve a combination of commercially packaged and homemade baby foods, with households where the mother(s) work(s) outside the home somewhat more likely to feed more packaged
foods. There is a lively and longstanding debate about whether babies should always be given vegetables before sweeter fruits, so that they do not develop a “sweet tooth” and refuse other foods later, but human milk is actually quite sweet, and many sources dismiss the “veggies first” rule as unfounded (Bonyata 2008, WholesomeBabyFood.com 2009, Yaron 1998). Meat, eggs, and cow’s milk are typically not fed in the U. S. until close to one year of age; nuts, peanuts, fish, and shellfish closer to two years of age; mainly out of concern about possible allergies. In all three countries, parents are advised to introduce new foods to babies one ingredient at a time in order to test for allergic reactions; however, no clear guidelines are generally given on the age at which this is no longer necessary (BabyCenter.com 2009, BabyCenter en Español 2009, Melin 2009).

Swedish babies are also typically offered a plain, starchy gruel as their first beikost, but it is more likely to contain peeled, boiled, mashed white potatoes than rice or oats. Other early solids recommended in Sweden include carrots, parsnips, cauliflower, corn, broccoli, green peas, apples, plums, pears, blueberries, peaches, and artichokes (all well cooked and pureed), as well as avocado and banana (Melin 2009). A recent epidemic of celiac disease (a serious allergy to wheat gluten and related proteins) among Swedish infants and toddlers prompted close national scrutiny of babies’ diets and resulted in recommendations that gluten-containing foods (mostly wheat products) should be introduced around the middle of the first year, rather than delayed as some suggest (including many U. S. authorities), and breastfeeding should be continued well beyond the first introduction of complementary foods, to minimize the chance of developing food allergies (Olsson et al. 2008). Other than this heightened awareness of celiac disease, Swedes follow similar patterns to U. S. Americans of delaying the introduction of certain highly allergenic foods, with the
exception that Swedish babies are much more likely to consume fish before one year of age (Alm et al. 2008, Öhlund 2008). Swedish parents, like U. S. parents, tend to feed a combination of homemade and store-bought baby foods; the main perceived advantages of commercial food are convenience, sanitation, and age recommendations on the packaging, while homemade food is seen as more nutritious, less expensive, and easier to tailor to an individual baby’s needs and tastes (Bonyata 2008, personal experience, Synott 2007).

In Mexico, there is somewhat less emphasis on making or purchasing special baby foods and somewhat more emphasis on feeding young children plainer, blander, mashed or pureed versions of local “regular” food. Although Mexican families, like those in the U. S. and Sweden, are advised to introduce new foods one at a time and not before four months of age, these guidelines appear much more likely to be ignored in practice here than in the other two countries. Mexican infants’ early diets are also more likely to contain ingredients that are often avoided out of fear of allergy in the United States and Sweden, such as cow’s milk, tomatoes, citrus fruits, and corn (BabyCenter en Español 2009, Dutta et al. 2006, Long-Dunlap et al. 1995, Mennella et al. 2005). Beans are a staple in many Mexican infants’ diets (as in those of their parents), and chicken soup or broth is often introduced very early as well (Lipsky et al. 1994). Interestingly, while rice or oat cereal is frequently introduced first in the U. S., some Mexican communities recommend delaying the introduction of these grains until after some other foods that are commonly given much later in the United States (Lipsky et al. 1994, Wutich & McCarty 2008).

When should weaning end?

As defined on page three, weaning is a process that begins with the first taste of non-
milk food and ends with the last drink of breast milk. How long, then, should it take? There is no clear consensus on this question, either within or among cultures, and at least within the United States of America, it is an emotionally charged question for many. As mentioned, the World Health Organization recommends that breastfeeding continue for a minimum of two years; the American Academy of Pediatrics recommends a minimum of twelve months. Neither body sets a maximum appropriate time. There is still, however, a large holdover in U.S. American popular opinion from breastfeeding’s 20th century nadir (and the accompanying idea that breasts are meant only to be sexual playthings for adult men). A Google search (21 April 2009) for the phrase “time to stop breastfeeding” produced nearly as many pages of coarse jokes about breastfeeding teenagers or blogs ranting about selfish celebrity mothers who breastfeed their two-year-olds in public (gasp!) as pages of actual advice, and even several of the pages attempting to be helpful contained erroneous or misleading information.

The U.S. American anthropologist Kathy Dettwyler has combed the literature in an attempt to find a “natural” age for completion of human weaning; based on a wide variety of cross-cultural comparisons and cross-species biological markers, she suggests a range of 2.5 to 7.0 years (Dettwyler 1999). Recent studies have shown that many of the health benefits of breastfeeding are dose-dependent: that is, breastfeeding even a little bit provides some benefit, but more breastfeeding provides more benefit (Ip et al. 2007). Still, U.S. American culture is only very gradually (re-)accepting breastfeeding beyond infancy; some call breastfeeding beyond even six months “extended” or “prolonged” (Bonyata 2008, Dettwyler 1999, Stein et al. 2004). Less public derision and disgust seems to be directed at mothers in Mexico and Sweden who extend the weaning process.
into the second or third year of the child’s life, and Sweden in particular has made admirable strides in this area, but breastfeeding for longer than a year is still far from the norm in either of these countries.
Conclusion

Infant feeding practices throughout the industrialized world have undergone substantial changes throughout the past century, and continue to change today. Although official medical and public health recommendations regarding breastfeeding and weaning foods are similar in the three cultures considered in this report, and in turn similar to the global policies of the World Health Organization, actual feeding behaviors are quite variable and often very different from official advice. This divergence between norms and values probably exists for many reasons, including gaps between public health policy and public knowledge, retention of older cultural patterns through tradition and grandmotherly advice, parental belief that one’s own intuition about a baby’s needs trumps generic public health recommendations, marketing of commercial baby foods and feeding paraphernalia, images of infant feeding in the popular media, and more amorphous personal preference factors.

At present, the Swedish population is closest of the three considered here to following WHO recommendations, a fact that is likely related to a variety of educational and health policies enacted by the Swedish government in recent decades. Mexico and the United States are farther from the target for slightly different reasons: fewer U. S. mothers initiate breastfeeding than recommended, and most Mexican families introduce supplemental foods earlier than recommended. All three cultures display some strengths, some weaknesses, and numerous health-neutral variations in their approaches to feeding and weaning young children.

If current WHO and UNICEF feeding guidelines are to be taken as worthy and attainable goals for the benefit of the world’s children (the author thinks they should, but also leaves this value judgment to the reader), then a great deal of work must still be done
to convince the world’s adults to enact them. Many tools of intercultural competence, such as locally appropriate relationship building, selection of culturally relevant sources of evidence for persuasion, clarity and appropriateness of verbal messages, competent orientation to knowledge, empathy in interpersonal interactions and thoughtfulness in, and display of respect for the maintenance of cultural practices that are not in direct opposition to the public health goals at hand (Lustig & Koester 2006), should be put into play if such work is to succeed.
Works Cited


30. Hain Celestial Group, Inc.


Ip, Stanley, Mei Chung, Gowri Rama, Priscilla Chew, Nombulelo Magula, Deirdre DeVine, Thomas Trikalinos, and Joseph Lau. Breastfeeding and Maternal and


