

# The Mother-Child Food Relationship in the Study of Infant and Young Child Feeding Practices

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### Key messages

- > Biology and culture come together at the level of the diet.
- > This article reviews infant and young child feeding (IYCF) practices from a cultural perspective, studying dietary patterns in infants and children between the ages of 6 and 24 months.
- > Drawing on ethnographic research conducted in Mexico, sub-Saharan Africa and China, the authors demonstrate how viewing IYCF in cultural terms can expand our explanatory frameworks and improve nutrition intervention designs.
- > The “dyadic eating relationship” between mother and child is expressed in several ways, including the practice of maternal pre-mastication of food, the influence of maternal food preferences on the child, and the sharing of food between mother and child.
- > Studies of “infant and young child feeding culture” can generate valuable new insights and suggest avenues for translating nutritional science into actions in the households and communities where we work.

### The mother-child food relationship

Scholarship on infant and young child feeding (IYCF) has focused broadly on the following areas: assessments of IYCF (usually based on WHO IYCF indicators or nutrient intakes); the association of indicators or nutrient intakes with measures of nutritional status; the impact of agriculture on IYCF indicators or nutrient intakes; the social determinants of IYCF (e.g., maternal knowledge; income); and intervention studies aimed at improving IYCF practices. The latter have mainly been considered in the context of education and counseling activities and supplementation programs.

In this article, we bring a cultural perspective to bear on IYCF – specifically, discoveries around the centrality of the mother-infant dyad food relationship to the study of IYCF. In our field, the influence of the mother has been explored primarily in terms of her knowledge of appropriate practices and as a variable or a factor of relevance to IYCF, such as maternal education or maternal obesity.<sup>1</sup> For example, by studying the knowledge and attitudes of the mother, researchers can examine the association of these variables with the dietary intake or nutritional status of the child. While these studies indicate that the mother’s knowledge and attitudes are influential, we have yet to uncover the pathways that reveal precisely how her influence is exerted. In the following, we describe the nature of the mother-infant dyad food relationship, drawing from our work in Mexico, sub-Saharan Africa and China, with the aim of sharing how the cultural perspective can expand our explanatory frameworks and can improve intervention designs.

### A biocultural view of nutrition

Nutrition is a biocultural phenomenon. The foods we consume have biological impacts, and at the same time, what we eat and how we eat it (our food intake) is influenced by social, economic, political, and cultural processes.<sup>2</sup> This means that nutrition can be studied either from a perspective of biology and health



or from a social and cultural perspective. For many people, the term “nutrition science” is synonymous with the study of *nutrients in foods* – macronutrients (protein, calories, fats, carbohydrates) and micronutrients (vitamins and minerals, plus other compounds, such as lipids). When we study nutrition from a biological perspective, we quantify nutrient intakes, create nutrient indicators, assess nutrient bioavailability, and study the relationships these nutrients have with metabolism, health indicators, and functional outcomes. These research areas are pillars of nutrition science and they guide our policy, nutrition guidelines and program decisions. And indeed, we continue to discover the ways that nutrients impact our metabolism<sup>3</sup> and our health.<sup>4</sup>

The social and cultural perspective is the other part of nutritional science. Its importance is evident to professionals who have responsibility for designing and implementing public health programs, for translating scientific discoveries into actions, for doing community outreach work, or for motivating people to change their eating habits. We have made significant advances in our knowledge of how nutrients impact our health, but acquiring knowledge as to how social and cultural factors affect food intake, and the translation of this knowledge into actions to improve nutrition, remains a significant challenge.

Biology and culture intersect, in practical terms, at the domain of “diet” or, in layman’s terms, at the level of “what we eat.” Nutrition professionals define diets as the totality of our food intake over a specified period of time, such as 24 hours, seven days, or many months. Dietary patterns (also called dietary practices) reflect the foods we ingest on a recurring basis, with some foods consumed at every meal, every day, or less frequently. For example, many of us are familiar with the Mediterranean Diet, which involves the consumption of vegetables, olive oil, fruits and nuts at most meals, and less frequent consumption of meat. Dietary patterns influence our nutrient intakes and consequently our health. They also reflect the cultural features of the shared behavior, preferences, and food combinations of a group of people, which are in turn determined by what is available and financially accessible. Although diets can be studied through a biocultural lens, very few studies have been designed to explore both biology and culture and their interactions.

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### The diets of infants and young children in cultural context

There are many definitions of culture.<sup>5</sup> A common feature of these various definitions is the focus on the cumulative body of knowledge, experience, beliefs, values, attitudes and meanings that are held by a group of people. In the realm of food and nutrition, the emphasis is on food beliefs, practices and behaviors.<sup>2</sup> Culture studies primarily examine sociocultural factors (and their mechanisms) that affect food intake. On the other hand, a biocultural approach, which is captured in the cultural ecological model,<sup>6</sup> calls attention to the domains of determinants of diet.

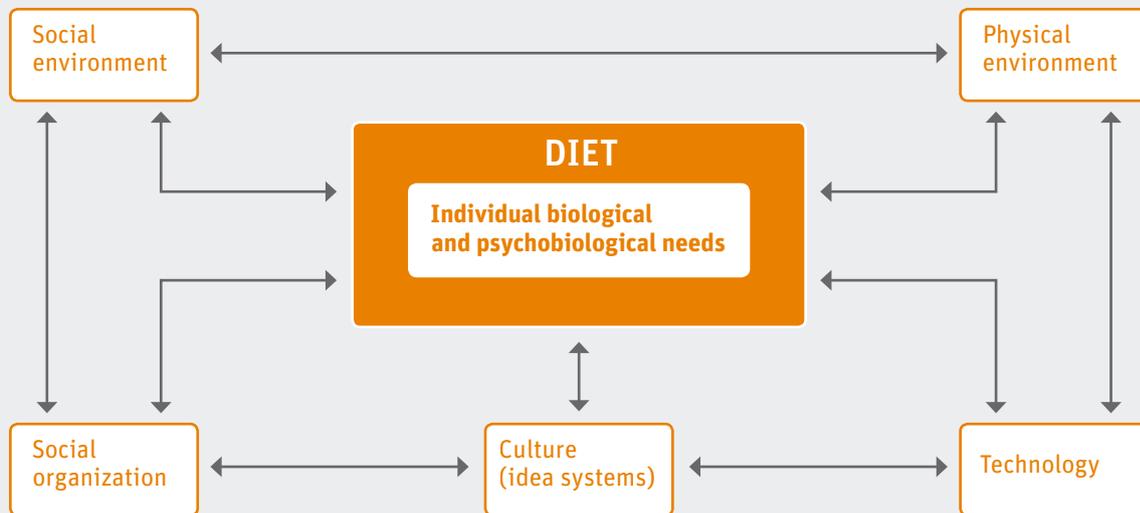
In our ethnographic work, we have used the biocultural framework (Figure 1) to study dietary patterns in infants and children between the ages of 6 and 24 months. An important feature of these studies was the demonstration of explicit “culture rules” for foods, which are concerned with beliefs about what young children ought to consume. These rules include attention to the timing of the introduction of foods, food preparation, and food ideologies.<sup>7</sup> Social contextual factors also play a role in the choice of foods given to children. For example, in some cultural settings, the nutritional quality of the child’s meal can depend on who is present at meal times or the presence of other children in the home. In Mexico, when children younger than five years of age were in the home, meals tended to be of liquid consistency (rather than solid consistency, which is recommended practice).<sup>8</sup> A negative association between the quality of feeding practices and the presence of other young children has been documented in India by Malholtra.<sup>9</sup>

Multiple factors related to food production have profound effects on what people eat and on feeding patterns. These factors include women’s role in agriculture; the extent of reliance on locally grown food; the effects of seasonality; the choices and behaviors of food retailers; and the affordability of foods. In many cultures, women, particularly mothers, play a key role in decisions about purchasing and preparing food. In other situations, women have much less control over the purchasing of food. While cultural differences generate very different levels of maternal authority over what their children eat, the mother-child dyad is a universal central factor. Aside from their roles as decision-makers and managers of food preparation, we have found that the diets of caregivers and their young children overlap in unique ways. The “dyadic eating relationship” is expressed in several ways, including the practice of the premastication of food for IYC, the influence of maternal food preferences, and the sharing of food.

### Expressions of the dyadic eating relationship

#### Premastication

In the context of human nutrition, “pre-mastication” refers primarily to the practice of chewing, but not swallowing, foods that are then fed to infants and young children, particularly during

**FIGURE 1:** The biocultural framework

the period when their dentition is not yet fully developed and they cannot eat all household foods. Premastication arose in the course of our evolution, when the anatomical changes associated with upright posture and enlarged fetal head size led to delayed tooth eruption. Without premastication, our ancestors – who subsisted on a mixed animal-vegetable diet – would not have survived, because breast milk alone is not adequate to support infants until they have a full set of teeth. Prechewing their own food, by mothers, was the vehicle that made it possible for mothers to provide their babies with nutrition, and babies ate what their mothers ate.<sup>10,11</sup>

### “Without premastication, our ancestors would not have survived”

After the agricultural revolution, when many human populations shifted to the subsistence farming of grains and tubers, preparing paps and gruels for babies meant that mothers could keep their infants alive without premastication, but they could not keep them well nourished, as these preparations are deficient in both macronutrients and micronutrients. In recent times, new technological developments have made it possible to prepare infant and young child (IYC) foods that do not depend on having a full set of teeth. Premastication is no longer essential from a nutritional perspective, and in some societies (but not all), the practice has declined or even disappeared. However, the decline also meant that the immunological benefits of exposure to mother’s saliva were lost.<sup>12</sup>

### Preferences

As the primary managers of what children are fed, mothers around the globe are often very sensitive to children’s food likes and dislikes. Particularly during the early years of life, children quickly learn that how well they eat and how much they eat is of great concern to their mothers, and this rapidly enters into the dynamics of mother-child interactions.<sup>13</sup> Universally, mothers want to see their children eat the foods they have prepared for them, and want to avoid wasting food that their children refuse to eat. In our ethnographic study in Mexico, mothers agreed that the child’s preferences for a particular food will often drive the food choices they make. Mothers expressed the idea of honoring the child’s preferences, and they did not want to waste food. When asked how they knew if the child disliked a specific food, most mothers said that “a face of disgust,” “turning head away,” or “spitting the food back out” were indicators of child’s disliking of a food.<sup>8</sup>

In addition to avoiding food waste and encouraging consumption, it is possible that another expression of the mother-child dyad in complementary feeding is mothers’ projection of their own food preferences onto their children, and that they thus may have a tendency to offer foods that they themselves prefer. There may also be a biological explanation that links child food preferences to their mother’s diet. This linkage has its roots in what is sometimes referred to as “the flavor principle.”<sup>14</sup>

The “flavor principle” describes a cultural phenomenon – namely, that cuisines are characterized by specific seasoning combinations. Scientists have hypothesized that the flavor principle explains how cultural food preferences are transmitted,<sup>15</sup>

and have demonstrated that flavor compounds are present in amniotic fluid and breast milk.<sup>16</sup> For example, infants whose mothers consumed carrot juice during pregnancy demonstrated a preference for carrot-flavored cereal over plain cereal,<sup>17</sup> and similar preferences were experimentally identified for a number of other flavor compounds.<sup>16,18</sup> Fortunately, food preferences can be modified if the child is exposed to alternative foods frequently, or if new foods are combined with one of the preferred foods.<sup>19</sup>

## “Scientists have hypothesized that the flavor principle explains how cultural food preferences are transmitted”

### Sharing

The degree of overlap or *sharing of food* between IYC and their families varies across cultures and with the child’s age.<sup>20</sup> In some cultures, there is an almost complete overlap between the foods that are fed to IYC during the period of complementary feeding, while in other cultures, children receive only specially prepared foods and do not make the transition to the family diet until well into the second year of life. For example, in some parts of Latin America, the first foods are often liquids that are not a common part of the adult household diets,<sup>7</sup> and specially prepared broths remain significant in children’s diets.<sup>21</sup> On the other hand, the degree of overlap between family foods and IYC foods also depends on whose intake in the family you compare it to. The overlap is considerably greater when one compares child consumption to what mothers are eating.<sup>8</sup>

An important factor in determining the degree of food overlap in the mother-child dyad originates with the practice of plate-sharing. In our study in Mexico, we learned in home observations that if the mother was alone with her child, she would eat from the child’s plate, but when the father was home, she would share her plate with her husband and not with the child. In this cultural setting, the ingredients for the child’s meals were selected from foods available in the home; however, the content and preparation of the child’s meal were often different. These child-appropriate meals had attributes that were different from the adult meals, including not being as spicy, having a liquid consistency, or being soft to chew. Although the sharing of child-appropriate foods between mother and child was common, mothers also shared the “adult foods” with their child through *probaditas* (small bits of food from her plate). The rationale for these *probaditas* was that this is how children “learn” to eat foods.<sup>8</sup>

## “Studies of ‘infant and young child feeding culture’ can generate valuable new insights”

### Closing thoughts

Studies of “infant and young child feeding culture” can generate new insights and suggest options and avenues for translating nutritional sciences into actions in the households and communities where we work. We have called attention to the value of examining the mother-child dyad (or child-caregiver dyad) as an analytical focus, and to how this focus offers opportunities to expand the nature and scope of our studies for IYC nutrition.

In summary, by drawing on models and theories, such as biocultural models or the cultural ecological theory, which have been developed by social scientists, the cultural perspective can surely enrich our current scholarship on IYCF.

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