ENCOURAGING A MARKET IN HUMAN MILK

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Although economics teachers never invoke the metaphor of a lactating breast, it nicely illustrates a natural equilibrium between supply and demand. The more a baby sucks or a mother pumps, the more milk the breast produces. This is why a mother comfortably nurses an infant who doubles and then triples his weight during the first twelve months; it is why a woman can successfully nurse twins and even triplets. It is also the biological foundation for my central premise: that our legal regime should encourage a market in human milk—the superior source of infant nutrition.

Ever since medical technology has allowed humans to share blood, organs and other tissue, discussion has raged about the practical and ethical implications of commercializing products of the human body.[1] Breastmilk, however, is rarely mentioned in the course of the debate. This silence is curious, especially since babies have always consumed milk from women other than their biological mothers. Until the advent of infant formula, wet nursing was the only way to save an infant whose mother had died or was unavailable.[2] Even today informal sharing of milk continues, although the Centers for Disease Control and Prevention recommends against it.[3] Some mothers nurse another woman's child when babysitting. More commonly, women pump milk for the child of a friend or relative, typically because the child is adopted and the adoptive mother is not lactating.[4]

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[1] *See, e.g.*, Radhika Rao, Property, Privacy, and the Human Body, 80 B.U. L. Rev. 359 (2000); Danielle M. Wagner, Property Rights in the Human Body: The Commercialization of Organ Transplantation and Biotechnology, 33 Duq. L. Rev. 931 (1995); Stephen R. Munzer, An Uneasy Case Against Property Rights in Body Parts, 11 Soc. Phil. & Pol'y 259 (1994); Stephen R. Munzer, Kant and Property Rights in Body Parts, 6 Can. J.L. & Juris. 319 (1993); Keith N. Hylon, The Law and Economics of Organ Procurement, 12 Law & Pol'y 197 (1990); Mary Taylor Danforth, Cells, Sales and Royalties: The Patient's Right to a Portion of the Profits, 6 Yale L. & Pol'y Rev. 179 (1988); Roy Hardiman, Toward a Right of Commerciality: Recognizing Property Rights in the Commercial Value of Human Tissue, 34 UCLA L. Rev. 207 (1986).

[2] Naomi Baumslag & Dia L. Michels, Milk, Money and Madness 39-40 (1995).

[3] Lois D.W. Arnold, Becoming a Donor to a Human Milk Bank, Leaven, Apr.—May 2000, at 20 [hereinafter Becoming a Donor].

[4] *See, e.g.*, Katie Allison Granju & Betsy Kennedy, Attachment Parenting 99 (1999) ("When my sister and brother adopted my nephew from Korea, there was no question

The silence is even more striking because of the active milk banking programs that exist throughout the world. At present, there are six milk banks in the United States[5] and many more across the globe.[6] These banks are the formal mechanisms to help ensure that needy infants receive human milk. They collect milk from unpaid donors[7] and then dispense it to premature infants and those with significant nutritional and immunological problems, as well as to healthy babies whose mothers cannot breastfeed. First priority goes to premature infants or those who have malabsorption disorders, formula intolerance, immunologic deficiencies, congenital anomalies, or are recovering from surgery.[8] If milk supplies are adequate, the banks accept prescriptions for adopted babies, when a mother has died or her illness interrupts breastfeeding, when a mother's milk poses a health risk (for instance, she is HIV-positive), and in the rare instance where a mother's milk supply is insufficient to feed her child.[9]

Every medical institution and government agency responsible for maternal and infant health has identified the need to increase breastfeeding rates in the United States.[10] In this piece, I argue that we are overlooking how the milk banking system might advance this goal, particularly if it paid the milk source. Milk banks are already dispensing milk for adopted infants and other healthy babies who have no "special" need for breastmilk, but who instead benefit just like any healthy infant would. Building on the milk bank model and compensating women who express milk may increase the number of babies receiving human milk in three ways. First, and most obvious, we can expect the promise of a profit to motivate more women to pump milk for someone else's use. Second, and less apparent, mothers who might otherwise choose to formula-feed their babies may breastfeed if they

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where he would get his milk: from me! I was breastfeeding my daughter at the time . . . . I continued pumping milk for him for eight months and was able to fill about three-fourths of his bottles with breastmilk.").

[5] Human Milk Banking Ass'n of N. Am., Guidelines for the Establishment and Operation of a Donor Human Milk Bank app. A. (2000) [hereinafter HMBANA Guidelines]. The banks are located in Delaware, Colorado, California, Massachusetts, North Carolina, and Texas. A seventh bank will soon open in Iowa.

[6] Lois D.W. Arnold, A Snapshot of Milk Banking in Other Countries, Leaven, Apr.—May 2000, at 22 (cataloguing milk banking in Brazil, Bulgaria, Denmark, Finland, France, Germany, Greece, India, Japan, Norway, Sweden, Switzerland, and the United Kingdom).

[7] Some of these mothers express milk with the specific intent to donate it. Others pump milk for their own children and make one-time donations of several hundred ounces after realizing they have more than their babies need. Still others donate stockpiled milk after their babies die. Becoming a Donor, *supra* note 3, at 21.

[8] HMBANA Guidelines, *supra* note 5, at 6.

[9] *Id.* at 7.

[10] *See infra* notes 12-13, 25-29 and accompanying text.

know it will lead to another source of income; maintaining an adequate milk supply would be difficult without actually nursing a child.[11] Third, and least obvious (although arguably most important), the creation of a niche market may help convey the value of human milk and convince women to breastfeed even if they are not interested in making sales.

Part I reviews why health officials are so eager to increase breastfeeding rates and highlights the medical benefits that lactation provides for women and children. Part II explains the milk banking process and argues that compensating lactating women will not jeopardize the safety of the milk supply—one of the issues most frequently raised by those who object to compensating sources of human tissue. Part II also discusses how much banked milk might cost and how parents might choose between breastfeeding, formula, and banked milk. Finally, Part III explores how human milk fits into the larger normative debate about whether we should permit individuals to sell their bodily materials.

I. THE NEED

The American Academy of Pediatrics recommends that an infant receive nothing but breastmilk for the first six months of life, and that breastfeeding continue for at least the first twelve months.[12] Although infant formula is usually perceived as the second-best choice, the ranking by the World Health Organization emphasizes the inferiority of formula: after breastfeeding, "the second choice is the mother's own milk expressed and given to the infant in some way. The third choice is the milk of another human mother. The fourth and last choice is artificial baby milk."[13]

Breastmilk is better than formula because it is tailored to the precise needs of the human infant. Indeed, breastmilk contains over one hundred substances that are not in formula, including immunologic agents and other compounds that act against viruses and bacteria.[14] When breastfed infants are compared to formula-fed infants, the advantages of breastmilk are apparent. Research in the United States and other developed countries strongly suggests that breastmilk decreases the incidence and severity of many infant illnesses, including lower respiratory infection, middle-ear infection, bacterial meningitis, urinary tract infection, diarrhea, and a range

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[11] Comm. on Nutrition, Am. Acad. of Pediatrics, Human Milk Banking, 65 Pediatrics 854, 855 (1980).

[12] Am. Acad. of Pediatrics, Policy Statement: Breastfeeding and the Use of Human Milk, 100 Pediatrics 1035, 1037 (1997).

[13] WHO/UNICEF Joint Statement, Meeting on Infant and Young Child Feeding, 25 J. Nurse Midwifery 31, 33 (1980).

[14] Office on Women's Health, Dep't of Health and Human Serv., HHS Blueprint for Action on Breastfeeding, 10 (2000) [hereinafter HHS Blueprint].

of gastrointestinal infections.[15] Studies also suggest human milk can protect against a variety of chronic conditions, including insulin-dependent diabetes, Chrohn disease, celiac syndrome, asthma, eczema, and several allergenic diseases.[16] Breastfeeding is also associated with lesser incidence of sudden infant death syndrome and lower rates of childhood cancers, particularly lymphoma and leukemia.[17] Finally, research suggests that breastfed babies score higher on various measures of cognitive development, including intelligence tests.[18]

Breastfeeding also benefits the nursing mother. In the immediate postpartum period, it decreases postpartum bleeding and helps the uterus more rapidly return to its pre-pregnancy state.[19] Women who nurse frequently are unlikely to ovulate, which protects their bodies from the strain of having children in rapid succession.[20] In addition, women who breastfeed have lower incidences of postpregnancy obesity and decreased risk of premenopausal breast cancer and ovarian cancer.[21] They also have a decreased incidence of osteoporosis when compared with both women who do not bear children and women who bear children but do not breastfeed;[22] this improved bone remineralization reduces hip fractures in the postmenopausal years.[23]

While some women may experience initial physical discomfort or be overwhelmed by the need to be available for (or at least pump milk in anticipation of) every feeding,[24] on balance the decision to breastfeed seems like an easy one. Yet the rate of breastfeeding in the United States is the lowest of all industrial nations.[25] For more than twenty years, the federal government has aimed to have seventy-five percent of American mothers breastfeed in the early postpartum period and fifty percent breastfeed for six

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[15] Am. Acad. of Pediatrics, *supra* note 12, at 1035.

[16] *Id.*; Ruth A. Lawrence, A 35-Year-Old Woman Experiencing Difficulty With Breastfeeding, JAMA, Jan. 3, 2001, at 75 [hereinafter Difficulty With Breastfeeding].

[17] Difficulty With Breastfeeding, *supra* note 16, at 75.

[18] Am. Acad. of Pediatrics, *supra* note 12, at 1036; Difficulty With Breastfeeding, *supra* note 16, at 74.

[19] Am. Acad. of Pediatrics, *supra* note 12, at 1035.

[20] *Id.* The suppression of ovulation results from changes in a lactating woman's hormonal balance. *See* Ruth A. Lawrence, Breastfeeding: A Guide for the Medical Profession 450-56 (3d ed. 1989) (providing a detailed description of how lactation affects the reproductive cycle) [hereinafter Guide for the Profession].

[21] Am. Acad. of Pediatrics, *supra* note 12, at 1035.

[22] Difficulty With Breastfeeding, *supra* note 16, at 75.

[23] Am. Acad. of Pediatrics, *supra* note 12, at 1035.

[24] Guide for the Profession, *supra* note 20, at 194-95, 205-10.

[25] Baumslag & Michels, *supra* note 2, at 108.

months.[26] Reality has consistently fallen short of these aspirations. In 1998, sixty-four percent of mothers breastfed in the hospital and twenty-nine percent continued for six months.[27] In 2000, the federal government acknowledged the American Academy of Pediatrics' recommendation that breastfeeding continue for at least a year and announced the goal that by 2010, twenty-five percent of mothers breastfeed through the first year.[28] In 1998, sixteen percent of American women nursed for a year.[29]

These numbers, which fall short of the government's goal, probably overstate the amount of breastfeeding occurring in the United States. The benefits of human milk are greatest when formula is excluded altogether and decline proportionately as formula is added to the infant's diet.[30] The only comprehensive survey of infant feeding practices, however, counts a mother as breastfeeding even if she nurses just once a day.[31] Moreover, the actual duration of breastfeeding may be even shorter than the six month interval statistics suggest. For example, one study of mothers enrolled in the federal Women, Infants and Children (WIC) supplemental nutrition program showed that one-fourth of mothers who breastfed in the hospital were no longer breastfeeding by the end of the second week.[32] One half of the mothers who initiated breastfeeding had stopped by the end of the second month.[33] In sum, a careful study of the available data suggests that the state of breastfeeding in the United States is even bleaker than it initially appears.

The data have not always been so grim.[34] Until the 1930s, virtually all American children were breastfed either by their mothers or by wet nurses. However, improvements in mechanization, transportation, and

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[26] Pub. Health Serv., Dep't of Health and Human Serv., Healthy People 2010: National Health Promotion and Disease Prevention Objectives (2000) [hereinafter Healthy People 2010]; Pub. Health Serv., Dep't of Health and Human Serv., Healthy People 2000: National Health Promotion and Disease Prevention Objectives (1990) [hereinafter Healthy People 2000]; Pub. Health Serv., Dep't of Health and Human Serv., Healthy People 1990: National Health Promotion and Disease Prevention Objectives (1980).

[27] HHS Blueprint, *supra* note 14, at 9.

[28] Healthy People 2010, *supra* note 26, § 16.

[29] HHS Blueprint, *supra* note 14, at 9.

[30] Derrick B. Jellifee & E.F. Patrice Jellifee, Human Milk in the Modern World 78 (1979).

[31] *See* Healthy People 2010, *supra* note 16, § 16.1 (explaining methodology of Ross's Mothers Survey).

[32] Debbie L. Montgomery & Patricia L. Splett, Economic Benefit of Breast-feeding Infants Enrolled in WIC, 97 J. Am. Dietetic Ass'n 379, 381 (1997).

[33] *Id.*

[34] The emergence and continued market strength of formula is well documented in Baumslag & Michels, *supra* note 2, at xx-xxxi.

storage allowed the dairy industry to seek additional markets. After infant formula was found to be a lucrative outlet, its manufacturers launched a full-fledged effort to convince parents that science had created "viable 'humanized milk'" and that breastfeeding was primitive, dated, and unnecessary.[35] While the pro-formula rhetoric has changed over the decades, it has always suggested that formula is an effortless and more-than-adequate substitute for breastmilk:

> The reasons for not breastfeeding shift every few years. For a while, the "in" reason was "contaminants in mothers' milk." Next was the concern that breastmilk "led to the development of high cholesterol." After that came "breastfeeding is a precursor to sexual abuse." The reasons given for not breastfeeding vary from the misguided ("nursing passes on the mother's allergies") to the inane (self-appointed psychologists who insist that the close attachment of a breastfed baby to its mother is at the root of homosexuality). Two common reasons given for not breastfeeding today are "it excludes the father from participating fully in the care of the baby" and "formula is fine, after all, I was formula-fed and I turned out o.k."[36]

Throughout it all, the manufacturers' financial incentive has remained tremendous. For example, Florida's Attorney General has estimated that only $.16 out of every $1.00 formula companies charge wholesale purchasers goes to the cost of delivery and production.[37]

The formula manufacturers' efforts often have implicit support from the healthcare industries. Many obstetricians' offices distribute "parenting packs" which contain coupons for a variety of products, including formula. Indeed, hospitals have generated millions of dollars by awarding exclusive contracts which allow companies to distribute samples to maternity patients.[38] In addition, the use of formula makes the jobs of those on maternity wards easier: they can quantify exactly what goes into a newborn and simply give a fussing infant a bottle instead of taking him to his recovering mother. This natural inclination to do what is easiest and

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[35] *Id.* at xxv.

[36] *Id.* at xxix.

[37] *Id.* at xxiv.

[38] Mary Losch et al., Impact of Attitudes on Maternal Decisions Regarding Infant Feeding, 126 J. Pediatrics 507, 510 (1995) ("Mixed messages are given to mothers when physicians, nursing staff, and lactation consultants devote time and effort to educating new mothers and supporting their efforts to breast-feed, only to have the new mother sent home with a package of formula and formula coupons."); Yves Bergevin et al., Do Infant Formula Samples Shorten the Duration of Breast-Feeding, Lancet, May 21, 1983, at 1148 (reporting that mothers who breastfed in the hospital and received samples were less likely to be breastfeeding after one month, particularly those who were first-time parents, less educated, or had been ill postpartum).

most profitable is magnified because many healthcare professionals are inadequately instructed about the benefits of breastfeeding and do not know how to intervene when a mother experiences initial difficulties.[39]

The medical establishment's failure to aggressively promote breastfeeding is compounded by the policies of insurance companies. Hospital stays are usually limited to forty-eight hours, which provides little time for adequate instruction on how to breastfeed.[40] Moreover, many insurance companies fail to reimburse for lactation consultation, pumps, and other equipment that aid a mother who is experiencing problems.[41]

As more and more women have opted for formula feeding instead of breastfeeding, new parents have had increasingly fewer places to turn for firsthand knowledge about breastfeeding.[42] As such, there has been exaggerated concern about the breastfeeding process, and a lack of understanding about the extent to which it can be convenient and comfortable.[43] These concerns about the mechanics of breastfeeding are amplified for working new mothers, many of whom grapple with short maternity leaves and work sites that are unreceptive to a mother pumping milk when she is away from her infant.[44]

As a result of the marketing practices of infant formula companies, shortcomings in the healthcare and insurance industries, barriers in mothers' workplaces, and the loss of traditional sources of knowledge and support, formula has gradually replaced breastfeeding as the cultural norm. Today many parents believe that the "choice between formula-feeding and breastfeeding is merely a matter of personal inclination"[45] and "[e]ven mothers who have the sense that 'breast is best' are subjected to ingrained habits and the expectations of a society that does not embrace breastfeeding as a cultural norm."[46] Indeed, stories abound about women who have been

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[39] Am. Acad. of Pediatrics, Pediatrician Involvement in Breast-Feeding Promotion: A National Study of Residents and Practitioners, 96 Pediatrics 490, 490 (1995).

[40] Am. Dietetic Ass'n, Promotion of Breastfeeding—Position of ADA, 97 J. Am. Dietetic Ass'n 662, 663 (1995).

[41] *Id.*

[42] Healthy People 2000, *supra* note 26, § 14; David Rassin et al., Acculturation and the Initiation of Breastfeeding, 47 J. Clinical Epidemiology 739, 740 (1994).

[43] Several researchers have suggested that the most effective way to increase breastfeeding rates is to provide mothers with information about the practical aspects of breastfeeding (ease of night feedings, ability to express milk for bottle-feeding, etc.), instead of information about the medical benefits. *See, e.g.*, Losch et al., *supra* note 38, at 511.

[44] Am. Dietetic Ass'n, *supra* note 40, at 663.

[45] Baumslag & Michels, *supra* note 2, at xxviii.

[46] *Id.* at xxiv.

asked to leave public places when nursing their children.[47] Even though some state legislatures have amended their statutes to make clear that breastfeeding does not violate indecent exposure laws,[48] these collective stories help convey the message that breastfeeding (at least in public) is taboo.[49] Meanwhile, examples of the pervasiveness of formula are everywhere. Drugstores and grocery stores have entire aisles dedicated to formula, plastic bottles, and rubber nipples. In picture books and magazines, infants almost invariably drink from a bottle. And in airports, shopping malls, and other public places, a bottle is often the symbol for a nursery or playroom.

In an effort to bring breastfeeding back into vogue, the federal Department of Health and Human Services recently released a "blueprint for action on breastfeeding." It calls for the healthcare system to be more breastfeeding-friendly, for workplaces and child care centers to develop policies that support breastfeeding, and for communities to provide a range of support, including hotlines, support groups, and public marketing campaigns.[50] What has not been considered is that allowing human milk to be sold for cash is another means of challenging the norm that accepts formula as an adequate substitute for breastmilk.

II. WHAT PARENTS WOULD BE PURCHASING AND HOW MUCH THEY MIGHT BE PAYING

Part II begins by discussing the current practices of milk banks in the United States. Because banks are already in the business of supplying

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[47] *See, e.g.*, Corey Silberstein Shdaimah, Why Breastfeeding is (Also) a Legal Issue, 10 Hastings Women's L.J. 409, 415 (1999) (citing Evelyn Nieves, Public Furor Over Nursing Baby in a Car, N.Y. Times, Sept. 15, 1996, at 45 (reporting that Florida police officer warned a woman nursing in her car that she would be arrested for indecent exposure); Anna Quindlen, To Feed or Not to Feed, Balt. Sun, May 27, 1994, at 23A (reporting that museum security guard requested that she nurse her child in the bathroom); Suzette Hackey, A Delco Library Board Puts Restrictions on Breastfeeding, Phil. Inq., Oct. 26, 1994, at B2).

[48] *See, e.g.*, Fla. Stat. Ann. § 800.03 (West 2001); N.C. Gen. Stat. § 14-190.9 (2000); Va. Code Ann. § 18.2-387 (Michie 2001).

[49] A nice example of this sentiment comes from Dear Abby: "Dear Abby . . . . You excuse a nursing mother . . . by saying, 'Nursing is natural.' Well, many other functions are natural too, but they should not be flaunted in public. . . . Better Mommy learn early that giving a baby a bottle is no disgrace." Abigail Van Buren, Beauty Parlors and Babies are Hair-Raising Mix, St. Louis Post-Dispatch, June 1, 1993, at 2D, *cited in* Isabelle Schallreuter, Comment, Olson, Out of the Mouth of Babes: No Mother's Milk for U.S. Children, The Law, and Breastfeeding, 19 Hamline L. Rev. 269, 269 (1995).

In another example, officials at an Orange County airport removed a painting that showed "the slope of a woman's breast partly covered by a baby's mouth" after some passengers complained that it mad them feel uncomfortable. Winnie Hu, Removal of Painting Irks Nursing Mothers, N.Y. Times, Feb. 28, 2002, at B6.

[50] HHS Blueprint, *supra* note 14, at 14-16.

contaminant-free milk to needy infants, their protocol provides an outline of the safety measures that are likely to be formally implemented in a full-fledged market. At present, milk banks do not financially compensate their donors. This practice is rooted in the belief that an all-voluntary system enhances the quality of the milk that is made available. This Part suggests that the safety of the milk supply will not be compromised by offering compensation to lactating women. It also examines the need for the involvement of the Food and Drug Administration (FDA), as well as other measures that may affect the quality of banked milk. Finally, this Part speculates about the price that parents may have to pay for milk and the incentives that various pricing structures may create.

A. Milk Banking

Milk banking has a long history in this country. The first bank was founded in Boston in 1911 and paid lactating mothers to wet-nurse hospitalized infants.[51] Numerous banks were established during the next decade, as the emphasis shifted from wet nursing to milk that was expressed and temporarily stored. In 1943, the American Academy of Pediatrics published standards that covered all facets of human milk banking, including collection, processing, and storage.[52] After World War II, however, the interest in banked milk declined as breastfeeding rates decreased and formula became widely available.[53] Then, during the 1970s, advances in neonatology led to increased survival rates for sick and premature infants "for whom natural milk can often mean the difference between life and death."[54] In the wake of these advances, medical facilities and volunteer organizations created banks in many communities. The American Academy of Pediatrics updated the standards for milk banking in 1980.[55] However, the banks closed again shortly thereafter as manufacturers developed special formula for premature infants and doctors worried about AIDS being transmitted through milk. Then, in the 1990s, banks reopened because of renewed confidence in the safety of the milk supply and emerging knowledge about the benefits of breastmilk. Today, milk banks follow guidelines issued by the Human Milk Banking Association of North America (HMBANA).

By dispensing milk to adopted babies and other healthy infants whose mothers cannot breastfeed, banks implicitly endorse the position of

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[51] HMBANA Guidelines, *supra* note 5, at 1.

[52] Comm. on Mothers Milk, Am. Acad. of Pediatrics, Recommended Standards for the Operation of Mothers' Milk Bureaus, 23 J. Pediatrics 112 (1943).

[53] *See supra* notes 34-48.

[54] HMBANA Guidelines, *supra* note 5, at 1.

[55] Comm. on Nutrition, *supra* note 11, at 854.

the World Health Organization: when the biological mother's milk is unavailable, the milk of another woman is the next best option.[56] Obviously banks would not take this position unless they were confident that a "triple-step" screening process (comprehensive screening based on medical history, serological testing of all donors, and—most critically—pasteurization of expressed milk) protected their supply from HIV and other contaminants that can be transmitted through human milk.[57]

Women are advised not to breastfeed their own children in only a few circumstances, such as when the mother has HIV or adult T-cell leukemia virus or is undergoing chemotherapy or radiation treatment.[58] Milk banks, however, exclude broad categories of potential donors based in part on the protocol followed by blood banks.[59] In this regard, prospective donors document their medical histories in oral interviews and in written questionnaires. Banks exclude donors who belong to high risk demographic groups or engage in high risk behaviors.[60] Donors are thus rejected for reasons that are familiar to anyone who has ever given blood, such as having had sex with a homosexual or hemophiliac, having had a body part pierced in the last twelve months, and having lived in the Far East or Caribbean in the last twelve months.[61] In addition, banks exclude donors who have a history of hepatitis, systemic disorders, or chronic infections.[62]

Another sort of screening is implicit in the banking process as well. While some women can induce lactation even if they have not been pregnant and given birth,[63] milk banks only accept donations from women

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[56] WHO/UNICEF Joint Statement, *supra* note 13.

[57] Lois D.W. Arnold, Immunologic Benefits of Breast Milk in Relation to Human Milk Banking, 21 Am. J. of Infection Control 235, 238 (1993) [hereinafter Human Milk Banking]. In addition to HIV, a variety of organisms are excreted in breastmilk, including staphylococci, cytomegalovirus, and adult T-cell leukemia virus. *Id.* at 238.

[58] Am. Acad. of Pediatrics, *supra* note 12, at 1036.

[59] Human Milk Banking Ass'n of N. America, *Preface to* Guidelines for the Establishment and Operation of a Donor Human Milk Bank (2000).

[60] For a review of disqualification criteria in the United States, see Steven R. Salbu, AIDS and the Blood Supply: An Analysis of Law, Regulation, and Public Policy, 74 Wash. U. L.Q. 913, 947 (1996).

[61] HMBANA Guidelines, *supra* note 5, app. B.

[62] Human Milk Banking, *supra* note 57, at 238.

[63] Baumslag & Michels, *supra* note 2, at 52. Pregnancy is not always a necessary precursor to lactation. Indeed, because lactation dramatically increases the rate of a woman's metabolism, some women initiate it as a means of losing weight. Typically, however, it is adoptive mothers who try to initiate lactation. Some women pump several times a day for two to three months before the baby arrives. Other women tape to the nipple a thin tube that is connected to a pouch of formula. As the child "breastfeeds" the formula, the women's breast is stimulated and lactation may gradually begin. In both instances, lactation is the result of sustained suckling or pumping. *Id.*

who are lactating because they are nursing their own children. In this way, a donor stamps her milk with a good-faith seal of approval—she uses it to nourish her own child. But of course this self-screening is not foolproof. Even the most well-intentioned mother may not recognize that her milk is unsafe.

Therefore banks also serologically screen all prospective donors. Before they make their first donation, women are tested for hepatitis B, HIV-1, HIV-2, adult T-cell leukemia virus, and syphilis, all of which can be transmitted through breastmilk.[64] In geographic areas where certain diseases (such as tuberculosis) are endemic, milk banks may require additional medical tests.[65] As another precaution, a prospective donor's physician must submit a form certifying that the patient is in good health and would be an appropriate donor.[66]

As with self-screening, neither the serological screening nor the physician's form guarantees the safety of the milk supply. In regard to serological screening, viral agents might go undetected for four reasons.[67] First, a donor might be in a very rare chronic carrier state, where she is asymptomatic and persistently tests negative for the viral agent. Second, a women may have an atypical genetic variant of a virus which cannot be detected by screening tests. Third, the laboratory may make a mistake during the screening test and fail to identify an infected donor. Finally, if a donor is screened after infection but prior to the production of antibodies, the test will yield a false negative.[68]

Furthermore, while a lactating woman can produce milk in excess of what her own child needs, she cannot do so all at once. Milk banking requires a mother to make multiple deposits over a period of time, and she is only serologically screened before the first deposit. In addition, while the physician's form is somewhat revealing because the prospective donor presumably received regular and comprehensive medical care during her pregnancy, a doctor still might be misinformed about a patient's health and lifestyle habits. As such, the screening for risk factors that takes place in the oral interviews and written questionnaires is particularly important.

The reluctance to pay donors stems from concern that compensation will encourage dishonesty during the oral interview and on

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[64] HMBANA Guidelines, *supra* note 5, at 4.

[65] *Id.*

[66] *Id.* app. B.

[67] U.S. GAO, Blood Plasma Safety: Plasma Product Risks are Low if Good Manufacturing Practices are Followed 10 (1998) [hereinafter GAO Report].

[68] In the context of plasma, most serological errors occur for this reason. *Id.* at 10. As such, medical researchers continue to develop screening tests that shrink the window in which viruses can go undetected. *Id.* at 9; *see also* Salbu, *supra* note 60, at 934.

the written questionnaire.[69] In an enormously influential book from the 1970s, Richard Titmuss argued that when compared to volunteers, paid blood donors were more likely to lie about disqualifying aspects of their medical histories and lifestyles, especially if the donors were poor and "badly in need of money."[70] Although some scholars have criticized Titmuss' conclusions,[71] today they are generally accepted as gospel. Indeed, in the wake of Titmuss' work, the United States moved to an essentially all-volunteer system for obtaining whole blood. Because milk banks follow general blood protocol, they also refuse to compensate donors. But while Titmuss' argument may be convincing with regard to blood, it is less persuasive with regard to milk.

Even those who strongly support banning the sale of blood concede that policymakers should review the payment issue if "future technological and procedural improvement in blood screening reduce the risk of error to virtually zero."[72] For human milk, technology has done exactly this.[73] Unlike blood, organs, and other tissues, human milk retains beneficial properties after it is treated with heat. All banked milk is pasteurized,[74] which reduces HIV and other pathogens.[75] If a donor with unsafe milk slips through the safeguards—because she has a false negative or because she lies during the screening process or for whatever other reason—pasteurization will eliminate the contaminant. As an additional precaution,

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[69] Salbu, *supra* note 60, at 926; *see also* Russell D. Roberts & Michael J. Wolkoff, Improving the Quality and Quantity of the Whole Blood Supply: Limits to Voluntary Arrangements, 13 J. Health Pol'y Pol. & L. 167, 169 (1988) (reporting that less than one percent of whole blood is raised from donors who receive monetary compensation).

[70] Richard M. Titmuss, The Gift Relationship: From Human Blood to Social Policy 151-52 (1971).

[71] *See, e.g.*, Ross D. Eckert & Edward L. Wallace, Securing a Safer Blood Supply 12 (1985) (questioning the appropriateness of distinguishing between blood that is donated and blood that is purchased); Roberts & Wolkoff, *supra* note 69 at 168-69 (arguing that a no-payment system hinders market mechanisms that help regulate quality).

[72] Salbu, *supra* note 60, at 944.

[73] HMBANA Guidelines, *supra* note 5, at v. Technology may also be on the horizon that will make it possible to process whole blood without compromising its essential qualities. *See* Robert Davis, A Ray of Light for Blood Supply: Revolutionary Process Kills HIV, Other Diseases, USA Today, June 4, 2001, at 1A.

[74] HMBANA Guidelines, *supra* note 5, at 6. Physicians occasionally prescribe unpasteurized milk for severely ill infants, as a means of maximizing the milk's nutritional value and beneficial properties. Although banks will dispense fresh milk when it is prescribed, this article is concerned solely with markets in pasteurized milk. For a discussion of the effects of pasteurization on the quality of milk, see *infra* notes 81-86 and accompanying text.

[75] S.L. Orloff et al., Inactivation of Human Immunodeficiency Virus Type I in Human Milk: Effects of Intrinsic Factors in Human Milk and of Pasteurization, 9 J. Human Lactation 13, 16 (1993).

after pasteurization each batch of milk is bacteriologically tested; milk is not dispensed unless its bacteriological count is zero.[76]

The availability of pasteurization suggests that breastmilk is more analogous to plasma than to whole blood. Approximately eighty-five percent of plasma is collected from paid donors in commercial settings;[77] donors usually receive between $15 and $20 for the two hours required to remove whole blood, separate the liquid portion from the cells and serum, and then reinfuse the cells and serum back into the donor.[78] As with whole blood, policymakers have worried that infectious rates among paid plasma donors are higher than rates among volunteers donors, because of the financial incentive to lie about risk factors that would prevent an individual from donating.[79] This concern has empirical support, as a 1998 study by the United States General Accounting Office estimated that paid plasma donors are more than one and a half times more likely to donate plasma contaminated with unacceptable infectious agents.[80] Yet policymakers continue to allow the plasma industry to compensate donors. This is because the industry has developed highly effective processes that inactivate or remove many of viruses and bacteria that can contaminate plasma pools.[81] In the case of plasma, the medical technology has helped nullify the safety concerns traditionally associated with bodily materials collected from paid donors. The same is true for breastmilk.

Pasteurization does have disadvantages, because the composition of human milk changes somewhat during processing. Milk bank directors typically summarize the effects of pasteurization by stating that the milk retains fifty percent of its beneficial properties.[82] However, pasteurization is more complex than this simple statement suggests. Heat does not affect fat content and composition,[83] or long-chain polyunsaturated fatty acids

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[76] HMBANA Guidelines, *supra* note 5, at 6.

[77] GAO Report, *supra* note 67, at 6.

[78] *Id.* at 7.

[79] *Id.* at 1.

[80] *Id.* at 2.

[81] *Id.* at 24-26.

[82] *See, e.g.*, Jan Cienski, Human Milk Banks Come Back, but Questions Remain, L.A. Times, Nov. 12, 1995, at A5 (statement of Miriam Erikson, director of the milk bank at the Medical Center of Massachusetts), *available at* http://www.aegis.com/news/ap/1995/AP951103.html (last visited Apr. 1, 2002); Becoming a Donor, *supra* note 3, at 21.

[83] Natasa Fidler et al., Effects of Human Milk Pasteurization and Sterilization on Available Fat Content and Fatty Acid Composition, 72 J. Pediatric Gastroenterology & Nutrition 317, 321 (1998); Thomas Henderson et al., Effect of Pasteurization on Long Chain Polyunsaturated Fatty Acid Levels and Enzyme Activities of Human Milk, 132 J. Pediatrics 876, 877 (1998).

(some of which promote optimal brain development and are not found in formula).[84] Immunoglobulins and other factors that protect against illness are affected in varying degrees, but remain significant and functional against disease.[85] Pasteurization substantially reduces the concentration of several water soluble vitamins like C and B_6, but has no appreciable change on vitamins A, D, E, B_2, and B_{12}.[86] Moreover, further research may suggest ways of preventing the degradation that occurs during pasteurization. For example, one study showing a sixteen percent decrease in folate (a B vitamin) suggested that the addition of absorbate counteracts the effect of pasteurization.[87] Any effort to expand the use of banked milk is likely to be accompanied by research aimed at minimizing the effects of pasteurization, as well as by recommendations that infants receive vitamin supplements to replace what may be lost during heat processing.

Furthermore, while pasteurization and bacteriological testing can eliminate infectious contaminants, they cannot address donor lifestyle choices that compromise the quality of milk. For example, a milk bank will not accept donors who regularly use more than two ounces of hard liquor or its equivalent in a twenty-four hour period, smoke tobacco or use illegal drugs, regularly use mega-dose vitamins or some medications, or are on vegan diets that are not supplemented with vitamins.[88] Moreover, even after a donor is accepted, the bank instructs her to temporarily stop pumping in the twelve hour period after she drinks hard alcohol, after she takes certain over-the-counter and prescription medications, and during any period of acute infection.[89] Under the existing no-payment protocol, a donor has no incentive to disobey these instructions or misrepresent lifestyle choices. However, Titmuss's work suggests that the promise of cash payments might motivate this sort of misbehavior.

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[84] Difficulty With Breastfeeding, *supra* note 16, at 74.

[85] HMBANA Guidelines, *supra* note 5, at 4; Becoming a Donor, *supra* note 3, at 21; J.E. Ford et al., Influence of the Heat Treatment of Human Milk on Some of its Protective Constituents, 90 J. Pediatrics 29, 30-31 (1977).

[86] Fidler et al., *supra* note 83, at 317.

[87] Mary Donnelly-Vanderloo et al., Impact of Pasteurization and Procedures Commonly Used to Rethermalize Stored Human Milk on Folate Content, 14 Nutrition Research 1305, 1307 (1994). The study suggested that the addition of .01% absorbate would protect folate from degradation. This addition would result in an infant consuming more than the daily recommended amount of Vitamin C, but the study suggests that even lower concentrations of absorbate may be effective.

[88] HMBANA Guidelines, *supra* note 5, at 3. Despite the exclusions related to vegan diets, the mother's nutritional status does not affect the quality of her milk except in cases of severe malnutrition, when the mother's diet is "considerably affected." Jelliffe & Jelliffe, *supra* note 30, at 57.

[89] HMBANA Guidelines, *supra* note 5, at 3-4.

Fortunately, several factors suggest that this problem is manageable. First, the physician's form should cull at least some women who are dishonest during the oral interview or on the written questionnaire. Second, banked milk is pooled; milk from multiple suppliers is combined and pasteurized together.[90] In addition to ensuring a more uniform fat and nutrient content and a wider variety of immune factors, pooling dilutes and therefore makes negligible any drugs or toxins from the milk of an individual woman.[91] Third, banks could randomly test milk for alcohol, nicotine, and other substances. The threat of being permanently disqualified from selling milk may make a supplier comply with instructions, particularly because she can easily recoup any income lost because she imbibed at a New Year's Eve party, or otherwise compromised the quality of her milk. Because lactation is a supply and demand system, she need only pump more frequently for a day or two before her milk supply increases and she has more available for sale. Fourth, the most commonly used disfavored substances—alcohol and nicotine—are unlikely to have a detrimental effect, particularly after pooling. Smokers are still advised to breastfeed their children, and many breastfeeding mothers consume small amounts of alcohol without noticeable effects on their babies.[92] Finally, additional research may prove that many over-the-counter and prescription medications are not harmful. As one doctor explained, "I think most drugs are okay. . . . The trouble is that physicians look drugs up in the Physicians' Desk Reference . . . and it always says 'no information, do not recommend breast feeding.' I have yet to find a drug the PDR said was safe for breastfeeding."[93] Indeed, the federal Department of Health and Human Services has recently identified the need to better understand the effect of common medications on the quality of human milk.[94]

Of course, we can expect that some parents will conclude that the risk of any sort of contaminant is too high to justify the use of banked milk. These parents should be reminded that to date no infants have contracted HIV from banked milk and that physicians confidently prescribe banked milk for infants who are "very sick, very small, or both, [for whom] risk is unacceptable."[95] And to the extent that parents consider formula an acceptable alternative, they would do well to remember that formula itself is

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[90] *Id.* at 2, 5.

[91] Comm. on Nutrition, *supra* note 11, at 856.

[92] *See* Baumslag & Michels, *supra* note 2, at 98 (noting that while abstinence may be preferable, breastfeeding women are able to have two alcoholic drinks per day and the amount of nicotine found in a single packet of cigarettes without their infants experiencing ill effects).

[93] Difficulty With Breastfeeding, *supra* note 16, at 78.

[94] HHS Blueprint, *supra* note 14, at 20.

[95] HMBANA Guidelines, *supra* note 51, at 239.

not always safe, even in the United States. While most of us assume that infant formula is carefully monitored, the Food and Drug Administration has promulgated minimal regulations that reflect only basic ingredient and labeling requirements.[96] There were a series of infant formula recalls throughout the 1990s, with batches contaminated with everything from bacteria to bits of glass.[97] Even the water used to mix formulas can be unsafe, regardless of whether the water is added by the manufacturer or the parent purchases the formula in powder form and mixes it at home.[98] In recent years formula has given infants salmonella, sepsis, and meningitis.[99]

B. Measures to Further Enhance Quality

1. FDA Involvement

California and New York are only jurisdictions that have licensing requirements for milk banks established by statute.[100] In the absence of formal rules and regulations, milk banks voluntarily follow the HMBANA guidelines, which cover the collection, storage, processing, and dispensing of milk. The HMBANA also visits member banks to perform safety inspections. However, the only sanction the HMBANA can levy against a bank that fails to follow protocol is to kick it out of the Association. While many parents may be unwilling to seek out (and many pediatricians may be unwilling to refer parents to) a bank that is not associated with the HMBANA, other penalties may also be appropriate.

Thus, as the market in human milk develops, we can expect it to draw the scrutiny of additional states and the FDA. The FDA helped develop the HMBANA standards, but the agency's involvement was only informal.[101] Moreover, FDA participation came from its Center for Food Safety and Applied Nutrition, as if breastmilk were analogous to a special infant formula. However, because breastmilk is a human tissue more

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[96] *See* 21 C.F.R. §§ 106.20-.100 (1999).

[97] Baumslag & Michels, *supra* note 2, at 224-26 (compiling list of infant recalls).

[98] *Id.* at 104.

[99] *Id.* at 103.

[100] Cal. Health & Safety Code §§ 14132.34, 1644.5 (West 2001); N.Y. Comp. Codes R. & Regs. tit. 10, §§ 52-9.1 to -9.8 (2002). California's statute explicitly references the HMBANA Guidelines, while New York's regulations are patterned largely after these guidelines. New York's regulation also makes the ban on donor payment explicit by providing that no donor shall receive remuneration for her milk. tit. 10, § 52-9.1(b). At present, however, New York does not have a bank that supplies milk to needy infants.

[101] Mary Rose Tully, Human Milk Banking Ass'n of N. Am., A Proposal for Collaboration Between the FDA and the Human Milk Banking Association of North America to Assure the Quality and Safety of Donor Human Milk [hereinafter Proposal for Collaboration] (on file with author).

analogous to blood, involvement of the Center for Biologics Research would be appropriate.[102]

Because the HMBANA has already crafted its guidelines with the assistance of the FDA, the agency is likely to incorporate many of the existing procedures into the more formalized rules. The FDA also will look to physicians, caretakers, and the milk banks themselves for assistance in drafting the new regulations.[103] To the extent that breastmilk is analogous to blood, the agency will look to those rules that govern the operation of blood banks[104] and the use of blood as a finished product.[105] And to ensure compliance with its formalized regulations, the FDA will make surveillance inspections similar to those that occur at blood banks, with a review of standard operating procedures, the training records of personnel/management, equipment calibration, as well as an overall facility evaluation.

2. Liability Attaching to the Seller

In advocating the sale of bodily products, Lori Andrews has suggested that we could enhance safety by allowing liability to attach to the individuals who contribute contaminated materials.[106] Andrews acknowledges that, given the expected insolvency of some providers of bodily fluids, tort liability may have little practical consequence. As an alternative, she suggests that criminal liability might be an effective means of helping to ensure the quality of bodily materials offered in the marketplace.[107]

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[102] *Id.* It has also been suggested that increased federal oversight might prevent parents from going outside the milk bank system to obtain milk through informal arrangements with lactating women, a practice which the Center for Disease Control and Prevention has deemed unsafe. *Id.* However, regulation alone probably will not play an important role in preventing these "gray market" transactions. Many of the purchasing parents are convinced of the benefits of human milk but cannot or will not pay the price of banked milk. *See* discussion *infra* note 117 and accompanying text. With regard to these individuals, the surest way to decrease the number of gray market transactions is to decrease the price of banked milk.

[103] *See* 5 U.S.C. § 553(c) (1994) (requiring that the agency "give all interested persons an opportunity to participate in the rule making process through the submission of written data, views, or arguments with or without opportunity for oral presentation").

[104] 21 C.F.R. § 606 (1999).

[105] 21 C.F.R. § 211 (1999).

[106] Lori B. Andrews, My Body, My Property, 16 Hastings Ctr. Rep. 28, 34 (1986).

[107] *Id.* (noting that "the Ontario Law Reform Commission has recommended enacting a criminal law prohibiting people selling their gametes from knowingly concealing infectious and genetic disorders").

A survey of state and federal codes reveals a trend toward criminal accountability for those who offer contaminated bodily products. More than fifteen states have laws that criminalize the donation or sale of blood by persons who know that they carry a dangerous disease.[108] The United States Code contains a similar provision: any person convicted under it is subject to imprisonment ranging from one to ten years, a fine of at least $10,000, or both.[109] These laws differ in their details. For instance, some apply only to individuals who have HIV and others to individuals with a broader range of infectious diseases. Most require a person to know that she is infected; a few require only that she act recklessly with respect to her infected status; and one requires specific intent to transfer the disease to another. The federal provision and all but four of the state laws are drafted broadly enough to include the donation or sale of breastmilk by someone who knows she is infected.[110] California, where one of the milk banks is located, has a law that makes it a felony punishable by up to six years in prison for any person who knows she is HIV-positive to donate milk to a "breast milk bank that receives breast milk for purposes of distribution, whether she is a paid or a volunteer donor."[111]

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[108] *See, e.g.* Ark. Code Ann. § 5-14-123 (Michie 2001); Ind. Code § 35-42-1-7 (2000); N.D. Cent. Code § 12-1.-20-17 (2000); Okla. Stat. tit. 21, § 1192.1 (2000). The statutes cited in this footnote are probably not broad enough to apply to individuals who transmit infectious disease through breastmilk. For statutes which would apply to transmission through breastmilk, see *infra* note 112.

[109] 18 U.S.C. § 1122 (1994).

[110] *See, e.g.*, Fla. Stat. ch. 775, § 381.0041(11)(b) (2000) (applying to HIV-infected individuals who donate human tissue); Ga. Code Ann. § 16-5-60(c)(5) (2000) (applying to individuals who donate body fluids without disclosing that they are HIV-positive); Idaho Code § 39-608 (Michie 2000) (applying to individuals who transfer body fluids and know they are infected with HIV; statute includes breastmilk in its definition of "bodily fluid"); 720 Ill. Comp. Stat. Ann. 5/12-16.2 (West 2001) (applying to individuals who know they are infected with HIV and provide "potentially infectious body fluids" for use by another); Kan. Stat. Ann § 21-3435 (2000) (applying to individuals who knowingly "sell . . . bodily fluids with the intent to expose the recipient to a life threatening communicable disease"); Md. Code Ann., Health-Gen. I § 18-601.1 (2001) (applying to HIV-infected individuals who "knowingly transfer" the virus to another individual); Mo. Rev. Stat. § 191.677 (2001) (applying to HIV-infected tissue donors); Ohio Rev. Code Ann. § 3701.81 (Anderson 2001) (applying to persons who know they have a "dangerous, contagious disease" and "knowingly fail to take reasonable measures" to prevent exposing others); S.C. Code Ann. § 44-29-145 (Law. Co-op. 2000) (applying to individuals who know they are infected with HIV and sell or donate body fluids); Tenn. Code Ann. § 39-13-109 (2001) (applying to individuals who knowingly provide "potentially infectious body fluids . . . in any manner that presents a significant risk of HIV transmission"); Utah Code Ann. § 26-6-5 (2001) (broadly applying to any person who "willfully or knowingly introduces any communicable or infectious disease"); Va. Code Ann. § 32.1-289.2 (Michie 2001) (applying to individuals who know they are infected with HIV and sell bodily fluids); W. Va. Code § 16-4-20 (Michie 2001) (applying to persons with "an infectious venereal disease who perform any act which exposes another person to the disease").

[111] Cal. Heath & Safety Code § 1621.5 (Deering 2001).

Despite the existence of these statutes, at the time of this writing Westlaw did not report a single case in which charges were filed against an HIV-infected individual for donating blood or other bodily fluids. This dearth of prosecutions has contributed to a predictable debate about whether these laws serve any deterrent purpose. Some commentators argue that the statutes do not help shape behavior and may even discourage individuals from learning about their own health,[112] while others assert that "[e]ven absent a public prosecution of a criminal HIV exposure offender, the existence of an HIV specific statute . . . makes it clear to putative offenders that risky conduct will not be tolerated."[113]

For our purposes, however, whether these laws would actually deter women from donating contaminated milk may be of little consequence. In the context of blood, some have suggested that there is little room for these statutes to prevent actual harm. This is because medical advances continue to narrow the chance that a blood transfusion will result in HIV or another infectious disease.[114] The point is even more powerful in the context of human milk, where pasteurization and bacteriological testing have virtually eliminated the risk of contaminants.

It is possible, however, that the prospect of criminal liability may serve an important psychological function. Before parents decide to use banked milk, they must be confident in the safety of the milk supply. While academics debate whether and how the criminal law shapes behavior, much of the population-at-large does not engage in such nuanced analysis. Particularly when considered in the abstract, the possibility of criminal sanction would seem like another weapon in the arsenal of those working to ensure the quality of banked milk. And the more comprehensive the inventory of weapons, the more likely parents are to accept banked milk as a safe feeding option.

C. Price

In the final analysis, I suspect that well-informed parents who reject the use of banked milk will do so for reasons more related to finances than to safety. In 2000, milk banks charged a whopping $2.50 per ounce.[115] This price is unsurprising in light of overwhelming demand[116] and acute

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[112] *See* Richard Andrias, Urban Criminal Justice: Has the Response to the HIV Epidemic Been Fair?, 20 Fordham Urb. L.J. 497 (1993).

[113] *See* Mona Markus, A Treatment for the Disease: Criminal HIV Transmission/Exposure Laws, 23 Nova L. Rev. 847, 872 (1999).

[114] Andrias, *supra* note 112, at 507.

[115] Becoming a Donor, *supra* note 3, at 22.

[116] *See infra* note 178 and accompanying text.

scarcity. In 1999, women donated approximately 200,000 ounces.[117] Because the milk was shared primarily by premature and very sick infants, the number of children actually served is unclear. However, 200,000 ounces would provide a year's worth of nourishment for only about twenty-three full-term, healthy babies.[118] If an average infant received only breastmilk for the first six months and a combination of breastmilk and solids for the second six months (as the American Academy of Pediatrics recommends), the average monthly cost would be $1,575.[119] Although banks report turning away mothers who wish to purchase milk to avoid the perceived inconvenience of breastfeeding,[120] this exorbitant price is beyond the reach of most parents.

The "ideal" price for banked milk, and the incentives that such a price creates, are complex enough to warrant some discussion. Clearly, the decision to breastfeed is not just a function of the relative cash costs of breastmilk and formula. Breastfeeding is dramatically cheaper than formula feeding, even if one assumes that the breastfeeding woman initially uses a lactation consultant, invests in a pump, and regularly consumes extra calories to compensate for those lost to lactation. But despite the cash savings associated with breastfeeding, the vast majority of parents choose to formula-feed.

This suggests that other, non-cash considerations factor into parental decision-making. Some parents perceive breastfeeding as inconvenient: the mother has to be available for every feeding or pump milk in preparation for every feeding, the mother should avoid excess alcohol consumption, and so forth. Presumably, parents weigh these perceived inconveniences against the benefits of breastfeeding, including the implications for infant and maternal health, the cash savings, and perhaps even the mother/child connectedness that breastfeeding is believed to foster. Parents evaluate the advantages and disadvantages of formula in a similar fashion. As we might expect, what is considered a disadvantage of breastfeeding is often considered an advantage of formula-feeding, and vice versa (hence parents might perceive "maternal time commitment" as a cost of breastfeeding and a benefit of formula feeding, and perceive the "probable number of ear infections" as a benefit of breastfeeding and a cost of formula feeding). Not surprisingly, parental feeding decisions turn on

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[117] A Proposal for Collaboration, *supra* note 101.

[118] *See* Nat'l Ctr. for Envtl. Assessment, Exposure Factors Handbook § 14.2 (1997) (reporting on studies of average breastmilk intake over twelve month period).

[119] *Id.* (summarizing studies of breast milk intake).

[120] Maria Teresa Asquith et al., Clinical Uses, Collection, and Banking of Human Milk, 14 Clinics in Perinatology, 173, 177 (1987). Banks have also turned away individuals hoping to make yogurt and nutritional supplements. *Id.*

whether one expects greater net benefits from breastfeeding or from formula.

To express the same point by resorting to equations, parents engage in two cost benefit analyses:

$$EB \text{ (breastfeeding)} = B \text{ (breastfeeding)} + C \text{ (breastfeeding) and}$$

$$EB \text{ (formula)} = B \text{ (formula)} + C \text{ (formula)}$$

Here *EB* refers to the net expected benefits of the feeding decision, *B* refers to the benefits received from such a choice, and *C* refers to the costs of the choice. Parents choose breastfeeding when:

$$EB \text{ (breastfeeding)} > EB \text{ (formula)}$$

However, note the difficulty of plugging universal values into these seemingly straightforward equations. For example, not all parents will have the same information about the benefits of breastfeeding and the commitment that it entails. Moreover, different parents will assign different values to various aspects of the feeding decision. Take, for example, one of the more odoriferous parenting tasks. Some parents may assign value to the fact that because breastmilk is more easily digestible than formula, the diapers of breastfed babies are less offensive than the diapers of bottle-fed babies, while others may not assign any value to this fact, or may be totally unaware of it.

The cost-benefit analysis will also change over the course of the baby's first year. For instance, the perceived inconvenience of breastfeeding may be quite low when the mother is on maternity leave, and then increase dramatically when she returns to the workplace. Similarly, the cost of formula may be quite daunting when it is the infant's only source of calories, but less so when solid food is added to the diet. In sum, different parents will assign different values to the net benefits of breastmilk and formula, and their analyses will change as their infant's and their own circumstances change.

My proposal introduces the option of banked milk. In an ideal world, the price of banked milk would fall below the price of formula. To resort again to descriptive equations, parents will assess the net benefit of banked milk just as they evaluated the net benefit of breastfeeding and formula:

$$EB \text{ (banked milk)} = B \text{ (banked milk)} + C \text{ (banked milk)}^{121}$$

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[121] Again *EB* refers to the net expected benefits of the feeding decision, *B* refers to the benefits received from such a choice, and *C* refers to the costs of the choice.

Parents are likely to conclude that banked milk offers most of the convenience of formula and is more beneficial to the infant. Therefore, if banked milk costs the same or less than formula, we would expect most parents to conclude that the net benefit of banked milk is greater than the net benefit of formula. As such, the market for formula (the feeding option least favored by the World Health Organization) would largely disappear. However, since the price of raw milk must be high enough to motivate women to sell, the cost of banked milk will probably always be higher than the cost of formula.[122]

We can still expect, however, that an expanded market will decrease the price of banked milk, although perhaps only enough to be affordable for wealthier parents (or those whose costs are covered by third-party payers).[123] Elementary economics predicts that more women will contribute to a system that compensates them and that the increased supply will lead to falling prices (assuming that demand does not balloon). In terms of processing costs, banks will realize significant economies of scale by establishing long-term relationships with lactating women. With every drop in the cost of banked milk, increasing numbers of parents are likely to decide that its net benefit outweighs the net benefit of formula.

However, just as a falling price allows banked milk to better compete with formula, it also allows banked milk to better compete with breastfeeding. As parents compare the net benefit of banked milk to the net benefit of formula, they will also compare the net benefit of banked milk with the net benefit of breastfeeding. Any decrease in the price of banked milk will decrease its cost, and thereby increase its expected net benefit. As such, every drop in price will make some parents conclude that banked milk is a better feeding choice than breastfeeding. For example, some parents might perceive banked milk as having most of the health advantages of breastfeeding, but none of the inconveniences. To the extent that price may prevent these parents from opting for banked milk, each price decrease will motivate some of these parents to choose banked milk over breastfeeding. In other words, some parents who would choose to breastfeed in a world without affordable banked milk will decide instead to use banked milk.

Thus the availability of affordable banked milk will work to the disadvantage of some children. Banked milk is never as beneficial as the milk of a healthy biological mother. The composition of a mother's milk changes over time, to satisfy precisely the requirements of an ever-growing and developing child. While milk banks could pool and dispense milk according to the age of the supplier's own baby and the intended

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[122] As noted earlier, Florida's Attorney General has estimated that for every $1.00 spent by a wholesale purchaser of formula, the manufacturer's delivery and production costs are just $.16. *See supra* note 36 and accompanying text.

[123] For the role that third-party payers might assume, see *infra* note 228 and accompanying text.

recipients,[124] banked milk cannot duplicate the way a mother's milk responds to the needs of her infant. For instance, breastmilk often contains antibodies for the infectious agents to which the mother (and thus in all likelihood her infant) has recently been exposed. Breastmilk even varies with the weather; on hotter days, it contains more water so as to prevent infant dehydration.[125] Moreover, milk does lose some of its beneficial properties during pasteurization.[126]

All of this suggests the usefulness of a floor beneath which the price of banked milk could not fall. For instance, we can predict that many parents would abandon breastfeeding in favor of banked milk if the latter's cost were mere pennies per ounce. What if the cost were $1 per ounce? Or $1.50? Because people assign different values to the various aspects of each feeding decision, and because these values change over the course of the first year, we cannot predict a minimum price that will preserve the incentive to breastfeed, except at the margins. Thus, expanding the market in human milk requires a willingness to accept that some parents will abandon breastfeeding in favor of banked milk.

This tradeoff is an acceptable one for several reasons. First, presumably some women who would not otherwise have breastfed will initiate it in order to enter the market as a seller. Their breastfeeding may help offset the number of women who will abandon nursing and use banked milk. Second, if the price of banked milk is low enough to lure parents away from breastfeeding, presumably the price will lure parents away from formula as well. It may be that on a net basis, the health gains of children who are given banked milk instead of formula will be greater than the health losses of children who are given banked milk instead of breastmilk. In other words, banked milk may make children healthier overall, even though some individual children will be less advantaged than they would have been in the absence of affordable banked milk. Third, and most important, expanding the market in banked milk may help challenge the norm that embraces formula as a natural part of parenting. Before we can expect substantial increases in the number of parents who opt for breastfeeding, we must dispel the notion that formula-feeding is an acceptable substitute for breastfeeding. As information about the advantages of banked milk (and, by implication, breastfeeding) becomes more widely known, the cost of choosing formula over human milk becomes more widely understood. Indeed, we could reach the point where a parent who fills a bottle with formula will receive the same look of

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[124] Some premature infants can only tolerate milk that is expressed in the first month by a woman who has delivered before the thirty-sixth week of pregnancy. At present, milk that fits this description is separated from other donations and dispensed to premature infants. HMBANA Guidelines, *supra* note 5, at 2, 6.

[125] Jellifee & Jellifee, *supra* note 30, at 56-58 (1978).

[126] *See supra* notes 82-87 and accompanying text.

consternation that the woman who nurses her baby in public might receive today. And this would be a seminal step in dampening the cultural norm that influences parents to reject breastfeeding.

III. THE PROPRIETY OF PERMITTING WOMEN TO SELL MILK

As Julia Mahoney has noted, most human materials have already been commercialized, with "money changing hands at numerous points in the chain of distribution from tissue source to ultimate consumer: Transplant patients pay to receive organs . . . and biotechnology firms sell products derived from human cells."[127] The same is true of breastmilk; at present, banks sell milk by the ounce.[128] Because the milk is dispensed by prescription, the fee is reimbursed by major state and private medical insurance; until recently, WIC covered the cost of milk prescribed for its enrollees.[129] While the policy of the banks is not to discriminate on the basis of ability to pay, only a very small percentage of milk is provided as a courtesy.[130]

Strictly speaking, then, this Part is not about whether we should permit the sale of human milk, since it is already a market good. Instead, the "commodification question" is whether it is theoretically and pragmatically sound to permit lactating women to profit from the sale of milk.[131] This depends on a number of considerations: pre-existing normative judgments about which bodily materials are appropriately purchased or sold by their human sources, the potential effect on parent-child relationships, our already-established preference for altruism in the quest for bodily materials, and the implications for poor and minority populations.

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[127] Julia D. Mahoney, The Market for Human Tissue, 86 Va. L. Rev. 163, 165 (2000); *see* Melissa M. Perry, Comment, Fragmented Bodies, Legal Privilege, and Commodification in Science and Medicine, 51 Me. L. Rev. 169, 172, 182-83 (1999) (arguing that legal discourse has glossed over the economic interest the scientific community has in bodily materials).

[128] Banks describe themselves as charging a "processing fee." Indeed, donors sign consent forms containing the oxymoron, "I am also aware that my milk will not be sold, but a processing fee will be charged to the recipient of the milk." HMBANA Guidelines, *supra* note 5, app. B at 2.

[129] *See supra* note 101.

[130] Asquith, *supra* note 120, at 173.

[131] *See* Mahoney, *supra* note 127, at 165 (arguing that any debate about the commercialization of human materials "is not about commercialization at all, but rather about how the financial benefits available will be apportioned").

A. The Continuum of Bodily Materials

Policymakers often express concern that markets in bodily materials will encourage the belief that people themselves are commodities. This was one of the concerns which led to the passage of the National Organ Transplant Act (NOTA), which makes the selling of human organs a federal crime punishable by a fine of up to $50,000, a prison sentence of up to five years, or both.[132] The Senate Report on NOTA stated that "human bodies should not be viewed as commodities,"[133] and a task force charged with examining the policy issues surrounding organs affirmed that "society's values militate against regarding the body as a commodity."[134]

Henry Hansmann has noted that despite strong sentiment against commodification, "[i]t is difficult to find a clear statement of precisely . . . why [commodification] is undesirable."[135] The most salient critique of commodification comes from Margaret Radin, who suggests that some things are so connected to our "personhood" that placing a price on them devalues and degrades the human experience in unacceptable ways.[136] For example, paying a person $25,000 for a kidney,[137] $40,000 for a liver, and so forth might suggest that individuals are worth no more than the sum total of their parts. However, as Radin has noted, it is possible to "put a price on something and at the same time know it is priceless."[138] Moreover, as Lori Andrews has argued, definitions of personhood typically revolve around the senses and other cognitive traits, not around the possession of bodily materials. As Andrews explains, many of us view our "uniqueness as a person as more related to . . . intellectual products than . . . bodily products."[139] Yet we routinely allow individuals to sell their intellectual property without worrying about infringing on personhood. If we are

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[132] National Organ Transplant Act, Pub. L. No. 98-507, 98 Stat. 2339 (codified as amended at 42 U.S.C. §§ 273-274(e) (1988)).

[133] S. Rep. No. 382, at 12 (1984).

[134] Task Force on Organ Transplantation, Dep't of Health & Human Serv., Organ Transplantation: Issues and Recommendations 96 (1986).

[135] Henry Hansmann, The Economics and Ethics of Markets for Human Organs, 14 J. of Health Pol'y Pol. & L. 57, 74 (1989).

[136] Margaret Jane Radin, Contested Commodities 56 (1996) (defining personhood as incorporating "many kinds of particulars—one's politics, work, religion, family, love, sexuality, friendships, altruism, experiences, wisdom, moral commitments, character, and personal attributes"); *see also* Margaret Radin, Market-Inalienability, 100 Harv. L. Rev. 1849 (1987).

[137] Amy Harmon, Auction for a Kidney Pops Up on Ebay's Site, N.Y. Times, Sep. 3, 1999, at A13.

[138] Radin, *supra* note 136, at 102.

[139] Andrews, *supra* note 106, at 35.

willing to commodify our intellect, why might we be unwilling to commodify the body?

Hansmann has suggested that we separate our transactions into two normative categories: market and nonmarket.[140] In market transactions, a thing is exchanged for valuable consideration and both parties undertake the transaction with the expectation that they will be better off after the transaction is completed. In nonmarket transactions, an individual does not expect immediate personal gain, but feels "obligated to observe" a "variety of other-regarding social mores or norms."[141] Hansmann explains,

> Perhaps because our cognitive capacities are limited and because the social costs of inculcating norms are high, the psychological categories to which transactions are assigned tend to be broad and crude. It is not easy for us to consign one set of transactions to the nonmarket category and another seemingly closely related set of transactions to the market category. . . . If individuals were previously socialized to think it immoral to approach a set of transactions from a strongly self-regarding stance, then at first they are likely to find it deeply offensive to see the same transactions subjected only to the mores of the marketplace. Norms, by their nature, are not easily changed.[142]

Hansmann suggests that a number of factors help explain the negative normative judgment reflected in NOTA and in other responses to proposals to allow individuals to sell their bodily materials: the extent to which we have sought to encourage altruism in blood and organ donation, the possibility that poor and desperate individuals would be coerced into offering up their bodily materials, and the fact that the loss of some bodily parts is life-ending.

Despite the difficulty of re-evaluating normative categories, we have managed to distinguish between body parts and the ramifications of markets in them. For example, while the proposal for a market in human sperm initially encountered ethical resistance,[143] sperm banks are now widely accepted. Indeed, the framework of laws governing the sale of bodily materials seems to reflect societal judgments about when the existence of a market impermissibly infringes on "personhood." NOTA, for example, applies to the sale of kidneys, livers, hearts, lungs, pancreases, bone marrow, corneas, eyes, bone, and skin.[144] More than fifteen states and the District of Columbia have supplemented NOTA with similar legislation

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[140] Hansmann, *supra* note 135, at 75.

[141] *Id.* at 76.

[142] *Id.* at 77.

[143] *Id.* at 78.

[144] 42 U.S.C. § 274e(c)(1) (1999).

criminalizing the sale of certain body materials.[145] A couple of these statutes are drafted broadly, and make no express attempt to distinguish among the many body materials that an individual might offer for sale. Ohio's statute, for example, simply provides that no person can receive valuable consideration for "a human organ [or] tissue."[146] However, almost half of the state statutes specify that it is not a crime to sell bodily materials that are easily renewable and painlessly removed.[147] Michigan's

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[145] In addition, twenty-two states have enacted the 1987 Uniform Anatomical Gift Act (UAGA). Unif. Anatomical Gift Act, 8A U.L.A. 19 (Supp. 2001). Twenty-eight states and the District of Columbia have enacted the 1968 version of the Act. Unif. Anatomical Gift Act (amended 1987), 8A U.L.A. 18 (Supp. 2001). The UAGA is aimed primarily at establishing the procedure for becoming a post-mortem organ or tissue donor, and applies only to removals that occur after a person's death. Unif. Anatomical Gift Act § 1, 8A U.L.A. 29 (1987); Unif. Anatomical Gift Act § 1 (amended 1987), 8 U.L.A. 45 (1968). The 1968 Act did not specifically address the legality of selling body parts, but was widely interpreted to prohibit such activity. Gregory Crespi, Overcoming the Legal Obstacles to the Creation of a Futures Market in Bodily Organs, 55 Ohio St. L.J. 1, 14 (1994). The 1987 Act made this prohibition explicit by forbidding the purchase or sale of human "parts," if removal of the part is intended to occur after the death of the decedent. Unif. Anatomical Gift Act § 10, 8 U.L.A. 58 (1987). "Part" is defined broadly and includes any "organ, tissue, eye, bone, artery, blood, fluid, or other portion of the human body." Unif. Anatomical Gift Act § 1(7), 8 U.L.A. 30 (1987).

As such, the UAGA forbids the post-mortem sale of bodily materials like plasma and sperm, which usually can be sold by an individual during life. The rationale for this stricter prohibition is not entirely clear, but it probably stems from a variety of factors: a general reluctance to commodify the body, concern that the possibility of payment may make a deceased's relatives less likely to comply with the deceased's wishes regarding the disposition of her body, and a fear that a desperate person (or her heirs) may conclude that she is worth more dead than alive. In any event, because it applies only to parts removed after death, the UAGA has no bearing on the sale of breastmilk.

[146] Ohio Rev. Code Ann. § 2108.12 (Anderson 2001). *See also* La. Rev. Stat. Ann. § 14:101.1 (West 2000) (specifying that the statute applies to "kidney, liver, heart, lung, pancreas, bone marrow, cornea, eye, bone, skin, and any other human organ").

[147] Fla. Stat. Ann. § 873.01 (West 2000) (limiting prohibition on sales to the eye, cornea, kidney, liver, heart, lung, pancreas, bone, and skin); Ga. Code Ann. § 16-12-160 (2000) (prohibition on sale does not apply to "self-replicating body fluids"); 720 Ill. Comp. Stat. 5/12-20 (West 2001) (prohibition on sale does not apply to "body fluids"); Mich. Comp. Laws § 333.10204 (2000); 35 Pa. Cons. Stat. § 10025 (2000) (prohibition on sale does not apply to "tissues readily renewable by the human body"); Va. Code Ann. § 32.1-289.1 (2000) (provision analogous to Georgia statute); W. Va. Code § 16-19-10 (2001) (limiting prohibition on sales to the kidney, liver, heart, lung, and bone marrow). California's statute, although poorly drafted and internally contradictory, also appears to allow the sale of regenerative fluids. The statute provides that the prohibition on sales "includes, but is not limited to, a human kidney, liver, heart, lung, pancreas, or any other human organ or nonrenewable or nonregenerative tissue except plasma and sperm." Cal. Penal Code § 367f(c)(1) (West 2001). The confusion, of course, is that plasma and sperm are renewable. In addition, California's statute is aimed at the individuals who act as brokers in transactions involving bodily materials. As such, the statute does not apply to the person from whom the material is removed, or the person who receives the material. Cal. Penal Code § 367f(e) (West 2001).

statute, for instance, expressly states that it does not apply to "whole blood, blood plasma,...other self-replicating body fluids, or human hair."[148] Even state statutes that are not drafted broadly enough to include all renewable fluids reflect a consensus that it is unoffensive to permit the sale of some bodily materials that are quickly regenerated and painlessly extracted. These statutes typically include a short list of materials that fall outside the prohibition on sales. For example, Wisconsin's statute does not apply to the sale of "whole blood, blood plasma, a blood product or a blood derivative or human semen,"[149] while Texas's statute does not apply to hair, blood, or blood components.[150]

Thus NOTA and most of the state legislation reflect a similar normative judgment about the sale of bodily materials by living individuals, with legislatures forbidding only the sale of materials whose removal during life would cause serious pain, medical risk, permanent impairment, or even death itself. The legislation can be conceived as creating a continuum, with the parts that make us tick (e.g., heart, lungs) on one end and the more "expendable" parts (e.g., hair, semen) on the other.

Although not expressly mentioned in any of the legislation, breastmilk falls on the expendable, and hence permissible, end of the continuum. Human milk is not included in NOTA's list of prohibited transactions, and it is the kind of self-replicating fluid expressly exempted from prohibition by many of the state statutes. Similarly, human milk fits the spirit, if not the letter, of the state statutes that permit only specific regenerative materials to be sold. The sale of breastmilk may even be permitted under a statute as restrictive as Ohio's, which forbids the sale of organs and tissue. It is at least arguable that the statute was not intended to ban the sale of human milk, which is usually conceptualized as a fluid, not a tissue. Indeed, allowing the sale of human milk may fit almost seamlessly into the existing laws governing transactions in bodily materials. As such, compensating women for milk is unlikely to violate any preexisting normative standard or threaten modern conceptions of personhood.

Some, however, might argue that because breastmilk is connected to sexuality and reproduction, it cannot fit neatly on a general continuum of bodily materials. Proponents of this view believe that treating labor that is tied to sexuality and reproduction as a commodity is more problematic than

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[148] Mich. Comp. Laws § 333.10204 (2000).

[149] Wis. Stat. § 146.345 (2000).

[150] Tex. Penal Code Ann. § 48.02 (Vernon 2000). *See also* Conn. Gen Stat. § 19a-280a (2001) (prohibition on sale does not include hair, blood, or blood components); D.C. Code Ann. § 6-2601 (2001) (prohibition on sale does not include blood); Md. Code Ann., Health-Gen. I § 5-408 (2001) (prohibition on sale does not include blood or plasma); Nev. Rev. Stat. 201.460 (2001) (provision analogous to D.C. statute); N.Y. Pub. Health Law § 4307 (Consol. 2001) (provision analogous to D.C. statute); W. Va. Code § 16-19-10 (2001) (provision analogous to D.C. statute).

treating other sorts of labor as a commodity.[151] At the heart of this argument is the belief that work that is tied to a woman's sexuality or reproduction is more important to her concept of self than her other productive capacities.[152] However, it is difficult to decide which of a woman's capacities are essential to her personhood and which are not.[153] Different women will assign different values to their various capacities. Some women, particularly those who choose not to have children, will probably identify other aspects of their existence as more important: their employment, their religion, their friendships, and so forth. Indeed, on one level, the assertion that sexuality and reproductive capacity is particularly integral to female identity does little more than endorse traditional gender roles.

However, what about those women who do view sexuality and reproduction—and particularly the ability to nourish a newborn—as integral to their sense of self? Those who argue against commodification in the realms of sexuality and reproduction assume that it is degrading to women and damaging to female identity. Yet it is not always true that placing a price on something has negative consequences for the would-be seller. Assigning a price may also have validating effect, and result in society valuing, or at least appreciating, a good or service more than it did before. This is one of the premises of the scholarship that proposes creative means of assigning monetary value to housework and other domestic chores.[154]

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[151] *See* Debra Satz, Markets in Women's Reproductive Labor, 27 Phil. & Pub. Affairs 107, 108 (1992) (criticizing traditional justifications for what she labels the "asymmetry thesis"). Much of the discussion about commodifying labor connected to sexuality and reproduction has taken place in the context of surrogacy contracts. *See, e.g.*, Elizabeth Anderson, Value in Ethics and Economics 169-89 (1993); Peter Singer & Deane Wells, Making Babies: The New Science of Ethics and Contraception (1985); Michele Moody-Adams, On Surrogacy: Morality, Markets, and Motherhood, 5 Pub. Affairs Q. 175 (1991).

[152] Satz, *supra* note 151, at 108.

[153] *Id.* at 114 (making the same point).

[154] *See, e.g.*, Martha Ertman, Commercializing Marriage: A Proposal for Valuing Women's Work Through Premarital Security Agreements, 77 Tex. L. Rev. 17 (1998) (arguing that divorced homemakers suffer because their work is not commodified and proposing premarital security agreements as one tool for commodification); Katherine Silbaugh, Turning Labor Into Love: Housework and the Law, 91 Nw. U. L. Rev. 1, 79 (1996) (describing how the law treats housework and arguing that "increasing the frequency with which we place monetary value on housework would force an increased appreciation of its value both by those who do it and other household members"); Nancy C. Staudt, Taxing Housework, 84 Geo. L.J. 1571 (1996) (evaluating the possibility of taxing and valuing nonmarket labor in the same manner as market labor); *see also* Vicki Schultz, Life's Work, 100 Colum. L. Rev. 188, 190 (2000) (arguing that a value has been placed on housework, because "[a] great deal of work once performed in private households has been handed over to day-care providers, cleaning services, home health aides, landscapers, and the like").

Unlike other aspects of reproduction, breastfeeding is an activity that sorely needs affirmation. Pregnancy and childbirth are usually hailed as momentous events (at least if the parents are married and able to support the child); pregnant women "glow" and newborns are "gifts from heaven." Despite its documented medical benefits, breastfeeding rarely receives such validation. As one journalist has described, "[i]n strictly capitalist terms, breast-feeding doesn't qualify as productive. . . . Against the backdrop of a get-it-done society, a number of women grapple with the sense that they're 'doing nothing' while breastfeeding."[155] This message is reinforced in many ways, for example, by employment settings in which working mothers cannot express milk, by advertisements which present formula as an acceptable substitute, by letters in Dear Abby that chastise nursing mothers for "flaunting" their breasts in public.[156] In the midst of this background noise, putting a price on milk may help communicate that breastfeeding is something to be valued, and thereby reaffirm an aspect of identity that is important to some women.

In the context of surrogacy contracts, however, Debra Satz and other commentators have argued that this sort of affirmation is what is troubling:

> The problem with commodifying women's reproductive labor is not that it "degrades" the special nature of reproductive labor, or "alienates" women from a core part of their identities, but that it reinforces a traditional gender-hierarchical division of labor. . . . [U]nder very different background conditions, in which men and women had equal power and had an equal range of choices, such contracts would be less objectionable.[157]

While Satz's concern is understandable, it does not provide an adequate basis for rejecting a market in human milk. In discussions of the effects that markets in bodily materials have on the poor, commentators often assert that policies that ban sales create a "double bind": they eliminate a potential source of income for people who desperately need it, while the conditions that give rise to poverty go unremedied.[158] It is similarly problematic to invoke the perpetuation of gender stereotypes as a basis for restricting the economic choices available to women. Prohibiting a market in milk denies women the opportunity to leverage a capacity connected to

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[155] Sara Corbett, Case Study: The Nursing Debate: Location: Wilmington, Del.; The Breast Defense, N.Y. Times, May 6, 2001, § 6 (Magazine), at 82.

[156] *See supra* notes 47, 49 and accompanying text.

[157] Satz, *supra* note 151, at 128. *See also* Gena Corea, The Mother Machine 221 (1985) (making the same point).

[158] *See infra* note 201 and accompanying text. For use of the term "double bind" see Radin, *supra* note 136, at 123-24.

sexuality and reproduction, while doing little to actively eliminate the gender hierarchy to which Satz and others object.

B. Implications for Parent-child Relationships

When the sale of a bodily material is tied to reproduction, a common objection is that the existence of a market damages parent-child relationships, which are widely accepted as "closely connected to personhood."[159] Baby-selling is the ultimate example of this phenomenon: we can imagine markets in "superior" babies and "lemon" babies,[160] and we can imagine children and their parents "being preoccupied with measuring [a child's] dollar value."[161]

Indeed, the intersection between milk and the parent-child relationship is where my proposal is likely to encounter the most resistance from staunch advocates of breastfeeding. Many view breastfeeding as "much more than food."[162] The ten-point philosophy of La Leche, often considered the United States' foremost authority on breastfeeding, begins with these statements:

> 1. Mothering though breastfeeding is the most effective way of understanding and satisfying the needs of the baby.
>
> 2. Mother and baby need to be together early and often to establish a satisfying relationship and an adequate milk supply.
>
> 3. In the early years the baby has an intense need to be with his mother, which is as basic as his need for food.
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> 4. Breast milk is the superior infant food.[163]

In this formulation, the emotional and nutritional benefits of breastfeeding are inseparable. Moreover, the nutritional aspects are arguably secondary to the mother-child bond that breastfeeding is believed to foster.

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[159] Radin, *supra* note 136, at 137.

[160] *See* Gary S. Becker, A Treatise on the Family 140-41 (1991).

[161] Radin, *supra* note 136, at 138. *See also* Matter of Baby M, 537 A.2d 1227, 1250 (N.J. 1988) (noting, in the course of striking down a surrogacy contract, that "a child [will] learn her life was bought"); Anderson, *supra* note 151, at 170 (criticizing surrogacy contracts as something that "insinuates the norms of commerce into the parental relationship").

[162] Granju & Kennedy, *supra* note 4, at 172.

[163] *Id.* at 142-43.

Proponents of this holistic conception may worry that introducing (or, in light of the long history of wet nursing, reintroducing) a profit incentive sullies an act of parental nurturing. The first response to this concern is pragmatic: the majority of babies in this country are bottle-fed. Neither these babies nor their mothers experience the sense of connectedness that accompanies breastfeeding. This portion of the mother-child population undeniably benefits under my proposal, because at least the bottles are more likely to be filled with milk instead of formula.

What about those women who start breastfeeding in order to become a seller, or who breastfeed but do not enter the market? Looking beyond the obvious health advantages these choices entail, does market participation or even the mere existence of a market taint the experience of these women or their children? I think not. Most people do not compartmentalize their activities into those that are about money and those that are about more ethereal matters. Consider, for example, the myriad ways in which good teachers nurture their students. If you ask a teacher why she is talking with a student about what he did last summer, or if you ask a student why a teacher congratulated her on her latest accomplishment, neither the teacher nor student is likely to invoke the teacher's paycheck. The existence of a market, or even participation in the market, does not necessarily mean that something is "all about money." In other words, paying a woman for expressed milk does not mean that the act of breastfeeding, and all that accompanies it, is commodified. Indeed, breastfeeding proponents have already proven this point. Women are routinely told that not having to spend money on formula is one of the benefits of breastfeeding.[164] Just as the ability to save money has not eroded the emotional aspects of breastfeeding, neither should the ability to earn it.

C. Altruism

Some scholars perceive human tissue as a means of encouraging generosity and demonstrating the degree to which we depend on each other and our communities:[165]

> The altruistic experience of the donor . . . is said to bring us closer together, cementing our community in a way that buying and selling cannot. The possibility of reciprocity is also part of this cementing process, because a donor's sense of obligation could be partially founded on the recognition that she [or

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[164] *Id.* at 146.

[165] *See, e.g.*, Titmuss, *supra* note 70, at 70-75 (arguing that systems that do not compensate sources of human blood are morally superior to other systems); Marcel Mauss, The Gift (1954) (exploring what gift giving reveals across cultures about personal and group relationships).

> someone she loves] could be a recipient someday. From the recipient's perspective, it is said that knowing one is dependent on others' altruism rather than on one's own wealth creates solidarity and interdependence, and that this knowledge of dependence better preserves and expresses the sanctity of life.[166]

According to this view, a system that compensates the sources of human materials is objectionable because individuals who might otherwise donate will opt for payment, thereby decreasing social cohesion and the sense of shared community.

Other scholars have rejected the notion that the possibility of payment will mean the end of altruism and the connectedness it creates.[167] These commentators argue that altruism and market participation regularly co-exist. Lawyers perform pro-bono work; lumber stores provide materials to Habitat for Humanity; grocers give food to soup kitchens. In the context of human products, Lori Andrews emphasizes the example of a patient who was receiving $10 per milliliter for his blood from a private company seeking to manufacture a diagnostic test for hepatitis B. This same patient was also making gifts of his blood to a research project which was trying to develop a vaccine for the virus.[168] Despite the availability of payment, then, sometimes we might choose to give a good or service away for free.

Moreover, even if altruism might be the preferred normative choice, there are pragmatic limits to what we can reasonably expect it to yield. Set aside momentarily that under my proposal, milk may be made available for the children of mothers who could breastfeed, but simply choose not to. For the time being, consider only the milk that would be given to those children whose mothers could not breastfeed, either because of the mother's own health or because the children are adopted. Because formula is not a satisfactory substitute for breastmilk, these children are roughly analogous to individuals in need of other human materials. Indeed, for very sick children, breastmilk can mean the difference between life and death, just as a blood transfusion might. However, we cannot reasonably anticipate that altruism will inspire the sort of time commitment necessary to produce large quantities of breastmilk. To express enough milk to nourish someone else's baby, a woman would have to pump several times each day, for at least ten minutes per pumping session.

Again an analogy to plasma is appropriate. Donating plasma takes longer than donating whole blood. In plasmapheresis, the blood that flows from the vein is spun out, so that plasma separates from the cells, which are

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[166] Radin, *supra* note 136, at 96.

[167] *Id.* at 104-07; Andrews, *supra* note 106, at 35.

[168] Andrews, *supra* note 106, at 35; *see also* Lori Andrews & Dorothy Nelkin, Body Bazaar: The Market for Human Tissue in the Biotechnology Age 24-25 (2001) (discussing the same individual).

then reinfused into the donor.[169] Because the red cells are returned to the donor, an individual can provide plasma much more frequently than she can donate whole blood. A plasma donor may contribute once every forty-eight hours, with a maximum limit of twice per week. Whole blood donors, on the other hand, may only contribute once every fifty-six days, or six times per year.[170] The time consuming nature of plasamapheresis and the frequency of donations are the most-oft cited rationales for allowing individuals to sell their plasma, even when they are not permitted to sell whole blood.[171] Similarly, compensation is necessary if women are to commit to pumping often enough to produce substantial quantities of milk.

Return now to the part of my proposal which contemplates milk being made available for children whose parents choose not to breastfeed. Even those who strongly favor altruism would not argue that this population should receive gifts of breastmilk. For these parents, reliance on banked milk is analogous to hiring out a household chore; they have decided that they would rather pay for milk than provide it themselves. And no one would suggest that individuals employed to take care of children, mow a lawn, or attend to other domestic tasks should work for free.

Moreover, even the most ardent advocates of altruism concede that we must consider payment if generosity fails to produce the necessary supply.[172] Lately this pragmatic concession has received much press, with many physicians and ethicists arguing that the almost fifty thousand people waiting for kidneys in the United States make it necessary to offer payment to live donors.[173] As with kidneys, milk banks' reliance on altruism has been largely unsuccessful. While some of the scarcity may result from ineffective advertising by milk banks, presently less than one percent of breastfeeding women donate milk.[174] At the same time, the use of banked milk has skyrocketed.[175] For instance, during 1999, consumption of donor milk in California increased by thirty-three percent and banks across the country were "overwhelmed."[176] They announced "a shortage of donated

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[169] GAO Report, *supra* note 67, at 7.

[170] *Id.* at 7-8.

[171] *See* Alvin W. Drake et al., The American Blood Supply 62-63 (1982) (describing the greater willingness to compensate sources of plasma).

[172] *See* James Childress, Practical Reasoning in Bioethics 299-300 (1997).

[173] J. Radcliffe-Richards et al., The Case for Allowing Kidney Sales, 351 The Lancet, June 27, 1998, at 1950; Michael Finkel, Complications, N.Y. Times, May 6, 2001, § 6 (Magazine), at 31-32 (interviewing physicians who perform kidney transplants).

[174] Charles Downey, Donating Mother's Milk: The Gift of Life (Dec. 23, 1999), *at* http://www.cnn.com/1999/HEALTH/women/12/23/breast.milk.angles.wmd (last visited Apr. 1, 2001).

[175] *Id.*

[176] *Id.*

breast milk nationwide."[177] Indeed, the following message posted on the Adoptive Breastfeeding Resource Website is typical: "Do You Have Breast Milk to Spare? Do you know someone who does? Adoptive parents looking for 'milk angels' . . . . No amount of milk is too small."[178]

It is reasonable to expect that in a system where suppliers are paid, the women who currently donate would probably continue to provide milk, and that the cash incentive would motivate additional women to participate.[179] As economists have argued about blood, "putting a positive price on blood would call forth additional supplies; anyone willing to give blood away would be even happier to sell, and those who were reluctant to donate might be tempted to sell."[180] Indeed, the internet postings of potential suppliers are illustrative: "I have an overabundant supply of milk. Am currently breast feeding my 1 month old and would be willing to sell the extra supply. Where would I find out information about 'milk banks'?"[181] Milk bank directors in Sweden and Denmark, where women are paid for milk, report that compensation encourages women to contribute.[182]

In addition, we cannot expect altruism without first considering the characteristics of the person from whom generosity is expected.[183] Because of the necessary time commitment, the mothers most able to express extra milk are those on maternity leave, or those who haven chosen to stay at home temporarily, or to work part-time. Their financial sacrifice extends beyond the obvious loss of wages for hours spent at home instead of at the workplace. Indeed, a rich literature documents the economic costs of compromising work for family.[184] For instance, women with children make only seventy percent of the wages of comparable women without

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[177] Joanne Larson, Mother's Milk Bank Needs Your Milk (2000), *at* http://www.dietitian.com/milkbank.html (last visited Apr. 1, 2001).

[178] Adoptive Breastfeeding Resource Website, Looking for Breastmilk, *at* http://www.fourfriends.com/abrw/looking.htm (last modified Jan. 22, 1999).

[179] Hamish Stewart, Rationality and the Market for Human Blood, 19 J. Econ. & Behavioral Org. 125, 127 (1993).

[180] *Id.*

[181] Adoptive Breastfeeding Resource Website, *supra* note 178.

[182] Mary Rose Tully, Currents in Human Milk Banking: Human Milk Banking in Sweden and Denmark, 7 J. Human Lactation 145, 145 (1991) [hereinafter Currents].

[183] Mahoney, *supra* note 127, at 216 (making the same point).

[184] *See, e.g.*, Ann Crittenden, The Price of Motherhood (2001); Joan Williams, Unbending Gender: Why Family and Work Conflict and What to Do About It (2000); Rhona Mahony, Kidding Ourselves: Breadwinning, Babies and Bargaining Power (1995); Michael Selmi, Family Leave and the Gender Wage Gap, 78 N.C. L. Rev. 707 (2000); Laura Kessler, The Attachment Gap: Employment Discrimination Law, Women's Cultural Caregiving, and the Limits of Economic and Liberal Legal Theory, 34 U. Mich. J.L. Reform 371 (2001).

children.[185] In the absence of adequate maternity policies, many women take unpaid leave; even the briefest of unpaid career interruptions negatively affects wages, seniority, and promotion.[186] Furthermore, women who work part time to accommodate the demands of motherhood will find that part-time workers earn about twenty percent less per hour than similar full-time workers at similar jobs.[187] In sum, the workplace is riddled with "rules and practices and habits of mind that discriminate against anyone who cannot perform like an 'unencumbered' worker."[188] When a woman who has recently fallen victim to these rules and practices is asked to donate milk, she is likely to respond that she has already made sufficient altruistic sacrifice in the name of motherhood.[189]

How much women could expect to earn is unclear.[190] One possibility is to allow milk banks to pay whatever they choose. In general, we would expect banks to pay the amount that maximizes supply. Depending on the costs of processing and overhead, however, banks may be unable to pay enough to motivate a substantial number of women to contribute and still be able to sell the milk at a price low enough to increase demand. If this were the case, some form of government subsidy could be

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[185] Crittenden, *supra* note 184, at 95.

[186] *Id* at 96-97.

[187] *Id.* at 97.

[188] *Id.* at 98.

[189] Crittenden argues that children are not the only beneficiaries of parental altruism. Instead, she suggests that we are all the beneficiaries of the time and effort that primary caregivers devote to raising children. As Crittenden sees it, primary caregivers are actively engaged in the production of human capital—children who will evolve into a supply of skilled workers. *Id.* at 71-86. She relies heavily on the work of economists, who identify "human capital as at least as important as physical in explaining international differences in standards of living." *Id.* at 80 (citing N. Gregory Mankiw, Macroeconomics 109 (1997)).

[190] In Sweden, banks pay about the equivalent of $21 per liter, or roughly $.60 per ounce. Tully, *supra* note 182, at 145. Banks accept donations during the first three months of lactation. The average woman contributes a total of 50 liters, or 1700 ounces, for the equivalent of about $1050. *Id.* If similar compensation were available in the United States, the incentive to participate would be tremendous, especially since milk banks in the United States do not limit the number of months a woman can donate. Indeed, if a woman contributed milk during the entire first year, she could earn more than $4000.

To help put $4000 in perspective, consider that it is nearly one-tenth of the median household income of Americans. *See* U.S. Census 2000, *available at* http//:www.census.gov (last visited Apr. 15, 2002) (reporting that in 1999, the median household income was $40,816). As another measure, in 2000, the maximum amount available under the earned income tax credit was $3,888. *See* IRS Website, *at* http://www.irs.gov (last visited Apr. 15, 2002) (amount available for persons with two or more qualifying children). Under President Bush's much-touted tax plan, by 2010, a married couple with two children and an income of $75,000 will realize $1700 in tax savings. Bernard Baumohl, Tax Cut Checklist: It's a Done Deal! Here's What Bush's $1.35 Trillion Tax Plan Means for You, Time, June, 4, 2001, at 47.

used to strengthen a woman's economic incentive to make her milk available.

These subsidies could be either direct or indirect. For the former, the government could either make payments to the women themselves or subsidize the purchase of banked milk (so as to offset the effect that a high selling price might have on demand). Indirect subsidies, however, may be easier to sell politically.[191] At present, earnings from the sale of blood or other parts of the body are treated as income.[192] However, any income derived from the sale of milk could be tax-free, which is the approach Denmark takes.[193] In addition, women could deduct business-related expenses.[194] Under current protocol, milk banks provide storage containers but mothers must procure their own pumps.[195] Electric pumps that simultaneously empty both breasts rent for approximately $30 a month and sell for about $250.[196] While the number of extra calories a woman needs to breastfeed varies, women could deduct a predetermined amount for each month they contributed milk. For example, a 1993 study in Hawaii found that the monthly extra food cost of a lactating woman was between $32 and $40.[197] Whatever form the subsidy takes, the central point is that there are many ways to strengthen the financial incentive to contribute to the milk supply.[198]

D. Potential for Exploitation

Upon learning the subject of this article, a colleague asked if I had considered that the ability to sell breastmilk might become a cornerstone of

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[191] It has often been suggested that indirect subsidies should be used to encourage the donation of human materials. One common proposal is to allow blood donors a tax deduction. *See* Roberts & Wolkoff, *supra* note 69, at 176 & n.14.

[192] *See* United States v. Garber, 607 F.2d 92, 100 (5th Cir. 1979) (defendant did not pay income taxes on wages earned from plasmapheresis; circuit court remanded so that jury could decide whether defendant was aware of her tax liability).

[193] Tully, *supra* note 182, at 145.

[194] *See* United States v. Green, 74 T.C. 1228 (1980) (allowing petitioner to deduct the cost of high protein foods and diet supplements that were necessary to maintain the quality of her plasma).

[195] HMBANA Guidelines, *supra* note 5, at app. B at 9.

[196] Medela Price List (2000) (on file with author).

[197] Lydia A. Jarosz, Breast-feeding Versus Formula: Cost Comparison, 52 Haw. Med. J. 14, 15-16 (assuming that each day a lactating woman requires an additional six-ounce serving of orange juice, a liter of milk, one egg, and one slice of whole wheat bread).

[198] Of course, even indirect subsidies are a form of government spending and therefore have to be evaluated against other budgetary obligations. *See* discussion *infra* notes 230-238 and the accompanying text (some reasons why promoting banked milk should be a priority).

the next "from-welfare-to-work" initiative. Indeed, those who strongly oppose markets in bodily products have developed a rich parade of resulting horrors: the government putting tax liens on the body, creditors garnishing the body, and so forth.[199] These worst-case scenarios reflect a common objection to proposals that individuals be allowed to sell bodily materials: the concern that markets will exploit the poor for the benefit of the rich.[200]

The usual response to this concern is that the poor are not aided by policies that limit access to potential sources of income. Rules that prohibit the sale of human biological materials are particularly disadvantageous for the poor, who are most in need of the income these transactions would provide.[201] If we are worried that individuals might sell bodily materials as an act of economic desperation, the rejoinder continues, remedying the conditions that give rise to the desperation is a far more sensible course of action than banning sales. In this spirit, scholars examining the problematic wet-nursing practices in seventeenth and eighteenth century Europe have been reluctant to wholeheartedly condemn the industry, which "provided a status job and financial security in a culture offering very few safe, lucrative jobs to uneducated women."[202]

Another common response to the concern about exploitation is that most paid labor taxes the body in one way or another. When a bodily material can be removed safely, engaging in the transaction may be less dangerous than firefighting, construction, and a whole host of jobs or tasks that people are routinely paid to do.[203] Of course, the analogy between transactions in bodily materials and other forms of paid physical labor is not entirely neat. Unlike ordinary employment situations, exchanges in human materials are often irreversible.[204] A person who has given up a kidney cannot think better of the arrangement and get the kidney back. However, when the bodily product is renewable, the transactions are harder to distinguish from other forms of physical labor. A woman could stop selling her milk in the same way she could stop working construction or leave any other type of paid employment.

Arguments about exploitation of the poor carry less force in the context of breastmilk for another significant reason as well. When an

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[199] *See* Andrews, *supra* note 106, at 32 (collecting examples of the worst-case scenarios that could result from the ability to sell bodily parts).

[200] Radin, *supra* note 136, at 125-26; J. Radcliffe-Richards et al., *supra* note 175, at 1950; Hansmann, *supra* note 137, at 16; Andrews, *supra* note 108, at 31-32.

[201] *See, e.g.*, Radin, *supra* note 136, at 123-24; Madeline Morris, The Structure of Entitlements, 78 Cornell L. Rev. 822, 886 (1993) (stating that "market inalienability" distributes wealth away from the poor); Andrews, *supra* note 106, at 32.

[202] Baumslag & Michels, *supra* note 2, at 46.

[203] Andrews, *supra* note 106, at 32.

[204] Hansmann, *supra* note 135, at 17.

individual sells other human materials, the transaction either leaves the body worse off (e.g., with only one kidney instead of two) or has no net effect (as with semen, hair, and possibly blood). Lactation, in contrast, leaves the body better off than it otherwise would have been. Women who lactate in order to participate in the market are likely to experience a host of health benefits, including lower rates of cancer, obesity, and osteoporosis.[205] Indeed, to my knowledge, the sale of breastmilk is the only exchange of human materials that leaves the seller more medically advantaged than she would have been had the transaction not occurred.

Some might argue that in light of historical precedent, however, we should worry about the physical well-being of the children whose mothers sell milk. As previously noted, at one time wet nursing was a profitable and highly-regarded position for working-class European women.[206] In some instances, women seeking these positions "neglected, abandoned, and even deliberately smothered" their infants so that they would be hired as wet nurses.[207] Indeed, eighteenth-century France eventually passed a law requiring proof that a woman's own infant was at least nine months old before she was hired as a wet nurse.[208] Because of the larger social net and the greater opportunities that exist today, the possibility of lactating women abandoning or killing their children seems remote (children interfere with a parent's employment in a number of ways, yet infanticide is a rare crime). Perhaps the modern-day concern is that women will deprive their own infants of breastmilk in order to have more for sale.

On this point, it is important to recognize that women were not driven to such desperate measures because they could not produce enough milk for multiple children. Rather, the nature of wet nursing demanded that a woman live with her employer, who was often reluctant to accommodate both the wet nurse and her child.[209] Nowadays, of course, no woman would wet nurse; instead, she would express milk with the aid of an electric pump. And no mother would have to make a Hobson's choice between providing milk for own child or the child of another woman. If a mother wants more milk available for sale, she can increase her supply within a couple of days by pumping more frequently or for longer periods of time.

Moreover, permitting the sale of human milk is likely to physically benefit the children of poor parents. The demographic group most likely to breastfeed is white, has at least some college education, and a higher family

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[205] *See supra* notes 19-23 and accompanying text.

[206] *See supra* note 202 and accompanying text.

[207] Baumslag & Michels, *supra* note 2, at 43.

[208] *Id.*

[209] *Id.*

income.[210] Arguably, however, poorer children have the most to gain from breastmilk, which helps protect against many of the illnesses and chronic diseases that are prevalent in poorer populations.[211] One of the premises of my proposal is that women who might ordinarily choose bottles will initiate breastfeeding in order to participate in the market. As such, a greater number of poor children will receive breastmilk instead of formula. Furthermore, once a mother begins breastfeeding, she is likely to continue for at least as long as she wishes to have milk available for sale. This is because she would have difficulty maintaining an adequate milk supply without regular and vigorous sucking by a baby.[212]

This is another way in which transactions in breastmilk stand apart from exchanges in other bodily materials. No other market in human materials has the potential to provide health benefits to third parties who are not involved in the market themselves. That these third parties are the sellers' children, many of whom will be economically disadvantaged, should help quell fears that allowing the sale of human milk will exploit the poor. As Mahoney has argued, individuals "may experience their market participation not as degrading or an act of desperation, but as a means of recognizing their own interest while engaging in behavior that will yield substantial benefit to others."[213] In most transactions in human materials, we would perceive the interest of the seller as financial, and the purchaser as the one receiving a substantial benefit. With breastmilk, the seller's own interest is medical as well as financial, and both the recipient infant and the seller's baby receive substantial benefit.

To the extent that poverty often coincides with race, a proposal for a market in human milk also raises issues of racial subordination. For some, my proposal may provoke images of the unfortunate history of wet-

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[210] Alan S. Ryan et al., Recent Declines in Breast-Feeding in the United States, 88 J. Pediatrics 4, 719-723 (1991).

[211] Poorer families also benefit from not spending money on formula. Even the most inexpensive brands cost almost $1100 during an infant's first year. *See* Dep't of Agric., Fiscal Year 1999 WIC Food Package Cost Analysis, *available at* http://fns1.usda.gov/wic/CONTENT/BF/brpromo.htm (last modified July 10, 2000).

[212] Comm. on Nutrition, *supra* note 11, at 855. In addition, milk banks require a donor to submit a form on which her baby's pediatrician indicates that donating will not harm the child. HMBANA Guidelines, *supra* note 5, app. B. Currently donors submit the form only before the first donation, but banks could expand the requirement. Babies have regular visits during the first year (the time during which the American Academy of Pediatrics recommends infants receive breastmilk), and thus pediatricians could repeatedly attest that the sale of milk is not compromising the nutrition received by the infant.

[213] Mahoney, *supra* note 127, at 205-06. Furthermore, as Mahoney argues, market participation need not indicate low social status. For instance, individuals who sold blood to the Mayo Clinic in the 1960s and 1970s were perceived as members of a carefully chosen and socially respectable population. *Id.* at 206 (citing Douglas Starr, Blood: An Epic History of Medicine and Commerce 257 (1998)).

nursing in this country. In eighteenth-century America, the work of some slaves included wet nursing the infants of their owners. Some women were also required to feed the babies of their fellow slaves, so that lactational amenorrhea would not interfere with the mother's ability to produce more children.[214] But even in the context of surrogate motherhood, some scholars have rejected comparisons with slavery, on the ground that the analogy disregards the total control that the slave owner had over the slave.[215]

In more contemporary times, white women have used their privileged position to free themselves from many aspects of domesticity. A well-developed line of scholarship documents how economically-advantaged and college-educated white women have successfully delegated child care and other domestic responsibilities to minority women.[216] African-American women, for instance, "are still more likely to work in domestic service than women of any other group. Latinas are also heavily represented in household work."[217] Typically these women work long hours for notoriously low wages. In the New York City area, for instance, advertisements for the better-paying nanny positions often offer only $400 for a fifty-hour week.[218] Moreover, many domestic workers find themselves having to leave their own children in the sort of undesirable childcare arrangements that their employers avoided by hiring them.[219]

This is a delicate issue, and some would argue that I am (as a white woman) not justified in commenting on it.[220] There is, however, some reason to think that minority women and their children will benefit from the sale of banked milk. The primary point is similar to one raised earlier. In 1998, forty-five percent of black mothers initiated breastfeeding, nineteen

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[214] Baumslag & Michels, *supra* note 2, at 51.

[215] *See, e.g.*, Anita L. Allen, Surrogacy, Slavery, and Ownership of Life, 13 Harv. J.L. & Pub. Pol'y 139 (1990).

[216] Williams, *supra* note 184, at 162 (citing Paula Giddings, When and Where I Enter: The Impact of Black Women on Race and Sex in America (1984)).

[217] Williams, *supra* note 184, at 163, (citing Teresa Amott & Julie Matthaei, Race, Gender, and Work: A Multi-Cultural Economic History of Women in the United States 324 tbl. 10-3 (1996).

[218] *See* classified advertisements from New York metropolitan area (collection on file with author). Moreover, if we are concerned about the amount of compensation offered to the sellers, proposals to permit the sale of human materials often incorporate a centralized authority that regulates the amount paid to the seller. The existence of such an authority may help alleviate the possibility of exploitation. *See* Crespi, *supra* note 147, at 29 (suggesting that the price paid to organ bearers for entering into futures contracts could be set by regulators); Hansmann, *supra* note 137, at 16 (suggesting regulations that would protect against "improvident transactions").

[219] Symposium, Who's Minding the Baby, 49 Am. U. L. Rev. 902, 905 (2000).

[220] Williams, *supra* note 186, at 162 (citing bell hooks, Talking Back 42 (1989) (quoting one of her students)).

percent breastfed for six months, and nine percent continued for a year. For Hispanics, the statistics were sixty-six percent at one month, twenty-eight percent at six months, and seventeen percent at one year. The statistics for white mothers were sixty-eight percent, thirty-one percent, and nineteen percent, respectively.[221] Thus, while breastfeeding rates are similar among white and Hispanic women, they are significantly less encouraging for black mothers. Indeed, researchers have recently suggested that closing the gap between the breastfeeding rates of white and black mothers may go a long way towards curbing the infant mortality rate among black infants, who are 1.5 times more likely to die before the age of one than white infants.[222] That milk banking would involve some African-American mothers, who would in turn breastfeed their own children, is reason to offer payment.

Furthermore, depending on the price offered for raw milk, participation in the market may enable mothers to take the twelve unpaid weeks permitted under the Family Medical Leave Act.[223] Only California, Hawaii, New Jersey, New York, and Rhode Island require temporary disability insurance to cover maternity leave. Whether women in other states have access to paid maternity leave depends solely on their employer, with practices varying widely. A 1998 study shows that only fifty-three percent of women who work for companies of at least a hundred employees receive some pay during maternity leave, and that even fewer women who work for smaller companies receive paid leave.[224] And it is well-documented that many mothers do not take what is available to them under the Family and Medical Leave Act because they simply cannot afford the lost income.[225] To the extent that participation in milk banking makes

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[221] HSS Blueprint, *supra* note 14, at 9.

[222] Renata Forste, Jessica Weiss, et al., The Decision to Breastfeed in the United States: Does Race Matter?, 108 Pediatrics 291, 294-296 (2001).

[223] Vicki Schultz has argued that "feminists should be wary of paths to 'valuing housework' that encourage women to concentrate on housework and child care at the expense of a deep commitment to paid work." Schultz, *supra* note 156, at 1911. As Schultz sees it, women are better off if they have an "independent means of economic wherewithal" that provides a credible opportunity for exit. *Id.* And it is true that an unpaid leave can have lasting effects on a woman's compensation and career trajectory. *See supra* notes 186-91 and accompanying text. However, as suggested in response to the objections that my proposal reaffirms traditional gender roles or that it may exploit the poor, women rarely benefit when policies restrict the options available to them. It is more constructive to attack the dynamics that make leaves problematic for employers than to eschew policies that would permit parents to spend time with their newborns.

[224] Families and Work Inst., 1998 Business Work-Life Study: A Source Book, *available at* http://www.familiesandwork.org/announce/workforce.html (last visited Apr. 15, 2002).

[225] *See* Sandra L. Hoffeth, The Silent Crisis in U.S. Childcare: Child Care, Maternal Employment, and Public Policy, 563 Am. Acad. of Pol. & Soc. Sci. 20, 28 (1999). Arielle Horman Grill, The Myth of Unpaid Family Leave: Can the United States Implement

maternity leave more economically feasible, women of all races will have incentive to participate.

There is one population, however, that does not benefit under my proposal, at least not so far. These are the infants of parents who cannot afford banked milk and who cannot breastfeed during the first twelve months, either because the child is adopted[226] or because the mother is HIV-positive or has another contraindication for breastfeeding. The solution to this is simple (albeit expensive) and provides another opportunity to challenge the cultural norm which accepts formula as a natural component of parenting: WIC and private insurance carriers could be required to reimburse the cost of banked milk for the small percentage of infants whose mothers are medically unable to breastfeed. While WIC and major third party insurers have traditionally covered the cost of banked milk for babies with acute medical need, this approach does not adequately convey the point that all babies should receive breastmilk as a matter of course. This approach also fails to assist healthy children whose mothers cannot breastfeed or afford to purchase banked milk. In ensuring that all children have access to human milk, we prevent discrimination against poor children and help send the message that children who are not breastfed are disadvantaged from the start.

Although we do not know how much banked milk would cost in a market that allowed lactating women to sell, an expanded reimbursement policy would be expensive.[227] However, the inability to breastfeed is also expensive, both in terms of an infant's development and his short-term and

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a Paid Leave Policy Based on the Swedish Model?, 17 Comp. Lab. L.J. 373, 383 (1996) ("A study by 9 to 5, a national association of women office workers, found that nineteen percent of new mothers returned to work within six weeks of giving birth because they could not afford to take time off."). Other studies have found that at least one in seven women poor enough to qualify for public assistance uses welfare as a substitute for paid maternity leave. Mike Meyers, Taking Pregnancy Leaves: Only 5 States Require Pay During Time Off Work, Star Tribune (Minneapolis, Minn.), Feb. 6, 1995, at 1D.

[226] As noted earlier, some adoptive mothers are able to induce lactation. *See supra* note 63. As such, not all adoptive mothers would qualify as "unable to breastfeed." The longer the infant has been fed with a bottle prior to being adopted, the less likely it is that the infant will successfully breastfeed. This is because breastfeeding requires a sucking action that is more complicated than what bottlefeeding requires. *See* Guide for the Profession, *supra* note 20, at 119-20. Third-party payers could conduct a factual inquiry into whether a woman is "unable" to breastfeed, but it would be administratively easier to simply make banked milk available to all adopted children.

[227] For example, each year an estimated 6,000 to 7,000 infants are born to HIV-infected women, all of whom are advised not to breastfeed. Michael A. Stoto et al., Reducing the Odds: Preventing Perinatal Transmission of HIV in the United States, *available at* http://www.hivdent.org/pediatrics/reduce/adp.html (last visited Mar. 15, 2001). Presumably tens of thousands of infants are adopted each year by women who are not lactating, but accurate statistics on adoptions are notoriously difficult to obtain. Lori Carangelo, *Preface to* Statistics of Adoption (2000), *available at* http://www.abolishadoption.com/statistics.html (last visited Mar. 15, 2001).

long-term health. Thus the question is who should bear these costs. While we can expect formula-fed infants to be a larger drain on insurance pools than their breastfed counterparts, under current reimbursement policy the costs of a mother's inability to breastfeed fall primarily on her family and especially her defenseless infant. To the extent that an expanded reimbursement policy would result in higher insurance premiums, the costs of the inability to breastfeed are borne not by the helpless child but by all of us.

Moreover, to the extent that third-party coverage and an extensive milk banking program promote the message that mothers should breastfeed, and mothers heed that message, we will recognize substantial savings. For instance, a study of just three common childhood illnesses "conservatively" estimates that in the first twelve months, formula-fed infants incur between $331 and $475 more in direct medical costs than infants who are exclusively breastfed for at least three months.[228] Another study estimates that total medical care expenditures of a breastfed baby are twenty percent lower than a formula-fed baby.[229] Of course, the cost of a sick baby is not limited to medical expenditures. If a parent misses two hours of work for each excess illness attributable to formula feeding, more than two thousand hours (about a year's worth of billable hours) are lost for each one thousand infants who are never breastfed.[230] Indeed, another study demonstrated that women who breastfed their babies were less likely to be absent from work because of a sick infant than women who used formula, and had shorter absences when they did miss work.[231] In addition, WIC annually spends more than $6.9 million on infant formula.[232] If these babies were breastfed, this expenditure for infant nutrition would drop by seventy-five percent.[233]

The failure to breastfeed has less quantifiable economic costs as well. For example, widespread use of formula occurs at substantial cost to the environment. Breastmilk is one of the only foods that can be delivered

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[228] Thomas M. Ball & Anne L. Wright, Health Care Costs of Formula Feeding in the First Year of Life, 103 Pediatrics 870, 870, 874 (1999).

[229] C. Hoey & J. L. Ware, Economic Advantages of Breast-feeding in an HMO Setting: A Pilot Study, 3 Am. J. Managed Care 861, 865 (1997).

[230] Ball & Wright, *supra* note 228, at 875.

[231] Rona Cohen et al., Comparison of Maternal Absenteeism and Infant Illness Rates Among Breast-feeding and Formula-feeding Women in Two Corporations, Am. J. Health Promotion, Nov.-Dec. 1995, at 153.

[232] Dep't of Agric., *supra* note 211.

[233] *See id.* In 1999, during the first six months postpartum, the average monthly food cost for a breastfeeding woman was $37.60, compared to $30.60 for a postpartum woman who was not breastfeeding. The average post-rebate monthly formula cost for infants was $26.96. Thus, the additional monthly food cost for a breastfeeding woman was about one quarter of the average food cost for a formula-fed infant. Expressed another way, the breastfeeding woman created $1.00 worth of formula for every $.25 she spent on food.

to its consumer without creating pollution, packaging or waste. In contrast, it has been estimated that if every child born in the United States were formula-fed, almost eighty-six thousand tons of tin would be needed to produce enough containers for just one year's worth of formula.[234] Finally, and most importantly, the failure to breastfeed risks the loss of precious human capital. Healthcare experts agree that the increasing breastfeeding rates would be an effective means of lowering the infant morality rate, although they offer different accounts of the number of infants who could be saved. One study estimated that in 1992, slightly more than eight thousand infant deaths were attributable to a lack of breastfeeding.[235] A 1990 study sponsored by the United States Institute of Environmental Health Sciences estimated that approximately three out of every thousand infants born in this country die because they are not breastfed.[236]

IV. CONCLUSION

This article has argued that when we lump human milk with other bodily materials and allow it to be gifted but not sold, we miss opportunities to increase breastfeeding rates and positively influence infant and maternal health. Neither concern about the quality of the milk supply nor normative judgments about which bodily materials are appropriately sold should prevent us from paying women for milk.

Those who are skeptical of a broader market in breastmilk may ask why one has not emerged already, particularly since the existing laws in most jurisdictions do not make such a market illegal. One obvious explanation is that the current price difference between formula and banked milk may seem like an insurmountable obstacle to expanding the market.[237] However, even given the present high cost, some parents have already expressed an interest in purchasing the milk out-of-pocket. And this is unsurprising, as parents have long demonstrated that they will go to great financial lengths to give their young children what may be perceived as advantages. Think, for example, of the thousands of dollars of extra costs

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[234] Baumslag & Michels, *supra* note 2, at xxix.

[235] *Id.* at xxv.

[236] Walter Rogan et al., Should the Presence of Carcinogens in Breast Milk Discourage Breast Feeding?, 13 Regulatory Toxicology & Pharmacology, 228, 235 (1990). The authors arrive at this figure partly by assuming that breastfeeding reduces the risk of SIDS, a causality that some dispute. However, if the study is accurate in its estimates, an increase in breastfeeding should markedly reduce the infant mortality rate. In 1998, the Centers for Disease Control and Prevention reported 3,941,553 births. *See* CDC, Births: Final Data for 1998 (2000) (reporting 3,941,553 births in 1998). Moreover, the national infant mortality rate is 7.3 deaths per one thousand infants. Thus this study suggests that encouraging breastfeeding would reduce the infant mortality rate by about twelve thousand deaths.

[237] *See supra* note 115 and accompanying text.

incurred by parents who send their child to the "best" preschool or kindergarten, or by parents who opt for nannies instead of group day care. Moreover, if the government helps subsidize the market, prices may fall enough so that banked milk can be purchased by parents who are economically similar to those parents who currently rely on informal arrangements.[238]

Even given the complex issues surrounding cost, the erroneous belief that formula is an appropriate feeding option for most babies is probably the primary reason why a broad market has failed to emerge. Indeed, any decision not to expand the milk banking system is likely rooted in the conviction that formula is an acceptable substitute for breastmilk. This, however, is the cultural norm that health officials have been urging us to reject for more than twenty years. And even a small expansion in the market might do much to help correct misinformed judgments about the relative merits of formula.

Imagine the way infant feeding choices might change if banked milk were available to all parents. Parents would learn they have three options: breastmilk, banked milk, or formula. Breastmilk is best. If the mother is unwilling or unable to breastfeed, parents can purchase human milk and provide their infant with roughly half the benefits of breastmilk. They could also use formula, which is cheaper than banked milk and rightly so, since it has none of the advantages of human milk. To the extent that price influences perceptions of quality, parents should readily perceive the merits of human milk. Moreover, the mother would know that other parents are willing to purchase a substance that she will have in abundance after her baby is born. To the extent that money talks, perhaps parents will listen.

[238] *See supra* notes 3-4, 180 and accompanying text.