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In Search of Human Placentophagy: A Cross-Cultural Survey of Human Placenta Consumption, Disposal Practices, and Cultural Beliefs

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Maternal placentophagy, the consumption of the placenta or "afterbirth" by the mother following parturition, is an ubiquitous behavior among eutherian mammals, including non-human primates. Here we report on a cross-cultural survey of 179 human societies regarding the consumption, treatment, and disposal of human placenta, in addition to accompanying cultural beliefs and perceptions about the organ. The conspicuous absence of cultural traditions associated with maternal placentophagy in the cross-cultural ethnographic record raises interesting questions relative to its ubiquitous presence among nearly all other mammals, and the reasons for its absence (or extreme rarity) among prehistoric/historic and contemporary human cultures.

KEYWORDS placentophagia, afterbirth, ritual, treatment

MATERNAL PLACENTOPHAGY: A COMMON MAMMALIAN BEHAVIOR

Maternal consumption of the placenta postpartum, or placentophagy, is a remarkably common behavior among placental mammals, including non-human primates (Soyková-Pachnerová et al. 1954; Stewart 1977; Kristal 1980). Of more than 4,000 terrestrial mammal species in the subclass Eutheria (Wilson and Reeder 2005), only a handful of these, including camelids (camels, llamas, alpacas, vicunas and guanacos) and humans, have been

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identified as species that do not regularly engage in this behavior (Hrdy 2009; Kristal 1980; Vaughan and Tibary 2006). Various hypotheses have been offered to explain the adaptive value of placentophagy, including (1) cleaning the nest site and predator avoidance, (2) a shift toward carnivorousness at parturition, (3) general hunger, and (4) specific hunger (see Kristal 1980; Menges 2007). Kristal (1980) has offered counterevidence that challenges each of these claims and identifies their inconsistencies, calling into question the adequacy of any or all of these hypotheses as an explanation of the behavior across all mammalian species. In addition, beyond these critical assessments, these hypotheses have rarely been empirically tested, leaving the evolutionary underpinnings of the maternal behavior largely a mystery.

While maternal placentophagy is widespread among mammals, its occurrence among humans cross-culturally has not been systematically investigated in depth. Although a few accounts of culturally sanctioned consumption of the placenta have been recorded, these do not follow the pattern of other mammals in which the mother consumes the placenta postpartum. Instead, these cases involve the consumption of another woman's placenta (or that of an animal) under special circumstances. For example, Ober (1979) discusses the account of a medical officer who explained the practice of male and female Vietnamese nurses and midwives of Chinese and Thai background consuming the placentas of their young, healthy patients. The reason for this practice was not specified in his account, and it was unclear whether the mothers participated. In Africa, Onuaguluchi and Ghasi (1996) discuss the use of dried sheep placenta by a Nigerian traditional medicine practitioner to induce labor. In China the use of placenta in Traditional Chinese Medicine remedies has also been noted in the literature, but again, the mother is not identified as the recipient of these medical treatments (Yanchi 1988; Furth 1999). One source that may indicate the occurrence of maternal placentophagy is in the *Compendium of Materia Medica*, a sixteenth century Chinese record of substances with medicinal properties. This text devotes a section to the medical use of human placenta and includes the statement that "[w]hen a woman in Liuqiu has a baby, the placenta is eaten" (Shizhen and Xiwen 2003). This implies that the mother in this locale may be eating the placenta, but again, no additional details are provided. The *Compendium of Materia Medica* also mentions that in another area, Bagui, the placenta of a boy is specially prepared and eaten by the mother's family and relatives. Again, it is unclear whether the mother is participating in its consumption.

Verified consumption of the placenta by the mother, however, has been sporadically reported from the 1970s to the present among a small number of clients of midwives and alternative health advocates in the U.S. and Mexico who promote the practice and claim therapeutic benefits (Selander 2009; Janszen 1980; Field 1984; Bastien 2004). Because the placenta is responsible for the production and regulation of a number of hormones

and opioids, and for the transport of nutrients to the fetus during gestation (Apari and Rózsa 2006), and because some research has suggested that the placenta may retain some of these substances after it is delivered (Soyková-Pachnerová et al. 1954; Grota and Eik-Nes 1967; Blank and Friesen 1980; Kristal 1991; Onuaguluchi and Ghasi 1996; DiPirro and Kristal 2004), proponents of the contemporary human practice argue that placentophagy thus provides a means for the mother to replenish nutrients and hormones lost during parturition, and that these ingested substances are responsible for postpartum improvements in mood, lactation, and accelerated physical recovery for women who engage in the practice (Janzsen 1980; Bastien 2004; Apari and Rózsa 2006; Selander 2009; Stein 2009). Recent examples of placentophagy that have been noted in the popular media occur in industrialized countries, and often involve cooking the placenta or dehydrating and encapsulating the organ to be taken as a supplement (Friess 2007; Stein 2009). Although experimental studies have been conducted examining the physiological and behavioral effects of placentophagy, they have been largely limited to experimental animals, and virtually no research has been done in this area with respect to primate species, including humans (Soyková-Pachnerová et al. 1954; Grota and Eik-Nes 1967; Blank and Friesen 1980; Kristal 1991; Onuaguluchi and Ghasi 1996; DiPirro and Kristal 2004; Menges 2007). Surveys of the consumption of human placenta have been published (Ober 1979), including cursory searches of the Human Relations Area Files (Kristal 1980). The present study, however, combines a systematic review of the cross-cultural ethnographic literature for reports of maternal placentophagy, along with a detailed description of *any* cultural beliefs and practices associated with the placenta and its prescribed treatment/disposal.

RESEARCH QUESTIONS

The ubiquity of maternal placentophagy among eutherian mammal species, including non-human primates, and its exceedingly rare occurrence in industrialized societies, provided the impetus for the current study's research questions:

1. Are there any firsthand ethnographic accounts of human societies that are/were known to regularly practice maternal placentophagy?
2. Are there any ethnographic accounts of human societies that are/were known to regularly practice placentophagy by someone other than the mother?
3. Are there ethnographic accounts of human societies that specify the special handling/treatment/disposition of the placenta after parturition other than placentophagy, and if so, what are they?

4. Are there ethnographic accounts of human societies that specify particular cultural beliefs regarding the placenta, and if so, what are they?

DATA AND METHODS

Ethnographic Data Set

To address these questions we conducted an ethnographic cross-cultural search of 179 societies in the electronic Human Relations Area Files (eHRAF) regarding the consumption, special handling/treatment/disposition, and cultural beliefs surrounding the placenta. The eHRAF ethnographic database is the gold standard for cross-cultural comparative research, and the largest, most comprehensive electronic ethnographic database of its kind. While the eHRAF does include a subset of 60 cultures that represent a stratified random sample, known as the "Probability Sample Files" (PSF), in an effort to search the largest possible cross-cultural sample of ethnographic material, the entire eHRAF database of 179 societies was utilized in the present study. The eHRAF includes societies from Africa, Asia, Europe, Middle America and the Caribbean, the Middle East, North America, Oceania, and South America. Both the terms "placenta" and "afterbirth" were included in the search which reviewed all topics for the 179 cultures available in the electronic database. All references to the search terms, in all topics for the 179 cultures investigated, were recorded and analyzed for the present study. References to treatment and ideas about the umbilicus were not included since it is not normally consumed by mammals engaging in maternal placentophagy, or by recent proponents of the contemporary practice.

Data Descriptions, Definitions, and Categorization

Each culture that returned a reference to the placenta or afterbirth was identified for both the disposal practice and cultural beliefs regarding the organ, and any names or descriptions of the organ were also recorded. Some cultures identified more than one disposal practice, belief or name/description for the placenta and were therefore assigned to multiple categories.

Placenta consumption was defined as the ingestion of a human placenta postpartum, at any time, by any person, either in unaltered, or altered (e.g., cooked, dried, steeped in liquid) form. *Maternal consumption of the placenta* was defined as a mother's ingestion of her own placenta postpartum, in any form, at any time. *Non-maternal consumption of the placenta* was defined as the ingestion of placenta by any person other than the mother, at any time.

Based on all available ethnographic descriptions for the 179 culture eHRAF data set, placenta disposal practices were classified into the following six categories. *Burial* of the placenta referred to any practice in which

the organ was interred in any location or manner (e.g., buried after being placed inside a vessel, wrapped in something, or on its own). *Incineration* of the organ was used for any practice in which the placenta is incinerated in any location or manner. *Intentional placement or disposal in a specific location* includes any practice in which the organ is left in a specific location but is not buried (e.g., throwing it over a mesa edge or placing it on the opposite side of a river). *Hanging or placing in a tree or structure* includes any practice in which the placenta is put into a tree or a specially erected pole or structure. *Discarding* the placenta includes any practice in which the placenta is disposed of in the fashion of refuse or thrown to the animals to consume, and also where it was stated that the placenta was discarded. Any practices that were unique to a single society and were incompatible with another category were coded as *other*.

Once disposal practices had been recorded and categorized, we reviewed the corresponding ethnographic descriptions regarding specific cultural beliefs about the placenta. Five general belief categories were identified as a result of the review of these ethnographic accounts: *Alter or predict the future* was used for any belief that the treatment of the placenta could influence the future of an individual (e.g., the health or future occupational skills of the child) or where the state or condition of the organ was seen as an omen (e.g., an abnormal placenta indicates that the child will be a diviner). *Harm caused by animal consumption or contact* includes any belief that harm can come to a person (i.e., the mother or child) if the placenta is consumed or touched by an animal. *Witchcraft/malevolent use* includes a belief that the placenta can be used by another person to control or harm either the mother or the child. The category *polluting/contagion* was used for beliefs in which the organ can contaminate or make ill either a person (e.g., a male) or a thing (e.g., the ground, if it is buried). The belief that the placenta could *treat a medical/physical condition* includes any belief that the organ, or a remedy made with it, can cure, prevent, or provide relief from an ailment or undesirable physical condition (e.g., tuberculosis or frontal baldness).

We also recorded any names or descriptions given to the placenta in the ethnographic accounts. Several general categories were also identified for the names/descriptions used for the placenta: *sibling or child term* for any culture that referred to the placenta as the sibling of the child or another child to the mother; *mother* for any description of the placenta as a mother (of either the child or a generalized mother term); *grandmother* for any description of the placenta as a grandmother (of either the child or as a generalized term); *parent* for a culture that described the placenta as a parent to the child; *friend* of the baby; *covering/wrap* for any term or description of the placenta as something that surrounds the baby (e.g., clothing, a sling, a wrapper or shell); *blanket*; *house*; *nest*; *skin*; *part of the baby* (description specific to one culture); *seat of the child*

(description specific to one culture); *land, people and grave* (description specific to one culture); *generalized/unspecified connection to the child* includes any description of a special association between the child and the placenta.

RESULTS

Maternal Consumption of the Placenta: Research Question 1

Our cross-cultural search of 179 societies identified only a single culture (Chicano, or Mexican-American) that mentioned the practice of maternal placentophagy. Based on the context and content of the brief ethnographic description of the single instance of maternal placentophagy, however, its time depth and relative frequency in Chicano culture remains obscure. In the Chicano ethnographic account, which focused on Chicano and Anglo midwifery in San Antonio, Texas, Keyes stated that "[c]ooking and eating part of the placenta has also been reported by a couple of midwives. One Anglo mother, known by two midwives, was reported to have roasted the placenta and supposedly received a surge of energy after its consumption" (1986, 157). Given that the description of maternal placentophagy refers to an "Anglo" mother in the U.S.-Mexico borderland, and, due to the lack of additional corroborating accounts regarding the practice in the larger Chicano literature (Malvin Miranda 2009, personal communication), the description may be a reference to the recent practice of placentophagy as advocated by some midwives in Mexico and the U.S. first noted in the 1970s (Janszen 1980; Field 1984; Bastien 2004), rather than a longstanding Chicano tradition.

Non-maternal Consumption of the Placenta: Research Question 2

Beyond the single reference to maternal placentophagy in our cross-cultural search, three references to non-maternal placental consumption were also recorded. A reference to *paternal* placentophagy was identified in the field notes of Deacon, who worked with the Malekula of Melanesia. In this account, a brief footnote mentions that in Espiritu Santo, the new father will eat a pudding made from the cooked placenta and blood (Deacon and Wedgwood 1934). A second mention of non-maternal placentophagy refers to a "child's" consumption of a tea made from its own placenta. Trott (2003) described an interview with a traditional Gullah medical practitioner ("Sea Islander"—South Carolina in eHRAF) in which she was told that in the event that a baby is born with a *caul* (described as a placenta positioned over the face at birth), a tea would be made from the placenta and given to the child in order to prevent them [*sic*] from seeing spirits that would otherwise haunt the child. The third and final reference to non-maternal placentophagy was associated with Sino-Vietnamese medicine, in which it

was reported that tuberculosis patients take placenta orally in an unspecified form to aid their recovery (De and Coughlin 1951). Although these accounts indicate that placenta may have been consumed in some areas, they do not describe a pattern of maternal placentophagy immediately postpartum that is characteristic of other eutherian mammals.

Special Treatment/Disposal of the Placenta: Research Question 3

Despite the limited number of accounts of placentophagy of any kind in the ethnographic record, and only one qualified account of maternal placentophagy in our cross-cultural sample, the search did reveal that many cultures identified appropriate methods of disposal for the organ, which often included specific beliefs about its proper handling.

Of the 179 cultures searched in the database, 109 identified one or more specific means in which the placenta is properly treated or discarded after delivery. Some cultures accepted multiple means of disposal, sometimes due to regional variation or depending on the circumstances surrounding the birth, leading to a total of 169 acceptable practices in the 109 cultures (see table 1). Burial is by far the most common disposal method, with 93 (55.0%) of the reported practices identified as burial of the organ. Many cultures identified a specific location for burial such as behind the house, or at the place of birth, while others were more vague, identifying the location only as a "special place". Still others did not specify any location.

Other practices were far less common. One of these culturally prescribed treatments was to intentionally place or dispose of the placenta in a specific location without burying it, which was identified in 25 (14.8%) of the accounts. An example of this behavior is seen in the Nordic Saami who will throw it into a lake or onto the lake's shore (Itkonen 1984). In 16 (9.4%) of the reports, incinerating the organ is reported. Hanging or placing the placenta in a tree was noted in 14 (8.3%) of the accounts. The Ojibwa of North America historically disposed of the organ in this manner by hanging the placenta in the fork of a tree out of the reach of animals (Hilger 1951). Simply discarding the placenta was acceptable in 13 (7.7%) of the cases, although this apparently does not necessarily mean it was viewed in these societies as waste. In some areas, discarding the placenta to be eaten by animals was identified as a means to prevent future pregnancies; therefore, under circumstances in which limited offspring were desired, this was the preferred method of disposal. As discussed above, 3 (1.8%) cases involved a form of consumption—not including the one reported case of consumption by the mother. The remaining 5 (3.0%) instances described a practice that was unique to that culture, but was often an option accompanied by another more common practice. For example, Palestinians of the Middle East will/would salt and hang a son's placenta inside the doorpost to ward off

TABLE 1 Placenta Disposal Practices by Geographical Region for 109 Cultures Found in eHRAF

Disposal practice	*Location*/cultural group/(OWC code)			
Burial	*Africa*	*Asia (continued)*	*Middle East*	*Oceania*
	Akan (FE12)	Iban (OC06)	Iran (MA01)	Aranda (OI08)
	Amhara (MP05)	Ifugao (OA19)	Kurds (MA11)	Chuuk (OR19)
	Azande (FO07)	Khasi (AR07)	Lur (MA12)	Hawaiians (OV05)
	Bagisu (FK13)	Korea (AA01)	Palestinians (M013)	Lau Fijians (OQ06)
	Bambara (FA08)	Lepcha (AK05)	*North America*	Malekula (OO12)
	Banyoro (FO07)	Mongolia (AH01)	Aleut (NA06)	Orokaiva (OJ23)
	Dogon (FA16)	Okinawa (AC07)	Alutiiq (NA10)	Tikopia (OT11)
	Ganda (FK07)	Pashtun (AU04)	Cherokee (NN08)	Tongans (OU09)
	Gusii (FL08)	Santal (AW42)	Chicano (N007)	Trobriand (OL06)
	Hausa (MS12)	Semang (AN07)	Delaware (NM07)	Ulithi (OR20)
	Igbo (FF26)	Southern Toraja (OG13)	Klamath (NR10)	Woleai Region (OR21)
	Kanuri (MS14)	Taiwan Hokkein (AD05)	Navajo (NT13)	Yapese (OR22)
	Maasai (FL12)	Vietnamese (AM11)	North American Hmong (N009)	*South America*
	Ovimbundu (FP13)	*Europe*	Ojibwa (NG06)	Aymara (SF05)
	San (FX10)	Basques (EX08)	Pawnee (NQ18)	Bacairi (SP07)
	Somali (MO04)	Greeks (EH01)	Pomo (NS18)	Guarani (SM04)
	Tiv (FF57)	Saami (EP04)	Sea Islanders (NN23)	Jivaro (SD09)
	Wolof (MS30)	Serbs (EF06)	Seminole (NN16)	Kogi (SC07)
	Zulu (FX20)	*Middle America /Caribbean*	South Alaska Eskimo (NA10)	Mataco (SI07)
	Asia	Kuna (SB05)	Ute (NT19)	Mundurucu (SQ13)
	Andamans (AZ02)	Garifuna (SA12)	Yokuts (NS29)	Ona (SH04)
	Badaga (AW50)	Tarahumara (NU33)	Yuki (NS30)	Saramaka (SR15)
	Bengali (AW69)	Tzeltal (NV09)	Zia Pueblo (NT38)	Shipibo (SE26)
	Central Thai (AO07)	Yucatec Maya (NV10)		Tukano (SQ19)
	Eastern Toraja (OG11)			Warao (SS18)
				Yanoama (SQ18)

Intentional placement or disposal in a specific location	*Africa* Banyoro (FO07) Dogon (FA16) Gusii (FL08) Maasai (FL12) *Asia* Alorese (OF05) Central Thai (AO07) Eastern Toraja (OG11)	*Asia (continued)* Khasi (AR07) Korea (AA01) Lepcha (AK05) Metawaians (OD09) Okinawans (AC07) Semang (AN07) *Europe* Saamai (EP04)	*North America* Chinese Americans (NK06) Comanche (NO06) Copper Inuit (ND08) Delaware (NM07) Hopi (NT09) Navajo (NT13) Ute (NT19)	*North America (continued)* Yokuts (NS29) Zia Pueblo (NT38) *Oceania* Orokaiva (OJ23) *South America* Siriono (SF21)
Incineration	*Asia* Korea (AA01) *Middle America/ Caribbean* Tzeltal (NV09) Yucatec Maya (NV10) *Middle East* Iran (MA01) Palestinians (M013)	*North America* Chicano (N007) Navajo (NT13) Quinault (NR17) Sea Islanders (NN23) Tlingit (NA12) Ute (NT19)	*Oceania* Aranda (OI08) *South America* Aymara (SF05) Ona (SH04) Shipibo (SE26) Yahgan (SH06)	
Hanging or placing in a tree or structure	*Asia* Eastern Toraja (OG11) Garo (AR05) Iban (OC06) Khasi (AR07) Lepcha (AK05) Yakut (RV02)	*North America* Assiniboine (NF04) Navajo (NT13) Ojibwa (NG06) Pawnee (NQ18) Pomo (NS18) Western Woods Cree (NG08)	*Oceania* Hawaiians (OV05) Orokaiva (OJ23)	
Discarding	*Africa* Akan (FE12) Bagisu (FK13) Dogon (FA16) Gusii (FL08)	*Middle America /Caribbean* Tzeltal (NV09) *North America* Aleut (NA06) Klamath (NR10) Ute (NT19)	*Oceania* Manus (OM06) Orokaiva (OJ23	*South America* Shipibo (SE26) Siriono (SF21) Yahgan (SH06)

(*Continued*)

TABLE 1 (Continued)

Disposal practice	*Location*/cultural group/(OWC code)
Consumption (non-maternal)	*Asia* Vietnamese (AM11) *North America* Sea Islanders (NN23) *Oceania* Malekula (OO12)
Other	*Asia* Yakut (RV02): Pressed under a stone to prevent future pregnancies *Europe* Serbs (EF06): Secretly disposed of or concealed; occasionally dried and kept by peasant women for good luck *Middle East* Palestinians (M013): Hung in a doorway to prevent harm from Karine, "a woman's special enemy" *North America* Chinookans of the Lower Columbia River (NR06): Discarded where it will not be found—method was not indicated *Oceania* Manus (OM06): Hung up on the wall behind the mother before being discarded

Source: Human Relations Area Files (eHRAF).

Karine (described as the woman's special enemy), but will otherwise bury the organ (Granqvist 1947). Before discarding the placenta, the Manus of Melanesia will wrap it in a mat with a piece of the umbilicus and hang it on the wall behind the mother (Mead 1930; see table 1).

Cultural Beliefs about the Placenta: Research Question 4

While some accounts did not offer any explanation as to why the placenta is handled a certain way, many gave a reason that identified a belief that the way the organ is handled can influence some aspect of a person's life, usually the mother or child. Sixty-seven (61.5%) of the 109 cultures with a specified placenta ritual identified at least one connection between the placenta and some form of magic or supernatural influence for a total of 101 reported beliefs (see table 2). The most frequently cited belief is that the way the placenta is treated can be used to either alter or predict the future (55 cultures, 54.4%). For example, traditional beliefs of the Seminole of North America hold that future pregnancies can be prevented if a heavy rock is placed over the hole in which the placenta is buried (Sturtevant, 1955). The Central Thai of Asia believe that the growth of the tree under which the placenta is buried will predict the child's health (Terwiel 1975). Eighteen (17.8%) of the accounts stated that harm can come to either the mother or child if an animal is allowed to consume or come into contact with the placenta. An example of this is the North American Yuki belief that the placenta must be buried deeply to prevent it from being unearthed by animals since this would cause the mother to become infertile (Foster 1944). The prevention of witchcraft was identified in 9 (8.9%) accounts as the reason for special treatment of the placenta. These cultures, such as the Gusii of Africa, fear that a malevolent person who obtains the placenta would be able to use it to cause harm to the mother or child (LeVine et al. 1994). Twelve (11.9%) cultures identified the placenta as being unclean or having a polluting or contagious effect. On the other hand, 5 (5.0%) cultures identified the placenta as having the power to treat a medical or physical condition. Two cultures (2.0%) identified a belief unique to that culture. For the Somali of Africa, burial of the placenta negates the child's matrilineal ties (Helander 1988), and the Igbo of Africa believe that burying the placenta connects the child to the welfare and fertility spirits of the ground (Ottenberg 1989).

In addition to beliefs that the treatment of the placenta can affect a person's life, we also found that 29 cultures identified a name or description of the placenta that implies human qualities or suggests a close connection to the child (see table 3). Of these 29 cultures, 12 used a kinship or friendship term for the placenta. The remaining 17 cultures use a term or description that demonstrates a different kind of relationship between the child and the placenta, such as the organ being a "blanket" or "house" for the child, or something that remains closely connected to him throughout life.

TABLE 2 Beliefs Regarding the Treatment/Disposal/Use of the Placenta by Geographical Region for 67 Cultures Found on eHRAF

Effect	*Location*/culture/(OWC code)		
Alter or predict the future	*Africa* Dogon (FA 16) Ganda (FK07) Libyan Beduoin (MT09) San (FX10) Tiv (FF57) Wolof (MS30) *Asia* Bengali (AW69) Central Thai (AO07) Eastern Toraja (OG11) Iban (OC06) Khasi (AR07) Lepcha (AK05) Okinawans (AC07) Santal (AW42) Semang (AN07) Southern Toraja (OG13) Taiwan Hokkein (AD05) Vietnamese (AM11) Yakut (RV02) *Europe* Greeks (AH01) Serbs (EF06)	*Middle America / Caribbean* Tzeltal (NV09) Yucatec Maya (NV10) *Middle East* Iran (MA01) Palestinians (M013) *North America* Aleut (NA06) Alutiiq (NA10) Cherokee (NN08) Copper Inuit (ND08) Delaware (NM07) Hopi (NT09) Klamath (NR10) Chinookans of the Lower Columbia River (NR06) Navajo (NT13) Ojibwa (NG06) Pawnee (NQ18) Pomo (NS18) Sea Islanders (NN23)	*North America (continued)* Seminole (NN16) Tlingit (NA12) Western Woods Cree (NG08) Yokuts (NS29) Yuki (NS30) *Oceania* Chuuk (OR19) Hawaiians (OV05) Lau Fijians (OQ06) Orokaiva (OJ23) Tongans (OU09) Trobriands (OL06) Woleai Region (OR21) *South America* Aymara (SF05) Kogi (SC07) Shipibo (SE26) Warao (SS18) Yahgan (SH06)
Harm caused by animal consumption or contact	*Africa* San (FX10) Tiv (FF57) *Asia* Korea (AA01) Lepcha (AK05) Mongolia (AH01) Yakut (RV02) *Middle East* Palestinians (M013)	*North America* Aleut (NA06) Assiniboine (NF04) Chicano (N007) Klamath (NR10) Navajo (NT13) Pawnee (NQ18) Yuki (NS30)	*Oceania* Orokaiva (OJ23) *South America* Aymara (SF05) Bacairi (SP07) Jivaro (SD09)
Witchcraft or malevolent use	*Africa* Dogon (FA16) Gusii (FL08) San (FX10) Tiv (FF57) Zulu (FX20)	*Middle America / Caribbean* Garifuna (SA12)	*North America* Navajo (NT13) Pomo (NS18) Yuki (NS30)

(*Continued*)

TABLE 2 (Continued)

Effect	*Location*/culture/(OWC code)		
Polluting/ Contagion	*Africa* San (FX10) Tiv (FF57) *Asia* Bedaga (AW50) Bengali (AW69) Lepcha (AK05)	*Asia (continued)* Taiwan Hokkein (AD05) Vietnamese (AM11) *North America* Hopi (NT09) Navajo (NT13)	*North America (continued)* Tlingit (NA12) *Oceania* Ulithi (OR20) *South America* Aymara (SF05)
Treat medical or physical condition	*Asia* Eastern Toraja (OG11): The placenta can be used to heal cracked feet Vietnamese (AM11): Sometimes given by mouth to tuberculosis patients *Middle America /Caribbean* Yucatec Maya (NV10): Women wash their hair in placenta ashes to prevent frontal baldness *Middle East* Palestinians (M013): Barren women can wash in water mixed with placenta ashes to become fertile *South America* Aymara (SF05): Peruvian Aymara sometimes burn it in a new vessel and keep the ashes as medicine		
Other	*Africa* Somali (MO04): Burial negates matrilineal ties of the child Igbo (FF26): Burial connects the child to the spirits in the ground		

Source: Human Relations Area Files (eHRAF).

TABLE 3 Names or Descriptions Given to the Placenta by Geographical Region in 67 Cultures Found on eHRAF

Name/description given to placenta	*Location*/culture/(OWC code)
Sibling or child term	*Africa* Amhara (MP05): Child of the host Dogon (FA16): Twin Ganda (FK07): Second child/twin *Asia* Eastern Toraja (OG11): Sibling Southern Toraja (OG13): Younger sibling, addressed as brother/sister *Middle East* Palestinians (M013): Sister
Mother	*Africa* Igbo (FF26): Our mother *Asia* Yakut (RV02): Mother of the child

(*Continued*)

TABLE 3 (Continued)

Name/description given to placenta	*Location*/culture/(OWC code)
Grandmother	*North America* Chinookans of the Lower Columbia River (NR06) Quinault 9NR17): Baby's grandmother
Parent	*Africa* Zulu (FX20): Little parent
Friend	*Middle America /Caribbean* Yucatec Maya (NV10): Pares or companero *Middle East* Palestinians (M013): Comrade *Oceania* Chuuk (OR19)
Covering/wrap	*Africa* Gusii (FL08): A binding *Asia* Ifugao (OA19): Baby sling Santal (AW42): Afterbirth is a figure used to describe clothes to be removed *North America* North American Hmong (N009): Birth clothing Pomo (NS18): Baby-wrap Tukano (SQ19): Cloth, wrapper, or shell *South America* Kogi (SC07): Cloth/clothing
Blanket	*Africa* San (FX10) *Asia* Ifugao (OA19) *Middle America /Caribbean* Kuna (SB05) Tarahumara (NU33)
House	*Asia* Ifugao (OA19)
Nest	*Asia* Alorese (OF05)
Skin	*Africa* Zulu (FX20): Must be shed like a snake skin
Part of the baby	*Oceania* Malekula (OO12)
Seat of the child	*Oceania* Lau Fijians(OQ06)
Land, people, and grave	*Oceania* Tongans (OU09): Link the child to his land by burying his placenta near the house
Generalized connection to the child	*Asia* Khasi (AR07): Lifetime connection Aranda (OI08): Associated with child's spirit double

Source: Human Relations Area Files (eHRAF).

DISCUSSION AND DIRECTIONS FOR FUTURE RESEARCH

Although the placenta is known to be readily and eagerly ingested by nearly all other mammalian mothers, including our closest primate relatives, few, if any known human cultures appear to promote or allow its consumption, even in a ritualized context. We suggest that, in the face of many detailed ethnographic descriptions of cultural beliefs and practices regarding the placenta, including its proper treatment/disposal, the lack of a single unambiguous account of a well documented cultural tradition of maternal placentophagy is good evidence that it is absent (or at most, extremely rare) as a customary or learned practice in human societies cross-culturally, and that its postpartum consumption by the mother may even constitute something akin to a universal cultural avoidance.

If maternal placentophagy is indeed universally avoided, the obvious question to ask is: What is the impetus for such a homogenous cultural proscription? We would argue that this question is especially interesting in light of the following: (1) the existence of placentophagy in mammalian and primate evolution; (2) its regular and common occurrence in extant mammalian species; and (3) the remarkable cultural variability that characterizes human beings in the bioarchaeological and ethnographic records which often reveals relatively rare, but longstanding and well documented, cultural practices (e.g., ritualized cannibalism; Harris 1985). Anthropology and evolutionary biology provide a range of theoretical positions from which to interrogate the question of cultural taboos and food avoidance, including ideational orientations (Douglas 1966), materialist, cost/benefit perspectives (Harris 1985), and bio-evolutionary approaches (Rozin 1976; Rozin and Fallon 1980). We think maternal placentophagy might provide a particularly interesting case study for such culture-specific or cross-cultural analyses.

Beyond the question of maternal placentophagy and the possible universal cultural avoidance associated with it, however, other well documented forms of ritualized treatment/disposal of the placenta represent another area ripe for future research. Davidson (1985), one of the very few researchers to tackle this subject, has studied placenta rituals in Africa, Asia, Europe and Latin America, with an emphasis on her own work in Peru. Consistent with the findings presented in the current study, she also identified a widely held belief that the proper treatment of the placenta can impact the health or well-being of the mother, child, or another member of the community. Based on these descriptions, Davidson suggests that placenta rituals likely serve as mechanisms to reduce the anxiety associated with childbirth. While this hypothesis remains only speculative, it does lend itself to future empirical investigation and hypothesis testing.

Finally, some researchers hypothesize that there are good reasons to think there are measurable health benefits for those few human mothers

that have recently begun to consume their placentas (Apari and Rózsa 2006). Such hypotheses provide at least a theoretical scientific basis to claims made by recent proponents of the contemporary practice, and in this light, we suggest that another line of future research might focus first on the systematic and empirical investigation of this claim: Are there measureable health benefits and/or risks to women who engage in the rare contemporary practice of placentophagy? The answers to the double puzzle of human placentophagy – why mammals, including our closest primate relatives, commonly engage in this behavior, and why humans are a rare exception to the mammalian rule – awaits a new age of research.

CONCLUSION

Despite the ubiquity of maternal placentophagy among eutherian mammals, including non-human primates, our cross-cultural ethnographic survey of 179 societies regarding the consumption, treatment, and disposal of human placenta, and its accompanying cultural beliefs and perceptions about the organ, failed to identify any unqualified examples of maternal placentophagy as a common cultural practice. Of the 109 human societies that specified any special treatment or disposal of the placenta postpartum, only one identified the practice of maternal placentophagy, but this account likely references a relatively rare practice of recent origin. Our findings did reveal, however, that many cultural ideas regarding the placenta involve beliefs that indicate that the specific means of treatment/disposal can affect some aspect of a person's life, usually the mother or the child. Some cultures also attribute human qualities to the placenta and a special tie to the infant. The conspicuous absence of maternal placentophagy in the cross-cultural ethnographic record, especially in light of its ubiquitous presence among nearly all other terrestrial mammals, raises interesting questions about and the reasons for its absence (or extreme rarity) among prehistoric/historic and contemporary human cultures. Many avenues of research, including experimental and observational animal studies, ethnographic investigations, and human observational and clinical studies await future research. One particularly fruitful area of study might investigate the potential health benefits and/or risks to a small but growing number of women who currently engage in the practice.

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