

# Cultural perspectives on the placenta

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## Abstract

Both in past times and in current scientific and medical prospects, the placenta is associated to conflicting values of danger, dirt, contamination and death but also of life and protection.

The placenta remains associated with maternal hemorrhage and danger in collective memory. Many populations also give a special status to the placenta related to the sharing of intrauterine life with the child, treating it as its twin. There are many customs of burying the placenta in a place that has a special meaning in the domestic space. The vascular tree converging to the umbilical cord symbolizes life, strength, longevity and fertility.

In some populations, the placenta is ceremonially prepared and eaten by the family of the newborn. The cosmetic industry offers products that boast the placenta's revitalizing and purifying virtues. At the end of the twentieth century, the advent of viral diseases has thrown a significant discredit to the placenta, which became a provider of blood that may harm or kill by contamination.

Nowadays, the placenta is a current source of research and is part of the arsenal of future diagnosis and therapies. Furthermore, it is at the heart of a resurgent popular practice that highlights its virtues for mother and child, very similar to those attributed formerly before being discarded in the recent past.

No current research on the placenta is devoid, for its authors, of representations arising from the collective memory in culture.

## Introduction

Birth is considered by anthropologists as a time of separation between mother and child that results in many rites of passage for placenta and cord, both physical reminders of the relationship between the woman and the fetus. Obstetric knowledge distinguishes the placental maternal side, contiguous to the uterus, and its fetal side, from which the cord is connected to the fetus. Placenta and cord also represent human body tissue.

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Their treatment is never left to chance in past nor present societies.

Separation from the placenta appears as the primary model of any rite of passage for the newborn. The placenta, as a detached part of mother and child bodies, could be a strong representation of what is lost after the very first biological individualization [1].

The placenta is thus a unique gestational one-pound frisbee-like organ with a short predetermined and limited length of life of nine months maximum. Although now known to allow gas and nutrient exchange for the child's growth and development, it can be responsible of severe maternal or fetal pathologies. Nowadays, it is explored by prenatal ultrasound. Its examination helps understand some pathologies of the newborn.

Multiple properties of the placenta are now fields of research. Other properties come from folk traditions and are rich in ambiguous representations such as wealth and danger, attributing very special powers to the placenta. Historical and anthropological approaches show that, at all times, this "object" was loaded with meaning and symbols. The question is to what extent these beliefs have, consciously or not, guided the course of research and acted in various crossroads in the history of science [2].

We will successively consider the symbolic representations of the placenta and its different uses over time and across cultures.

### Placental properties and symbolic functions earlier and nowadays, here and elsewhere

#### Symbol of life and death and its ambiguity

The placenta represents potential death. The postpartum haemorrhage has long been responsible of terrible maternal mortality rates. Everywhere, delivery is ensured by traditional medicine. Nevertheless, the placenta remains associated with danger in collective memory. The ambiguous proximity between life and death at the time of delivery is evidenced by the historian J. Gelis:

*"Still marked by blood, that of which is made the child, that lost by the mother, here is life which comes, threatened with death, that of the mother, that of the child" [3].*

Postpartum hemorrhage evokes the death of women who just gave birth. Its gravity is underlined by the historian JP Roux: *"To die to give life; this blood loss can it be a noble purpose? (...) The closer to that of men and warriors"[4].*

Some traditions consider blood losses of childbirth as defilement and attribute very special properties to the placenta. In countless cultures, the placental blood of childbirth, as well as menstrual blood, was a symbol of impurity generating the repulsion and isolation of women [5]. The placenta and linens soiled with blood can be burned for purification, as they were in France in Haute Loire [6]. Nevertheless, the historian M. Laget reports that matrons of the nineteenth century in France *"are often complicit in the surrounding to let the new mother in soiled sheets, because the white ball can make her bleed"*.

Most anthropologists hypothesize that the link between child and placenta participates in a dialectic between life and death that marks the whole existence of human being. The separation between soul and body after death may already be present at birth, in the concept that every birth is twin and that we are born flanked by a placental companion doomed to death [7].

According to A. Barry, author of several studies on rituals concerning the placenta in the African tradition, it is this representation of death, not its refusal, that motivates traditional treatments of the placenta [8]. Among the Agni-Bona of Ivory Coast, women take a canary (terracotta container), deposit materials taken out of the uterus, and bury everything where their

household waste is thrown. It may seem contradictory to treat such a precious organ as garbage, but A. Barry considers that this paradox can be compared to the ritual of exposing the newborn on garbage dumps outside the yard if he is thought to be threatened in order to protect him [8].

#### The symbolic newborn's twin and its subsequent treatment

Many populations give a special status to the placenta because it shares intrauterine life with the child, treating him as his twin. Some think that a part of the soul of the baby remains in the placenta after delivery. In Nepal, the placenta is called *Bucha-co-satthi*, i.e. "friend of the child". Malaysians see the placenta as an older sibling. Sometimes, when a child smiles unexpectedly, parents say that he's playing with his older brother, the placenta [9]. In many parts of the world, if a child needs special protection of its "double", he wears around his neck a dried piece of placenta.

Therefore, placenta should not be left to chance. According to many customs, the placenta is buried in a place that has a special meaning in the domestic space. In rural Europe, when the birth took place at home, the placenta was buried there. Considered as a "double" of the child, its burial was associated with the wish of giving the child certain qualities, expressed by the choice of the tree planted [10]. This burial was the role of the father, representing a concrete and symbolic participation in childbirth. The placenta, shadow of the newborn, returned to the final destiny of the human body: in the ground [11]. Burial practices represent a symbolic link between physical environment and human body. During the burial, it was also necessary to ensure that the placenta, twin of the child, did not fall into wrong hands because it could expose and weaken the newborn. Like other elements of human origin (menstrual blood, hair, broken nails, or even cloth or clothing), uncovered placenta could be the subject of harmful witchcraft towards the child, which also explains the attention paid to it.

Psychoanalysts have observed treatments of the placenta in "primitive" societies. A. Barry reports [8] that Freud himself links the notions of twins and death when writing, in 1911, a letter to Jung in which he addressed the twin symbolism of the placenta: *"In the accounts of so many pairs of brothers or twins, [...], one is weaker and dies earlier than the other [...]. The weaker twin brother who dies earlier is the placenta; simply because it is regularly delivered by the same mother at the same time as the child [12].*

In some African societies, the placenta would rather be perceived as the double of the mother than that of the newborn [8]. Thus, N. Journet describes the traditional burial in Joola population (Senegal, Guinea), where the placenta is referred to as "the mother of the latter (the child)", suggesting that the placenta is conceived as a duplicate of the mother; a mother from within, who must die for the newborn to live [13].

#### The tree of life

The vascular tree converging to the umbilical cord symbolizes life, strength, longevity and fertility. In rural Europe, some also plant on the same site a tree supposed to grow with the child. Since it becomes unnecessary for the child and is considered as fertile, the placenta is used to feed a plant which will be present in the child's environment. The analogy between the growth of this plant, fed by placental blood, and that of the child comes from there. The placenta has many therapeutic properties: it provides luck, fertilizes and repairs. In Languedoc, it was buried

near the roots or a tree was planted. Since it maintains its fertilizing function in the ground, it would give the mother milk in abundance [14].

*“Although this feeder apparatus that accompanies the child is responsible for so many concerns, yet it is a sign of fertility and prosperity. The image of the tree, whose roots are cut at birth, is an assimilation of the mother to the fertile earth” [9].*

Nowadays, websites make use of this traditional analogy to incite young mothers to keep their *tree of life* by different methods: *“Make an impression for a tree of life as a remembrance of the birth of your child”* [15]. In practice, to make an impression of placenta, it is advised to *“use placental blood to imprint, or to wipe the placenta and then use paint”*.

The treatment of the placenta and the symbolic approach of its functions in traditional civilizations meet that of old Europe. All over the world, the specific treatment of placenta is mainly to be buried. In African societies, there are mainly two modalities of treatment of the placenta, as described by Barry: either it is buried inside the space inhabited by the family, or it is put outside this space, 1) burial (underground) therefore, or 2) expulsion (outside). However, there are some isolated variants. The placenta can be buried outside the home, under trees, whose fruits will be destined for the grandparents or women of the family. It can also be transformed in a protective amulet carried by the child, or can be buried on the way to the fields (if it is the placenta of a boy) or to the well (if it is that of a girl) so that it precedes the individual in what will be the main activity of his life [8]. Interviewed as part of our medical thesis on representations of pregnancy and childbirth in Eastern Senegal in the eighties, the Fulbe women from the village Ibel, state: *“The placenta is buried in the house, to the right corner of the entry if the child is a boy, to the left if it’s a girl. The ceremony and the ingredients are always the same: a hole in which are placed 4 sheets of bakura, then 3 seeds of rice, 3 seeds of mil, 3 cottonseed on which is placed the placenta, a piece of calabash and then all is covered with the earth”* (Illustration 1) [16]. There is a need to feed the placenta at its “funeral”, so it will later feed itself. Rice, millet and cotton are seeds that are used so they can germinate, grow and multiply. Their roots remain buried (like the placenta) while their stems and leaves bloom outside (like the child). The calabash comes from the fruit of a creeping liana and can be used as a bowl to contain daily meals, conserve and transport linen or luggage or to milk cows. Mature, it is round like the belly of a pregnant woman, with a “tail” like a cord attached to the navel.

### Subsequent maternal fertility

The burial of placenta plays an important role in subsequent maternal fertility. For the Aka Pygmies in Central African Republic, the placenta is buried in a circular pit of thirty inches deep where the woman gave birth, usually on the outskirts of the camp (Illustration 2) [17]. If the funeral goes wrong, the future fertility of the woman is endangered.

In Bobo people of Burkina Faso: *“After examining the placenta, an elderly woman prepares the grave where it is buried, and then trapped there, the cord facing up: she takes water in her mouth and spits on the grave to give it freshness by analogy to the maternal womb which should be moist to procreate”* [18]. The placenta is planted with two nourishing principles, water and shea (fat), so that it acquires nourishing and fertilizing properties.

The anthropologist G. Calame-Griaule describes a similar burial in a pottery among the Dogon (Mali), associating the purpose of fertilizing power and the exclusion of soiling. The Dogon strive to ward off this idea of rot by putting the placenta in pottery, which is equivalent to replacing it in maternal moisture. Thus, the placenta returns to water and land and will help fertilize the ground [19].

The Māori word for land also means placenta [16]. All life is seen as emerging from the womb under the sea of Papatūānuku, a mother earth figure who gives birth to all things, including people. Lands that appear above water are placentas from the womb [20].

Otherwise, in the same aim to enhance future maternal fertility and protection of the newborn, the placenta is hanged on a tree like in Cambodia in a pack of pipon, far from the newborn [21]. Here, these customs seem to have the character of excluding evil influences [22].

Barry reports psychotic impairments developed by heads of families displaced from their ancestral dwellings to the city of Ouagadougou after being separated from the placentas of family members buried. Distancing means the loss of the link with the placenta, which seems to have an undeniable clinical effect in people still attached to ancestral traditions.

### Placentas of twins: A special destiny?

Many cosmogonies place the twins to the world’s origin. Their representations are everywhere ambivalent, with dual reactions of strangeness/fear/wonder or good/evil because of the similarity and simultaneity of birth. Some populations have specific rituals for placentas corresponding to the specific social place (powerful or frightening) of twins.

In countries where Assisted Reproductive Techniques have been developed, some multiple pregnancies resulted in embryo reduction at the end of the first trimester of pregnancy. As a clinical case, after beginning a triplet pregnancy and ongoing twin pregnancy after embryo reduction, a mother, still in the guilt of her decision, wished to see her placentas. As shown on Illustration 3, there was a persistent fetal shape silhouette centered on the retinal pigment. Seeing this, the words of the mother were as follows: *“My fetus could not come loose from its placenta and remained huddled against it as a protective comforter till end: they stopped their life together, stayed with others together, and will leave together”*.

### Uses of the placenta

#### Placental scalable destiny in France in earlier and modern obstetrics

The first treaties of obstetrics in the eighteenth century emphasize the importance of complete delivery. Examination of the placenta is essential, as described by Marguerite de Coudray, whose manikins are famous (Illustration 4) [18]. The examination, still relevant in all delivery rooms, is focused to certify the integrity of the placenta, with a sequence of ritualized gestures by all midwives.

Nowadays, current medical knowledge focuses on the ontological dominant vision rather than the mother-child bond. Placenta is now considered like the umbilical cord as a fetal annex. According to B. Tillard, if considered as an organic part of human origin, it should be treated as such and at least be incinerated, but if is considered a “waste of care activities”, it must

be treated in the system of disinfection and adequate disposal [11].

Until recently (end of twenties), after checking its integrity, the placenta was placed in the freezer of the delivery room and transferred or sold to industries to be used in cosmetic or pharmaceutical products. It was also present in services in charge of burned persons to help the budding of the skin and its healing. These uses were nearby anthropological data, believing in its repairing virtues. Society therefore recognized its positive, especially dermatological, interest and utilities. At that time, there was no concept of ownership of body fluids and components, nor of one's informed consent to use them.

### Current women's attitudes

Modern women's attitudes towards their placenta at birth are various. Some ask to see their placenta, whereas others are indifferent or find it repulsive. Occasionally, in our clinical practice, women from the French Caribbean giving birth in metropolitan France express the desire to bury it in the grounds of the family residence.

Mention may be made of the special case of a woman giving birth in a Parisian maternity to twins conceived by egg donation at a late age who had a postpartum hemorrhage after an emergency caesarean section performed in a context of severe pre-eclampsia at 6 months of pregnancy. While the prognosis of the mother and children was engaged and the hemostasis hard to control, the mother was obsessed with getting the placenta (which had been neglected in the emergency). Adopted in adulthood by Sioux Indians, she had herself adopted their tradition of burial, supposed to guarantee a successful life for children. This was a case of misunderstanding between the mother and the medical team faced with a life-threatening situation. A young medical student suggested the placenta be substituted with another one. For the medical team, this suggestion was an intolerable solution in their representation of the placenta-child unit.

### The epistemological balance

At the end of the twenties, the advent of Human Immunodeficiency Virus (HIV) infection and Creutzfeldt-Jacob (BSE) disease has thrown a significant discredit to the placenta. The fear of prion and the tainted blood scandal aroused suspicion on all therapeutic and cosmetic uses of body elements and fluids. The representation of the placenta suddenly became negative, considered as a risk factor, potentially contaminated and contaminant, and was destroyed with strict procedures. In the fight against nosocomial infections, the placenta is no longer seen as a maternal link with the fetus, but as a provider of blood that may harm or kill by contamination. Pejorative attributes of the placenta are linked to blood and sexual dual transmission because it is a double vector: it is engaged with blood, but is also one of the products of conception (so from the sex) and travels through the female tract at the time of birth.

Through these successive developments, the vision of the placenta in the medical environment alternates between positive and negative representations.

Hence, uses of the placenta could have gone, but its story, is by no means over. At first, the placenta is a current source of research, highlighting an infinity of positive capacities in the future arsenal of diagnosis and therapies. At the time of various discoveries, including indications of tissue grafts from the deliv-

ery tissues, the presence of fetal stem cells in the placenta and cord bring a revival of positive and exciting representations of the placenta. The notion of "placental barrier" permeates medical thought to this day, barrier of the placenta against drugs and ionizing radiation that may protect the fetus in a law of "all or nothing".

Furthermore, the placenta is, against all logic, at the heart of a resurgent popular practice highlighting its virtues for the mother and child, very similar to those attributed to it formerly before being discarded in the recent past.

### Prognosis of quality of life of the newborn

New research examples suggest that placental examination is of strong prognosis for asymptomatic newborns with undiagnosed condition, such as genetic and metabolic diseases that request early interventions: "*The placenta represents a real living memory or « black-box » of the fetal – maternal interactions and adverse intrauterine events*" [2].

A final reminiscence goes back to the anthropological Bobo society in Burkina Faso, where, according to the examination of the placenta (his double) at birth, the child will wear a particular woven loincloth. The woman raises the ruptured membrane to look if there are signs or colored spots on the placenta which indicate the type of protective fabric that the child will have to wear [18]. With highly more acute tools than elderly women in African villages, but still with eye examination, placental weight, expansion, shape, thickness, number of cotyledons and morphotype are assessed. Placental abnormalities may be correlated to abnormal fetal development and diseases in later life.

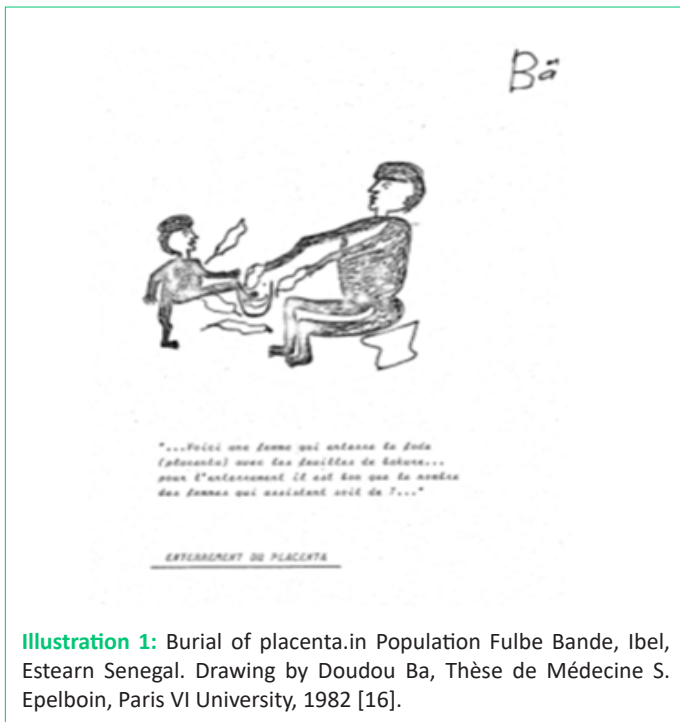
### Placental cake and placentophagy

Latin etymology of the word placenta evokes the appearance of a cake. In French, the expression "placental cake" is used, as well as in German, where *mutterkuchen* means "cake of the mother". In some populations like the Chinese, it is ceremonially prepared and eaten by the family of the newborn. In addition, traditional Chinese medicine sometimes prescribes dried placenta for chronic cough, liver problems and male impotence [9].

In rural European populations, some historians report the custom of ingesting placenta to give the woman nutrients spent during pregnancy in the Middle Ages. The engravings representing bath of newborns sometimes show the new mother on her bed, to whom it is provided a "fertile cake" whose shape and color are similar to those of the placenta [3].

Currently, although no serious highlights health benefits and even evidence detrimental effects, many websites encourage women to this consumption to maximize postpartum energy with the following guidance: "*It can be prepared as smoothie... by milkshake...as a herbal tea*" [15]. Therapeutic uses related to medicinal properties are provided in web recipes as follows: "*Do it yourself or have it done by a foreign laboratory since it became illegal in France*" [23]. Placenta orally consumed has various virtues for the mother, such as "*Rapid recovery of vitality after childbirth, rapid return up body organs, optimum flow of milk, avoiding lymphangitis, postpartum depression, but also «prevent cellular aging that statistically occurs following delivery, reduce hair loss...»*". Furthermore, the virtues praised for the child are diverse: "*It should be up to the age of 7 years in case of gastroenteritis, toxicosis, high fever - viral diseases, strong bronchitis, bronchiolitis, otitis, mastoiditis, meningitis, and all problems of declining immune or chronic diseases resistant to*

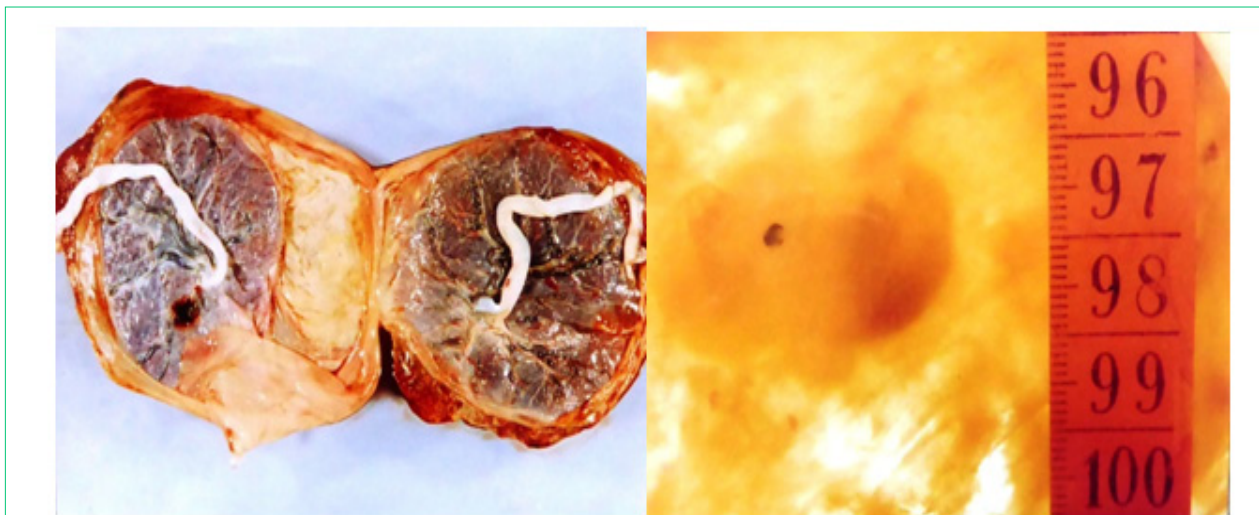




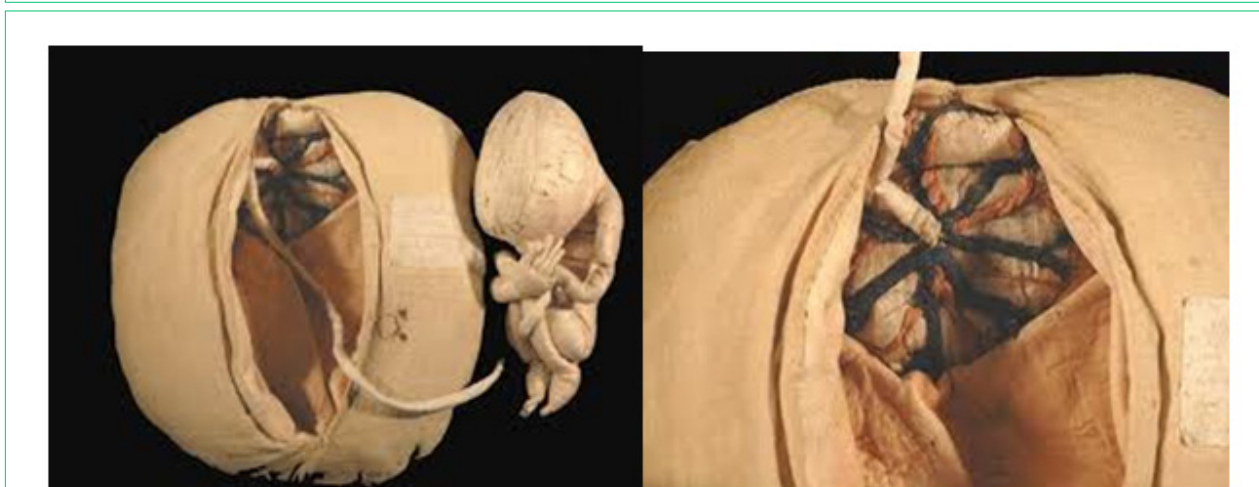
**Illustration 1:** Burial of placenta in Population Fulbe Bande, Ibel, Estern Senegal. Drawing by Doudou Ba, Thèse de Médecine S. Epelboin, Paris VI University, 1982 [16].



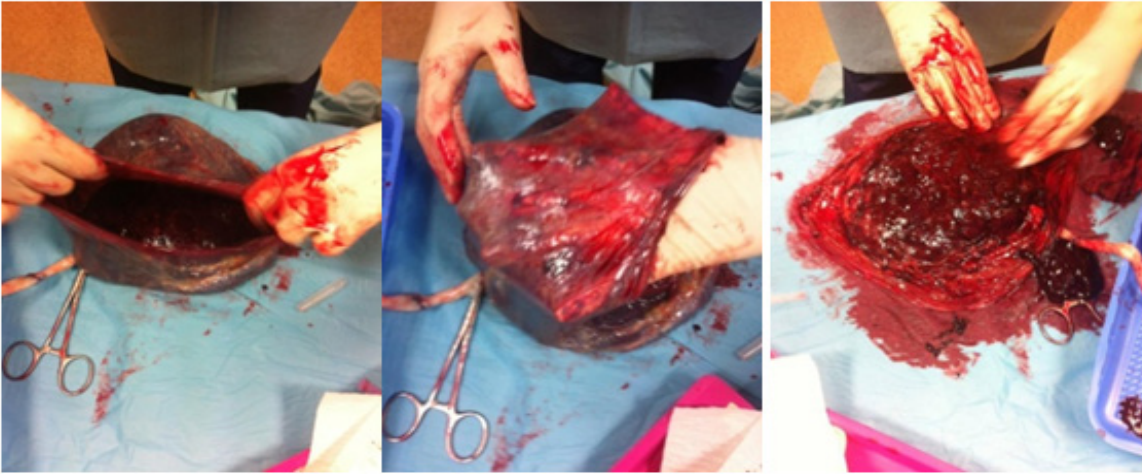
**Illustration 2:** Burial of placenta in Aka Pygmies, Central African Republic, Photo A. Epelboin [17].



**Illustration 3:** Persistent fetal shape silhouette centered on the retinal pigment after vanishing twin in twin pregnancy, Photo S. Epelboin.



**Illustration 4:** Copy of Manekins of M. du Coudray, Musée de l'Homme, photo A. Epelboin.



**Illustration 5:** Examination of the placenta after delivery, 2014, Bichat Hospital, Paris, Photo S. Epelboin.

*conventional treatments*". Echoing traditional practices, e-prescriptions suggest that the placenta facilitates breastfeeding and strengthens the mother-child relationship (relaying the role of the placenta in utero), as in this site: "*Less impact of emotional upheaval or 'baby blues'... facilitation of the mother-child bond*" [24]. A site in Quebec, which presents itself as a "personalized placenta encapsulation service", invokes very cleverly scientific arguments within practices of other cultures: "*The act of consuming the placenta, still existing behavior among different peoples in the world, including Sudan, South America and China, however, is new for us in North America...First, know that the placenta kept in reserve an impressive amount of protein, iron, vitamins, trace elements and above all hormones...Thus, the circle is complete; the body that provided optimal growth of the unborn now ensures optimal recovery for the mother also*" [24]. However, advertising also mention an energizing effect which could be useful in the world of work: "*Celebrities attest, such as January Jones, actress in Mad Men who had to go back to acting six weeks after birth*" [23]. Despite this multitude of websites on the virtues of placentophagy, there are no scientific studies demonstrating its effects.

Where it is not forbidden, cosmetic companies develop various "creams of youth" from placental material, boasting its revitalizing and purifying values and its power to rejuvenate: "*Victoria Beckham, J-Lo, Tom Cruise ... Big stars take advantage of this ultra-powerful tissue tonic for a makeover. In place of Botox or surgery, placenta rages among VIP*" [25]. Nevertheless, given the revival of these ritual, several health agencies worldwide edited recommendations against human placenta ingestion, like in Australia. The Therapeutic Goods Administration (TGA) highlighted the potential risks of placental preparation and consumption to future mothers: "*biological material (...) capable of containing and transmitting infectious agents, including bacteria and viruses. In addition, preparation may inadvertently introduce infectious agents*" [26].

### Discussion and conclusion

Transforming knowledge of the placenta changed the representation of the link between mother and child: from *protector twin* to a *precious* tool for all physicians. The placenta is associated to conflicting values of danger, dirt, contamination and death but also of life and protection... in past times and in future scientific and medical perspectives. No current research on the placenta is devoid, for its authors, of representations arising

from collective memory in each culture. The role of the placenta, its uses and representations in the past are, for today's scientists, of several interests. On one hand, like any contribution of human sciences in the field of hard sciences, this approach allows a more targeted understanding of any research subject. On the other hand, the placenta, as we have described, is not an organ like any other since it is intermediate between part of the human and body waste. Therefore, research that results from it is not like others, devoid of collective memory. These old beliefs go through past or contemporary unconsciousness, and allow us to reflect on future contributions of placental research. In addition, given current trends, science must be vigilant to thwart so-called scientific, but actually commercial, uses of the placenta based on ancient beliefs.

The symbolic dimension of the placenta which has been described here, particularly concerning the humanity of the placenta and its twinness with the newborn, should not be an obstacle to scientific research, which ethically is not harmful, neither to the mother, nor to the child. On the contrary, it could be promising for the prediction, and even the anticipation, of childhood pathologies. To our knowledge, a majority of jurisdictions are in accordance with these considerations. Scientific workforce on the placenta, as that on the cord which has not been specifically addressed here, may be carried out according to these perspectives while respecting traditional cultural representations that should not be an obstacle to scientific advances.

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