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Child Carrying Bag Inspired by
Ethnic Child Carrying Practices

Final thesis

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Tartu 2022

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INTRODUCTION

Today, many ergonomic child carrying bags are produced. My goal with this work is to not compete with them but to rather introduce ethnic child carrying practices, and bring these examples into the context of the modern world.

In this thesis, I will explore the different ways of carrying a child used by non-industrial societies and highlight the characteristics that have influenced my design process. Baby carrying history is very diverse and influential because different cultures around the world have adopted various ways of carrying their children. Throughout evolution, baby carrying has played a decisive role in development of the human species (Hughes, 2013).

Climate has a powerful influence on the type of baby carriers that are used, in terms of both material thickness and position of the baby. Another important differentiation between baby carrying practices was determined by families' living conditions – namely, whether the mother was forced to work and needed to take care of the baby, or she had family to take care of the baby instead. Therefore, the subject of this thesis is important because baby carriers reflect the values of the culture that they represent.

Baby carriers are also an important reflection of the spirituality of a culture. Creating symbolic meanings in baby carrying is seen as essential among cultures around the world, because this creates a spiritual bond with the baby. Nowadays, this tradition is fading with mass production of high demand baby products.

Today, there are many ways of carrying a child, such as common carrier slings and baby carrier bags that are either framed or frameless. Looking at the bags on the market, one can notice that most of them are made of natural or synthetic fabrics, but there are hardly any baby carrier bags made of leather.

Leather is a very valuable material that retains a lot of information. In recent years, I have been in close contact with sheep farming, and this experience has taught me how important it is to be aware of the origin of leather. Linking my creative work with different

indigenous peoples has been the most important thing to me, following the example of the ability to use animal materials.

Different ways of carrying children may vary based on the age of the child. The aim of this thesis is to create a bag for carrying a child from 60-85 cm of height.

The first chapter of this thesis introduces the history of baby carrying as well as its importance to human evolution. The first chapter also gives an overview of some symbolic meanings that can be associated with baby carrying across different folklores. The second chapter centres on child carrying traditions in various cultures around the world and what elements may have affected those examples. In the respective sub-chapters, different cultures with their own unique child carrying traditions will be compared. For that purpose, I divide baby carriers as framed and frameless carriers. These are not official terms used in baby carrying today but rather a way to generalize a very diverse culture of baby carrying around the world. The featured baby carriers are divided by geographical locations and not nations. The third chapter gives an overview of contemporary child carrying gear, depending on different activities and babies' ages. The fourth and final chapter centres on the design process of creating a child carrying bag inspired by ethnic child carrying practices and highlights the characteristics that affected my design process.

Advisor for this thesis is an expert of child carrying, Kadri Viirand.

1. BABY CARRYING

1.1. Child carrying history

Modern humans all descend from nomadic, savannah-dwelling hunter-gatherers who evolved to an upright, bipedal human who was used to covering large distances. That meant carrying both food in case of shortage as well as their offspring. (Hughes, 2013)

The Naked Love Evolutionary suggests that through evolution ancestral infants lost their ability to grasp the mother's fur with their feet, therefore infants survived only if early bipedal mothers had a strong desire to hold and carry them (Giles, 2010). Due to the energy drain of carrying an infant without the use of a sling, this would have been one of the first pieces of clothing to be designed (Hughes, 2013). Therefore, simple baby carriers may have played a decisive role in development of the human species.

Anthropologist Sarah Blaffer Hrdy suggests that this allowed mothers to carry food as well as their babies, leading to a new division of labour between men and women. She indicates that this led to better fed mothers, who gave birth after shorter intervals, and an expanding human population moving out of Africa. The author also indicates that for the nomadic mothers, the crucial decisions have always been whether it is safe to leave her baby with another carer, and whether she will return in time to feed him. (Hrdy, 2000, p. 197)

Baby carrying history is very diverse, because different cultures around the world have adapted to various ways to carry their children. Climate has had a powerful influence on the type of baby carriers that are used, in terms of thickness of materials used and position of the baby.

Only in extremely hot climates mothers breastfeed their infants frequently, both day and night, sometimes as much as once or more per hour. In some indigenous cultures, mothers work in the fields during the day, leaving their infants with other family members, but they nurse their infants frequently during the night. The infants go long stretches without nursing during the day.

In colder climates, babies can be breastfed less frequently since they require less fluid. Mothers in these cultures are less likely to keep their babies close to their bodies and have

the option of placing them in “cradles or hammocks, and strap them to cradle boards, animals, or sleds for transportation”. (Solter, 2001)

1.2. Meanings behind child carrying

The diverse materials in which new-borns have been wrapped throughout times has said to have immense importance. “The first object that touches a new-born is, in many cases, a wrapping material. It may bind, swaddle, cover, carry, or straighten the body, and the objects form and the material from which it is made vary across time and space. Animal skins, bark cloth, and linen bands as well as net bags, shawls, and sarongs are among the objects that can be considered as baby wrapping” (Harris & Douny, 2012). Broadly speaking, the use of wrapping has historically represented the extension of infants transitioning out of the womb. “It is easy enough to see how a cloth or sling may be used to transport a baby or keep it warm, but other cultural meanings are less easy to discern and are often intertwined with the body. For example, after a prolonged gestation period during which mother and baby are fused, the wrapping material may be perceived as containing elements that carry over from the womb and help to move the infant from a liminal, transition state to viable personhood. The distinction between inside-the-womb and outside-the-womb is thus blurred” (Harris & Douny, 2012).

A book of Estonian folk culture presents traditions to follow while a woman is pregnant. “We often note the magic of analogy: when taking water from the well, you should not pour the water back into the well or shake it off – you will have a dribbling child; do not drink from a bucket – the child is born with a large mouth; you should not eat from a bread kneading bowl (or any other hollow object) – the child will have an endless appetite, etc. The most general belief is that if the mother touches her face or body with her hand when looking at fire, the child will develop a fire mark in that spot” (Teder, 1998, lk 312).

Following the Estonian folk sayings, a child is affected by mother’s actions while being in the womb. The book on Wrapping and Unwrapping Material Culture draws a connection between the five ways a child can be carried (swaddling, wrapping, carrying, tying, and wearing) and how it effects child’s development in spiritual ways.

Examples of various occasions that child-carrying is central to abound from different cultures. The Galos in north-eastern India believe that the masculine spirit of the father will strengthen the attachment of the new-born's soul to father's body, and the connection between their souls is extremely close and strong. It is believed that everything that happens to the father in the first days after the birth of the baby will certainly affect the fate of the new-born, so at first the father and baby are practically inseparable. (Doye, 2015)

In Papua New Guinea, if women happen to go somewhere at dusk or at night, they always carry babies in front. It is believed that if the baby is left behind unattended, then female spirits from the other world can feed him with their dead milk. Before feeding, the mother often expresses the first drops of milk on the ground – it is believed that this way she neutralizes the invisible traces of female spirits and their children, imperceptibly wandering around in the twilight of the night. (Kornilova, Папуа Новая Гвинея - билум, 2010)

Hunting is an important part of the Yao's life. Not only it is a source of food, but it also provides some security from wild animals that abound in the forest. After a hunt, the prey is divided among all hunters. It is interesting that children who sat in slings on the backs of their fathers during the hunt also receive their portions. So, from childhood, they participate in the life of their tribe, gradually taking over work done by males. (Kornilova, Китай: слинги этнических меньшинств, 2010)

2. CHILD CARRYING IN DIFFERENT CULTURES

The origins of babywearing go back deep into previous millennia, but not all countries have preserved them to this day, and some did not have them at all. The latter applies to those countries and people for whom it is traditional to settle in one place (house, village) in large groups, usually family clans, and there is no need for long movements. In historical context, carrying a child, and especially a new-born, is due to difficult living conditions, when the mother is forced to work and needs to take care of the baby.

For example, in India, where the family consists of numerous members, the role of carrying children is split between the household. There is a saying in India, "We do not need any carriers, as long as there are enough relatives. Let the young mother take care of the baby, and the relatives will take care of the rest."

Research was made to learn about whether skin-to-skin after birth is important in different non-industrial societies. "To determine whether women giving birth in traditional societies maintained early and extended skin-to-skin contact with their neonates and nursed them immediately, descriptions of childbirth in 186 non-industrial societies were examined. Most cultures made no special effort to get mothers in body contact with infants in the minutes after birth: almost always the neonate was bathed, generally by a female birth assistant and in 54 per cent the baby was placed in a cradle or basket. Skin-to-skin contact was uncommon, since the infant was given nude to the mother in only 14 per cent of societies" (Lozoff, 1983). This gives a different understanding of the birthing process in other cultures, compared to the general understanding that skin-to-skin contact is one of the most important steps. "However, in 98 per cent mother and baby subsequently rested together. In only 27 per cent were fathers allowed to be present during childbirth. Few cultures permitted immediate postpartum nursing, and the first breast-feeding was delayed 24 hours or more in 52 per cent." (Lozoff, 1983)

In most ethnic minorities, a sling starts to be used when the infant is 2-4 weeks old. Until then, the mother carries the child in her arms or asks help from family members. The baby is also sometimes worn in a sling in front, if necessary, and secured with hands from sides. Carrying a child in the hands is thought to be a good practice before putting the baby in a

carrier. This way the mother becomes confident in carrying the child before starting to wear the baby.

There is no precise information about the age at which ethnic groups begin to wear babies on their backs. However, it should be noted that many ethnicities put attention to the comfort and physiological position of the baby in the carrier. For example, in China and Vietnam, a headrest is often sewn to the carrier, which provides good support for baby's head if the infant cannot hold it on themselves. Some mothers use a cloth to fix child's head, if the design of the carrier does not allow for it.

In the following sub-chapters, different cultures with their own unique child carrying traditions will be compared. For that purpose, I divide them as framed and frameless baby carriers. Different shaped structures are described as framed carriers, and other slings or carriers are defined as frameless carriers. These are not official terms used in baby carrying today but rather a way to generalize a very diverse culture of baby carrying around the world.

2.1. Frameless baby carriers

In Eastern cultures, babywearing has long been a part of natural life. Asian slings not only came to the Western world, but also inspired the creation of many similar baby carriers. The following baby carriers are divided by geographical locations and not nations.

2.1.1. China



Photo 1: Hoklo 1970's Baby Carrier with Lattice Head Support (hipababy, 2018)

In China, the traditional mai sling (mei tai) is close to a square shaped piece of fabric with four parallel straps of equal length. The quite narrow straps of the traditional mei tai do not have lining and can be tied in many ways. An additional headrest is sometimes sewn to the carrier, providing support for the baby's head. It's important to use a durable fabric for sewing a mei tai carrier, but no special information was usually added to the carrier. Fabrics that were used show the national Chinese fabrics that are around in the many different regions where mei tai is used. In cold weather, in addition to the sling, a small blanket or a warm cape

was used as insulation. Wearing slings is most popular among ethnic minorities.
(Kornilova, 2010)



Figure 1: Mei Tai (Author's Drawing)

Baby carriers made by ethnic minorities in Southwest China offer more than just practical functions, they reflect the traditional workmanship, cultural practices, and overall views of different ethnicities.



Photo 2: Miao Woman with Baby in Waxed (Batik) and Embroidered Baby Carrier in Lou Jia Zhuang Village (Cross P. A., 2004)

Miao is a group of peoples in China numbering about 11 million people with their own language and culture. Their history goes back about 2000 years, and they are officially recognized by the Chinese government as an ethnic minority group. They live mainly in southern China in the provinces of Hunan, Yunnan, Sichuan and Guangxi, and a small part in northern Vietnam, Laos, Thailand, Myanmar. (Kornilova, Китай: слинги этнических меньшинств, 2010)

Baby carriers are considered the second umbilical cord between Miao women and their children. Miao women generally spend a large amount of time and effort sewing their baby carriers by hand. The carriers are decorated with symbolic silk thread embroidery.

Women tend to embroider patterns of two birds facing the sun, flowers, animals, or other elements from the surrounding nature onto their baby carriers to pray for fertility and

procreation. Sometimes a separate embroidered piece of fabric is attached to the centre of the carrier, which can be removable. Therefore, baby carriers reflect the handcrafting skill of Miao women. Compared to the mai sling, this carrier contains of two long and rather wide straps, instead of four. To balance housework and farm work, the Huawu Miao women and men often care for their young children by carrying them on their backs. Author of Hmong Studies Journal Cho Hsin-ying describes in his research how the embroidered patterns are closely related to the historical relocation of the Miao people, local living environment and the Miao creation myth. (Hsin-ying, 2021)



Figure 2: A Traditional Embroidered Baby Carrier Used by The Huawu Miao People (Cheng-chung, 2021)

The devotion to signing detailed symbolic elements drawn from nature on to baby carriers to protect them spiritually shows that a sling is not just a means for carrying a child for the Miao people, but the embodiment of sincere devotion to motherhood.



Photo 3: Miao Baby Carrier (Dayton, n.d.)

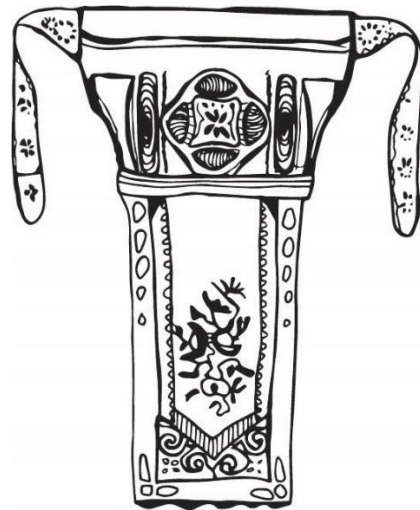


Figure 3: Miao Carrier (Author's Drawing)



Figure 4: Bai Father with his Child in a Carrier with Legs Upright (Needham, 2017)

Bai are an ethnic group in southwestern China, numbering almost 2 million. The word "bai" means "white", which is the sacred colour in their culture, symbolizing purity and nobility. The traditional clothes of the Bai people are very bright and colourful. The main colours for clothes are light shades, providing a beautiful contrast with darker ornaments and decorations. Elaborately embroidered slings, used for carrying children on backs, are important elements of women's clothing. Bai have their own peculiar way of wearing slings - they tie children higher so that they can look over their parents' shoulders, studying the world around them. The carriers are padded with a layer of horsehair and quilted felt.

The ties are crisscrossed in front and tied around the parent's waist to secure the baby. The child is carried while in a standing position, with hands on the sides. On the waist part of the sling there is a special thickening made of felt. This reduces the weight on the mother's back and shoulders and is also meant to make the baby feel comfortable. The embroidery often contains blooming flowers, fluttering butterflies, leaves, curls of stems, images of birds and animals. The Bai people believe that flowers are a symbol of happiness, so

wearing slings and clothes emblazoned with flowers is believed to bring prosperity.
(Kornilova, Китай: слинги этнических меньшинств, 2010)

It's a beautiful tradition that the Bai people connect their sign of prosperity, the flower, with their baby wearing customs, presenting their beliefs and morals on their children's backs.



*Figure 5: Bai Baby Carrier Silhouette
(Author's Drawing)*

2.1.2. Korea



*Photo 4: Blanket Type Podaegi
(Choi, 1994)*

Podaegi is a square cloth used for carrying a baby, which originated in Korea and was historically an essential item for raising a child. However currently Koreans prefer baby-carriers, baby hip-seats, and other equipment. Podaegis used to be categorized by band type, blanket type, combination type, cheone type, modern type, and so on. Recently, podaegi is becoming popular around the world (Han & Lee, 2020).

In most pictures from different podaegi types, the slings were worn with children sitting quite low. Jaehwi Han's and Eunjin Lee's research shed light on the differences between the different types of podaegis. Blanket type podaegis used to cover the carrier's chest and legs.

Combination type and band type podaeigis acted as more of a low simple sling, with the baby sitting on the back or on the hip.

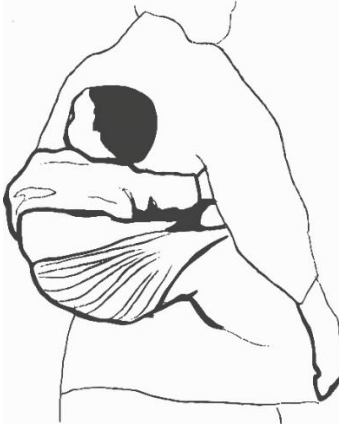


Figure 6: Cheone Type Carrier (Author's Drawing)



Photo 5: Combination Type Carrier (Museum, 2009)

2.1.3. Cambodia



Figure 7: Cambodian Krama Scarf (Author's Drawing)

In Cambodia new-borns are not worn very often, unless the mother must go somewhere. Krama is a squared Cambodian headscarf which is also used to make a cradle for a child, or rather a hammock. Hanging it nearby, the mother can do household chores, rocking the baby time-to-time. If the mother needs to go somewhere with the baby, she carries it in a krama also. Until the child begins to hold his head on his own, they are carried in a horizontal position in front, and when they grow older and have full control over their head, they are transferred to a vertical position, usually on the thigh. Older children are worn on the hip and back. In Cambodia everyone wears children in krama, but it is most common among the poor, because other can leave their children at home with relatives. (Kornilova, Камбоджа: крама , 2010)

Krama represents very well how one item of clothing has become so distinctively a part of a culture and is devotedly used in all fields of life, also in child carrying.

2.1.4. India

Many travellers, having visited India, say that they saw women carrying their children in slings only in the highlands and among the poorest parts of the population. In areas where caste differences are still strong, mothers from lower castes carry their children by tying them to themselves with various shawls, saris, or just some piece of cloth. There is no concept of a special sling or scarf for carrying a child. However, even the poorest parents do not often carry their children. Such living conditions contribute to the fact that the carrying of babies is often shifted to the shoulders of the older generation or the sisters and brothers of the baby. Raised in a patriarchal society, most Indian men see child carrying as a female occupation. (Корнилова, Индия. Страна контрастов., 2010)

2.1.6. Island of Borneo



Among other Dayak tribes, there is a strong belief that newborns and infants should not sleep lying down because this represents the position of an ill or deceased person. Therefore, in order not to tease the spirits of death and illness, the baby is suspended vertically, in a special hanging cradle made of fabric, of course completely fixing the head and body of the baby. The babies are carried horizontally in mother's arms to be able to feed, and for sleeping they are hung again in the cradle. Women who have given birth should also be only in an upright or sitting position.

Figure 8: Borneo Baby in a Hanging Cradle (Author's Drawing)

2.1.7. Inuit (Greenland, Canada, United States, Russia)



Photo 6: Sheila Katsak carries her daughter in her amauti. (Collective, 2021)

“A very special kind of parka is made and worn by Inuit mothers. *Amautis* are parkas that can carry babies and keep them warm, while freeing up mother’s hands. The baby is carried in a pocket, or *amaut* in Inuit language, that sits below the hood. The shoulders are made loosely fitting so that the mother can move the baby to her breast for feeding without removing the child from the snug parka.” (Blog, 2021)

Looking at the carrier, some may assume that the child is just sitting in the hood, however, this is not the case. The large hood is designed to cover the mother and child to keep them warm.

The baby is first swaddled in a cotton fabric.

After swaddling the baby is slid to the back, while the hood protects the baby from falling. The amauti has very wide sleeves and shoulders so that the mother can easily move the baby forward and feed, if necessary. A strap around the waist helps to keep the baby in the pouch under the hood of the amauti. (Transcript, 2020)

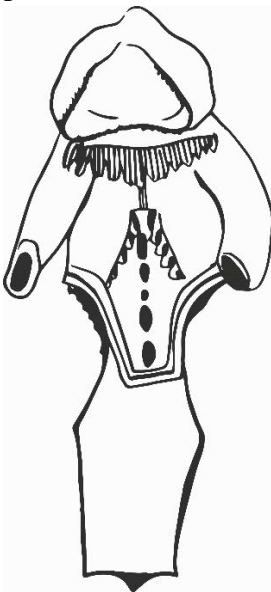


Figure 9: Amauti Parka Silhouette

Amauti can be made from a variety of materials, such as seal fur, leather, or thick woollen fabric with a windproof outer shell. The sleeves and hem of the winter amauti are sheathed with a continuous long braid, which emphasizes the femininity of the attire.

Constantly wearing their child allows Inuit women to sense the emotional and physical state of the child, creating a strong connection.

In conclusion, baby carrying traditions are very diverse, because different cultures around the world have adapted to various ways of carrying their children. Baby carriers play an important role for parents as they help to protect the children whilst the parents are working or being on foot. In polygamous societies, the task of carrying a baby and feeding them can be divided between women of the household. In some cultures, the task of baby carry is passed on to the older siblings of the family, while the mother is off at work. In some cases, the carry of children symbolizes being poor and incapable of having someone to care for the baby. In these situations, children are left at home to be taken care of by numerous family members while the mother is at work. Climate plays an important role when it comes to the materials and structure of the baby carrier. Babies must be kept close and fed more often in hot climates, while in some climates the baby can be away from the mother more as they are fed less frequently.

Soft-structured baby carriers portray a more simple and natural way of baby carry – because of the soft fabric, the carrier acquires the shape of the baby. The position of the baby is more acceptable by modern standards because of the position of child's hips. The Bai carriers are an example of upright carrying positions as the baby is carried in a standing position. Some carriers are made for the baby to be carried in horizontal position, for example on the mother's hip. Among Dayak tribes the baby is suspended vertically in a special hanging cradle. These traditions are affected by the historical ways of baby carry and the spiritual meaning behind the position of the baby. Some cultures put special emphasis on baby's well-being, while some choices in the construction are made for practical reasons. The babies are mostly positioned facing the wearer, but in some cases the child faces away from the wearer, symbolizing independence, and discovery of the world through baby's own eyes.

The use of fabric, patterns and embroidery in baby carriers are heavily connected to each culture's traditional clothing. Sometimes special emphasis is put on the carrier through protective symbols and embroidery.

2.2. Framed baby carriers

In the context of this thesis, framed baby carriers are different shape-holding structures. This can refer to baskets, cradles, cradleboards, and so on.

Some ethnic minorities carry their babies in their cradles. A leather strap is attached to the cradle, which runs along the back of the carrier and makes it easier to carry the baby.

2.2.1. Darjeeling



Figure 10: Darjeeling Tea Plantation Women Carrying their Children in Wicker Baskets (Author's Drawing)

In the Himalayas, on the tea plantations of Darjeeling (northern India), Nepalese and Indian women are carrying children, and not only in saris, shawls, and scarves, but also in wicker baskets. These carriers are attached to the wearer with a strap that goes on top of the head, like the band used by the Ainu peoples. (Kornilova, Индия. Страна контрастов., 2010)

2.2.2. Island of Borneo



Photo 7: Dayak Woman with Carrier (Puryanto, 2012)

Borneo is the third largest island in the world. Iban or Dayak is the general term applied to Borneo's two million tribal people, including the Kenyah, the Bahau, Kayan, Punan and others. The Ibans and Dayaks of Sarawak and Kalimantan live in longhouse village communities. (LaDuke, 1981)

Traditionally, the Dayaks carry their children in a kind of a wicker basket (dayak baby carrier or ba'), with a wooden base the shape of a semicircle. Children are worn in them from infancy to 2-3 years, and mainly on backs. The child

sits inside the "basket", facing forward, and his legs hang freely on the sides of his mother's body. Ba' is worn not only on the back, but also in the front - especially while the baby is still small and breastfed. The choice of animal claws and fangs for decorating ba', as well as the number of them, is determined by the social status of the child and his gender. For mothers, ba' is far from being just a utilitarian thing, it is a part of the soul of their child, a thing in which the spirit of their kid lives. For the children of the Dayaks, Ba' and wearing it symbolizes a kind of refuge from all sorts of fears and dangers. (Whittier & Whittier, 1988)



*Photo 8: Dayak Baby Carrier.
Indonesia (Gallery, 2021)*

Many Dayaks believe that the soul of a new-born is not yet firmly entrenched in the body, and therefore pay special attention to the decoration of the carrier. It is believed that the aesthetic beauty of the jewellery attracts the soul of the child, holding it in the body, and various amulets, such as rattling shells, teeth, and fangs, create noise when moving, which scares away evil spirits. These decorations are inherited from generation to generation. (Whittier & Whittier, 1988)

Dayak baby carriers are a symbol of healing and creating strong spiritual connections. The Dayak peoples pay special attention to their baby carrying gear, with their crafts and spirituality.

2.1.5. Japan



Photo 9: (Duits, 1920s: AINU Mother & Child, 2021)

Ainu are indigenous people currently officially living on the island of Hokkaido (Japan), numbering about 25,000 people. Historically the Ainu did not need to carry babies for a long time, because it was the sacred duty of the mistress of the house to continuously keep fire in the hearth, and this meant an almost continuous presence with no need to carry the children. The tradition of carrying children in this way has been preserved among the Ainu to this day. (Kornilova, Япония: из глубины тысячелетий, 2010)

Ainu mothers carried their young children in a loose garment, or net, on their back. The garment or net was supported by a band around the mother's head.

Ainu men carried children by holding them in their arms. This is quite different from the Japanese way of carrying children. (Duits, 2021)



Figure 11: AINU Mother Carrying a Child with Stick Attached to the Band (Author's Drawing)

The stick attached to the band creates a frame for the loose sling around the carrier's body. The carriers are made from a traditional textile with very distinctive patterns created by the Ainu.

2.2.3. Native Americans (Canada, United States)



Photo 10: Child in carrier, 1914
(Congress)

The carrying cradle was important in a mobile culture where families travelled by foot, snowshoe, dogsled, toboggan, and canoe throughout much of the year. A very young child would ride on his mother's back, under her parka or wrapped in a blanket and supported underneath by a baby strap. Slightly older children rode seated in a birch bark carrier, facing backwards or sideways; sometimes the baby strap was used in combination with the carrier to hold it up. (Institution, 2010)



Figure 12: Alaskan
Birch Bark Carrier
(Author's Drawing)

The bark carrier consists of a bowl-shaped seat, and vertical tongue in front that went up between the child's legs. Two leather straps also helped to keep him securely inside. The child wore fur pants that were cut away in the back, and moss or caribou hair were placed underneath to act as a diaper. (Institution, 2010)

Bark carrying cradles were used by many Athabascan peoples of western Canada and eastern Alaska including the Ahtna, Dena'ina, Koyukon, Gwich'in, Ingalik, Han, and Tanana. (Institution, 2010)

After looking at the archive photographs, it seems that this type of carrier was used for smaller children. The so-called tongue of the carrier that went between the legs of the child held place for different embroidered elements, which were meant to protect the child spiritually.

For the Yurok, Karuk, Hoopa peoples, baby baskets were woven of willow. Ten days after birth when it was deemed that the baby was safe, the symbolical "lifeline" was added across the top of the baby basket. At either end the indicators of child's



Photo 11: Native American Woman Carrying a Pacific-Coast Style Cradle (Archive, 2017)

sex was fixed: abalone shell for a girl, dentalium shell for a boy. In addition, beads and other things may have been added for decoration and sound. The baby was carried on mother's back, seated, and facing out towards the world. Below the seat was a space which held moss or lichens—the original disposable, biodegradable “diaper.” The “baby basket” meant multiple baskets. As the baby grew, a bigger basket was woven. Generally, three, but some-times four baskets were used. It was the child's possession, and often he or she would just crawl into it and feel safe. (Trinidad, n.d.)

Everyone's basket is different, depending on the design chosen and the willows that are collected. This type of carrier is passed on from generation to generation, and the carrier holds symbols of babies that have used it before as beads or other woven decorations. The carrier is made in about 6-9 months, depending on the consistency of work. (Redwoods, 2020)



Photo 12: Navajo Papoose in a Cradleboard with a Lamb Approaching, Window Rock, Arizona (Archives, 2009)

“Throughout the American Southwest and the Great Basin and Plateau regions, Indians mothers have been keeping and carrying their babies on cradleboards for many centuries. They say it makes babies feel secure and warm, protect them from harm, and helps their backs grow straight and strong. “ (Wolman, 1970)

The cradleboards were used by mothers until the child learnt to walk. It was used to secure the baby while the parents had to be on foot or work. The cradleboard consists of a rectangular wood panel with a braided fabric on top, in which the child is fixed to stand upright.

“The design of the board prevented injury to the child even if it were to fall over. In many types of cradleboards, a hoop or bow at the top served to protect the infant's head. Some

designs also featured a footrest so that the baby wouldn't fall out through the bottom. Some women even suspended the cradleboard from a tree branch or structure to act as a sort of hammock or swing, providing the child with amusement. “ (Gadacz, 2006)



Photo 13: Beaded Kiowa Indian Cradleboard, Plains, Native American (Indianapolis, 2011)

“Different Indigenous communities had their own designs and styles of cradleboards. For example, the Mohawk tended to make long and narrow cradleboards, while the Seneca preferred a style with side rails. The Oneida made cradleboards using leather strips and wood, while some Ojibwe peoples wrapped their infants in moss bags before securing them to the cradleboard. Most cradleboards were decorated with carvings and paintings. The blankets wrapped around infants were also adorned with beadwork and stitching designs. Some Indigenous peoples crafted designs on the back of the boards and included important images such as clan symbols and other culturally significant emblems and patterns.” (Gadacz, 2006)

Some research papers have examined the effects of cradleboards on children compared to other carrying methods in the Western world. For indigenous peoples, construction of cradleboards symbolizes a way to effectively develop child's spine.

“We may also consider the possibility that isometric exercise is more appropriate for very young infants than isotonic exercise; because of undeveloped motor skills, a very young infant can hardly exert his muscles by picking up or manipulating things- he can, however, strain against his cradle board bindings. Furthermore, it is possible that isometric exercise on a cradle board is not as fatiguing as un- hampered isotonic exercise.” (Hudson, 1966)

3. CONTEMPORARY WESTERN CHILD CARRYING

Based on my conversation with the child carrying expert Kadri Viirand, contemporary child carrying gear is built while putting special care into the well-being of the child and the wearer. Following this mentality, the contemporary child carrying gear market has an abundance of different ergonomic carriers for different activities. Contemporary western child carrying ways are connected to the philosophy of baby wearing and to the historical ways of baby carry. This sometimes means strong influences from Asian and African traditions, for example.

Baby carrying is used when parents choose a hands-free carry option while doing house chores, leaving for work, going for walks or longer hikes – the reasons vary from parent to parent. Mainly they are used to be connected to the child, because while wearing the baby it's much easier to keep an eye on their mood and needs. This is an important matter for mothers and is frequently mentioned in tribes as well. For the connection to work, the carrier must be comfortable for the baby and the wearer. Contemporary children carry options are very numerous, which at times may be hard for the parent and may leave them with opting for a simpler option.

With all the contemporary child carrying gear, it is especially important to look at the usage guides if they are provided by the manufacturer, so the experience is healthy and good for both sides.

Archaic child carrying gear is mostly made from natural materials, but contemporary child carry gear emphasises the lightness on the carrier, so at times synthetic materials are added. (Viirand, 2022)

The rigid or moulded infant carrier is made of polypropylene, a medium-impact plastic. It has the advantages of being lightweight, flexible, and durable. Manufacturers receive the plastic in pellets. Fabrics used to make infant carriers include durable fabric like denim and nylon mesh and webbing for harnesses. All fabrics must be specially treated to meet standards for flammability, but they also must be washable. (Baby Carrier, n.d.)

A very important factor in contemporary child carry gear is for the product to be acknowledged as a “hip healthy” product by the International Hip Dysplasia Institute.

Babywearing is becoming increasingly popular along with the growing interest in attachment parenting and therefore proper position of infant's hips while babywearing is especially important. (Institute, 2022)

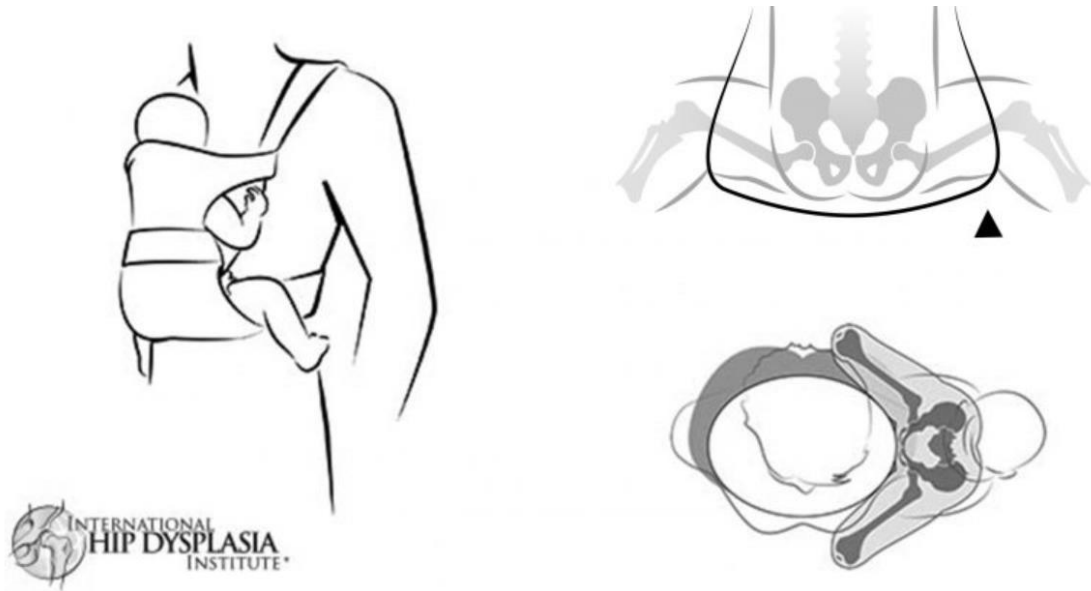


Figure 13: Hip-healthy positions with thighs flexed, supported, and spread apart. (Institute, 2022)

“When proper hip position is maintained while babywearing, there may be substantial benefit for natural hip development. The M-position is a natural clinging position for infants – also known as the Spread-Squat, or Jockey Position. This is recommended as a healthy habit with the thighs spread around the mother’s torso and the hips bent so the knees are slightly higher than the buttocks with the thighs supported.” (Institute, 2022)

“When the infant is carried while facing towards the mother, an infant may grasp the mother’s torso by using the inner thigh muscles. This generates beneficial forces for hip development while the infant is in the M-position. Therefore, the International Hip Dysplasia Institute recommends inward-facing carrying for the first six-months of infancy to promote optimum hip development. While outward-facing may not be harmful, the inward-facing position is acknowledged as hip healthy.” (Institute, 2022)

Following the conversation with the expert Kadri Viirand, the position of the baby is immensely important. The child should face inward while small and vulnerable, because then the child is in view of the mother. Skin to skin contact is also a big part of the contemporary understanding of raising a child. This is a philosophy that starts as soon as the baby is born. This position can be achieved by a simple carrier, such as a wrap. It’s a



Figure 14: Ring Sling (*Shouldering Beauty & Function*, 2006)

simple long piece of fabric that can be wrapped around the body, creating a natural way of carrying a child. There are wraps in various materials on the market today, but mainly they are categorized as stretchy and non-stretchy wraps. The wrap can be tailored for the wearer by tying a knot in the end.

Compared to the wrap, sling carriers have rings to adjust the position of the baby. The concept is similar to the wrap, but one end of the long fabric has rings or hoops for easy adjustability.



Photo 14: Tula Linen Free-to-Grow Baby Carrier (Tula, 2022)

Another type of carriers on the market is structured carriers, which are meant for older babies. These types of carriers have adjustable shoulder straps and a waist belt for good weight distribution, following the principles of backpacks. Structured carriers can be worn through the toddler years, while they can also be used for new-borns if a special infant insert is used, adding to the carrier's longevity. Most of these carriers are front inward facing, but some can be worn with forward facing carry position. Because there are more elements that create structure to this carrier, compared to the sling and wrap, it's heavier and harder to pack.



There are carriers that can also be worn for hiking. These structures are more complex, because usually this type of carrier has extra compartments to carry hiking gear while also carrying a child. This carrier has a frame and hip belt, much like a hiking backpack, which is good for weight distribution while carrying heavy loads. This type of carrier is also good when opening the frame, because the carrier creates a kind of a stool for the child to sit on, while the wearer takes a rest.

Photo 15: Unisex Child Carrier Poco LT (Osprey, 2022)

4. CHILD CARRYING BAG INSPIRED BY ETHNIC CHILD CARRYING GEAR

While today many ergonomic child carrying bags are produced, my goal is not to compete with them but to rather introduce archaic ways of carrying children and bring these examples into the context of the modern world.

4.1. Initial task

The purpose for this thesis is to make a child carrier inspired by different ethnic child carrying gear. The design ideas developed while researching different cultures and meanings behind their child carry traditions.

A very important role in the thesis is for most of the planned materials used to be natural, such as leather, sheep wool, felt, linen, etc. While researching tribal child carry traditions, it's important to observe the use of materials, because modern understanding and preference have moved away from natural materials.

Also, a major part of the thesis is to learn from different cultures in terms of what they value in their child carry spiritually. Some of this information is written out, but most of it comes from observing and getting a certain feeling from decorations and shapes.

Different ways of carrying children may vary based on the age of the child. The aim of this thesis is to create a bag for carrying a child of 60 cm or more of height, who have full control over their head.

4.2. Design process

The first sketches were based on shape experimentation. My initial task was to create a framed child carrier. The following ideas are based on Native American cradleboards.

I was trying to bring cradleboards into the context of modern society and blend them into child carrying gear for hiking.

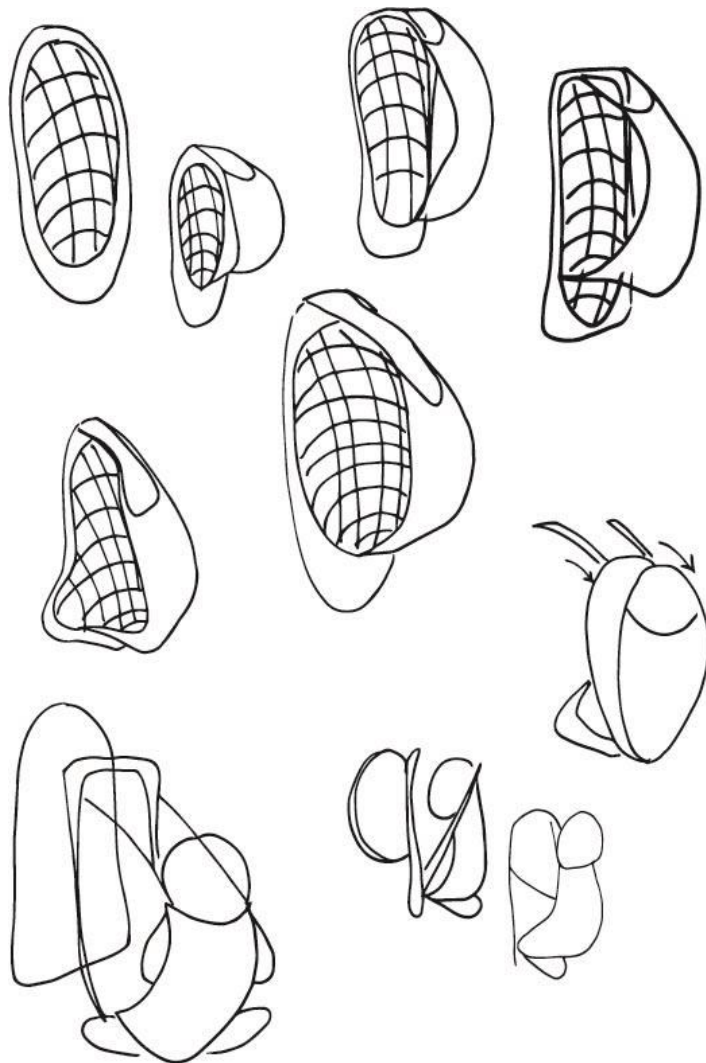


Figure 15: Framed Child Carrier Ideas (Author's Drawing)

Child carrying backpack that is worn two ways – child facing towards the parent and away from the parent.

This represents that children can be worn different ways and therefore acquire different values through being carried by their parents.

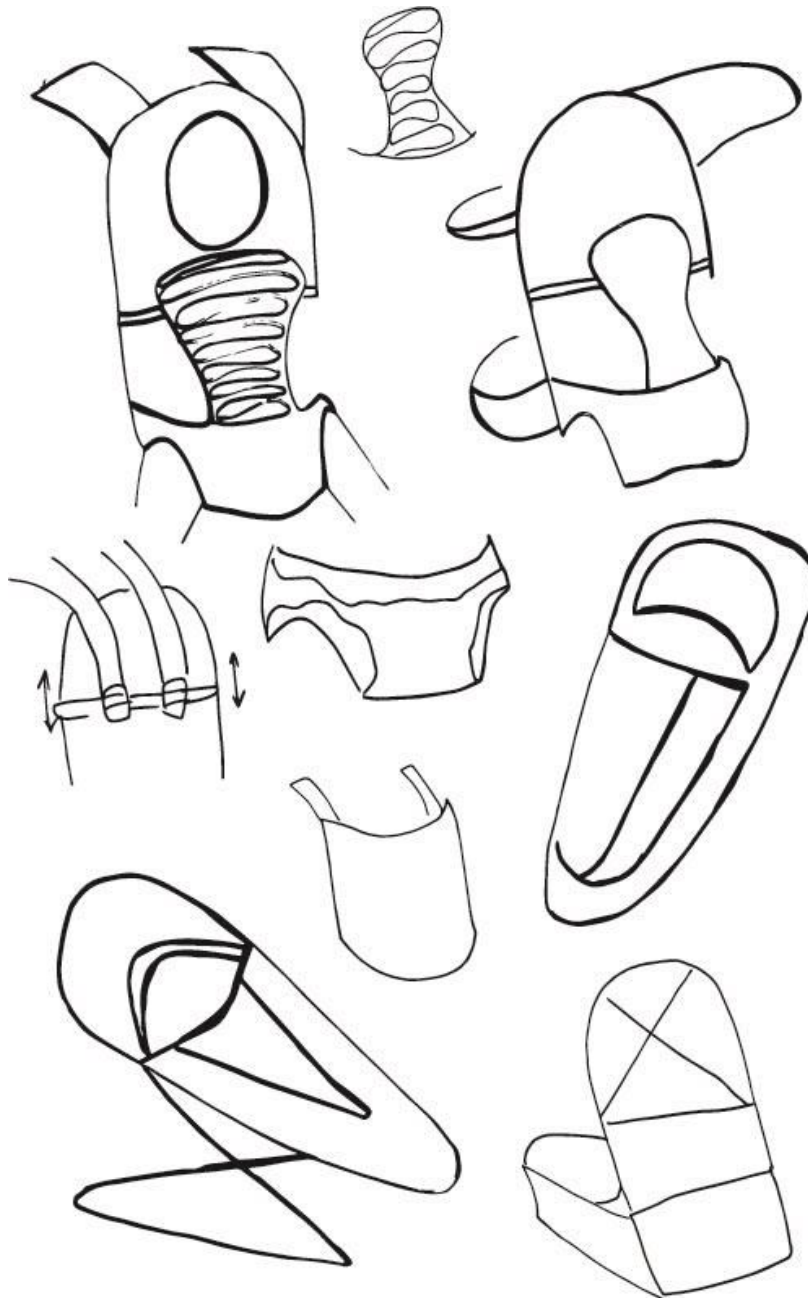
The frame is round and can be opened into two parts. Inside the frame there is braided leather.

After opening the frame, the child can be carried facing outside. This teaches observing the world on their own and not over the parents' shoulder.

The sketching of framed baby carriers opened me to the understanding that the framed concept doesn't fit this thesis. The use of steel or wooden frame adds too much unnecessary weight to the carrier, while using natural leather also adds weight to gear.

The next step meant looking at frames in an unconventional way as seen in the research of framed carriers. This could also refer to a different shape holding structure.

Looking at the birch bark carriers used by the Athabascan peoples, the idea of a wet formed leather carrier emerged.



The concept of this carrier consists of a wet formed leather structure lined with sheep wool.

This carrier is naturally outward facing, but the task was to design it as both inward and outward facing.

The main questions were around with the straps and their practicality.

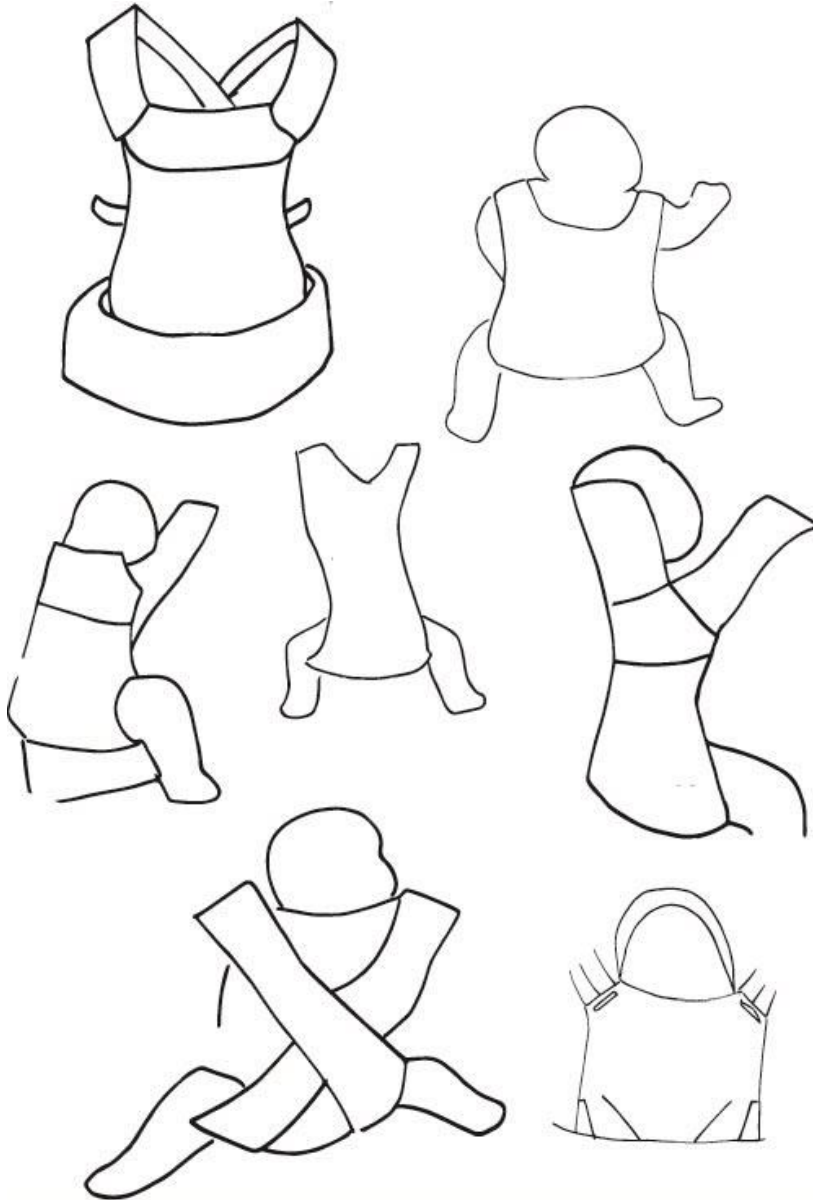
Because the historical research consisted of many cradles, the thought of a static sheep skin cradle also came up as seen in the bottom of the sheet.

Figure 16: Wet Formed Leather Carrier Ideas (Author's Drawing)

Looking deeper into the roots of baby carrying it became more and more important to shift towards simplicity in this task. Such carrier (Figure 16) has a big spiritual meaning,

because of its connection to Native American tribes and their archaic techniques, but at the same time lacks practicality when brought into the context of modern life.

Baby carriers made by ethnic minorities in Asia made a strong impression on me. The right hip position of the child is best achieved by a simple wrap or sling like carrier.



Some traditional carriers also have additional padding on the hips, shoulders or behind child's head.

The question then is about the adjustability for a growing child in the carrier.

In traditional carriers the straps were not adjustable, but rather tying to knots so the carrier would fit properly.

Figure 17: Inspirations from Asian Child Carriers (Author's Drawing)

The length of the shoulder straps, the side straps, the belt strap, and the width of the carrier should ideally be adjustable also.

Child carrying expert Kadri Viirand mentioned that it's very important that a carrier would be washable. She also explained that children that can already hold their head on their own

don't have to have such precise support of the head as a small baby. Instead, they already enjoy looking around them. (Viirand, 2022)

4.3. Concept for the baby carrier

This baby carrier is closely inspired by Native American cradleboards and brought into the context of modern world. The use of materials is made as natural as possible to reference archaic child carrying gear. Leather is a very durable material that retains a lot of information. In the context of this project, it's important to use Estonian roe deer leather that is mostly acknowledged as a residual material. This choice is a way to refer to Native Americans and their use of deer hides in cradleboards and other gear. The leather is perforated to improve breathability, but also to put emphasis on the aesthetic values of the baby carrier.

The panel of the carrier is a way to customise the design to the user. The panel is detachable with cord, which is also a way to adjust the carrier by the size of a child. The panel can be made from a neutral-coloured linen, thicker wool, or leather. It's important to provide the possibility for the user to clean their baby carrier's panel, which is the part that can get stained the easiest. The carrier mostly consists of a leather construction that in a way is a frame for the panel to be attached to. There is a possibility to add to the carrier a sun hood and a washable linen pad for baby's teeth.

Something very important that I wanted to learn from the native peoples was the wish to protect their children with symbols. For some tribes it is especially important to surround their children with certain energy that can keep them from harm. Like for example, when the baby is having trouble falling asleep or feeding, parents want to have a symbol that represents something that they can reflect on when it gets hard.

Protective symbols are like giving a name to a baby, it's a symbol that the parents give to their child that stays with the child until he or she grows old.

Every person on this earth used to be a baby, a vulnerable being that couldn't yet express themselves. Then parents are left wondering what the baby needs, and this may be a strive to communicate in symbols that are put close to the baby's body. Baby carrying becomes a strong metaphor for carrying the child through the journey of creating their own values. In

some tribes these values are different from our western values, but it represents the same spirituality.

The panel design of the carrier was created with a printing technique. It's up to the user to decide if they want to have a personalized panel in some cases or switch to a more neutral choice, for example in linen. The panel can be a place for expression, a space where the collective values of the baby's family can be expressed. The concept of removable panels was inspired by the Miao people who would sometimes have a separate embroidered piece of fabric is attached to the centre of the carrier, which could be removable (Hsin-ying, 2021).

In the future, it's especially important for me to continue the journey of finding a mutual language in which parents can express their values on these baby carrier panels. This would consist of a spiritual process of collecting symbols or letters in which a certain message could be expressed through a universal designed language.

I designed some panels in an attempt to identify with different cultures and therefore create a different set of symbols.

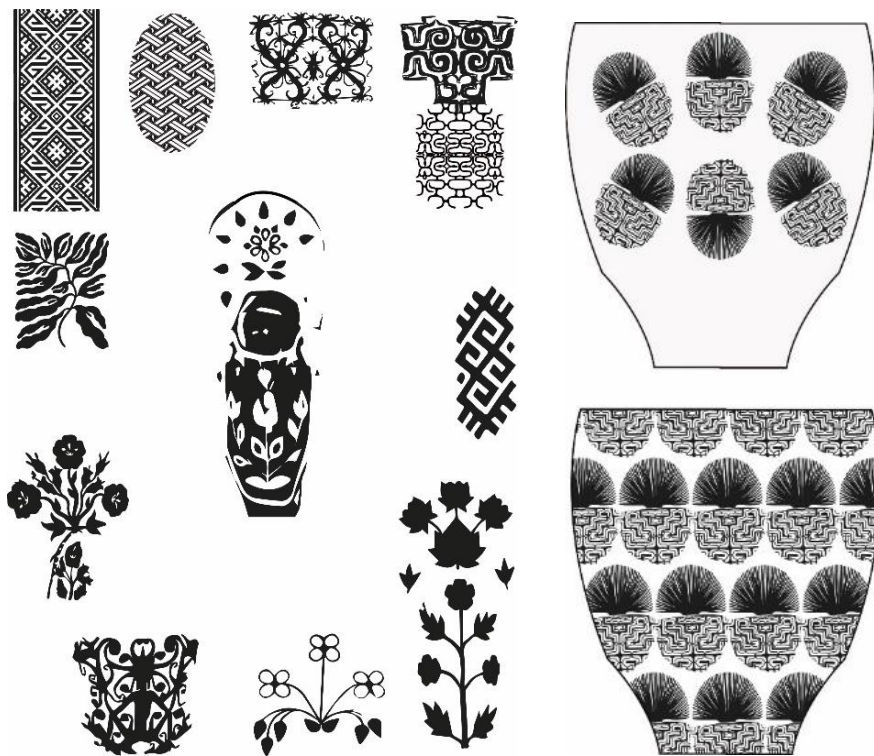


Figure 18: Panel Design Ideas for Baby Carrier (Author's Drawing)

The chosen symbol is something that is dear to me and represents what I would personally use to protect my child spiritually. This is an example of personalization, that reflects in my use of elements from nature to symbolize strenght and love.

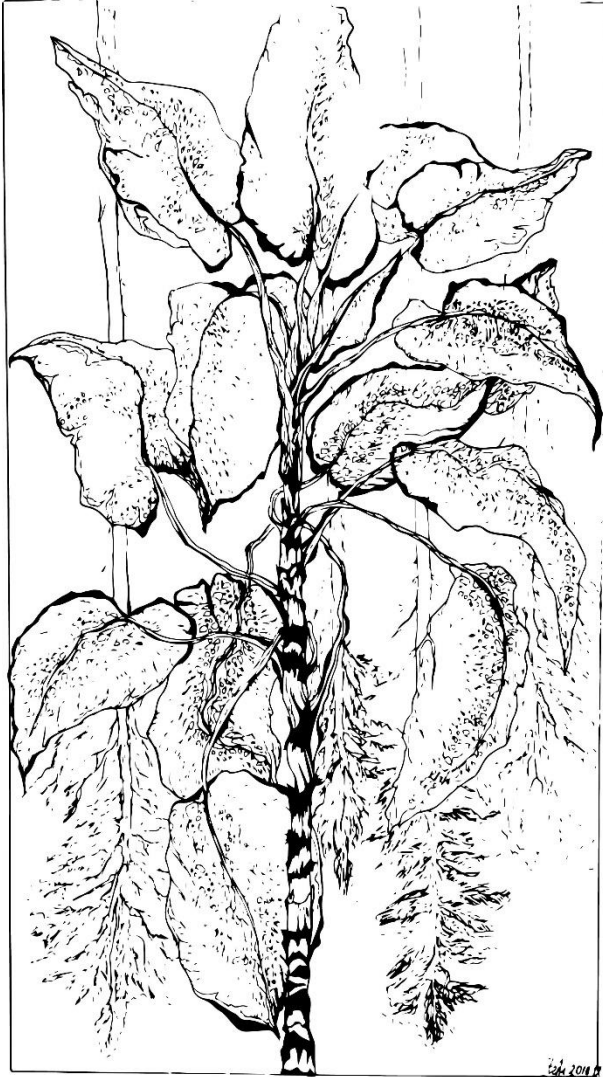


Figure 19: Drawing for Child Carrier Design (Author's Drawing)

4.4. Construction

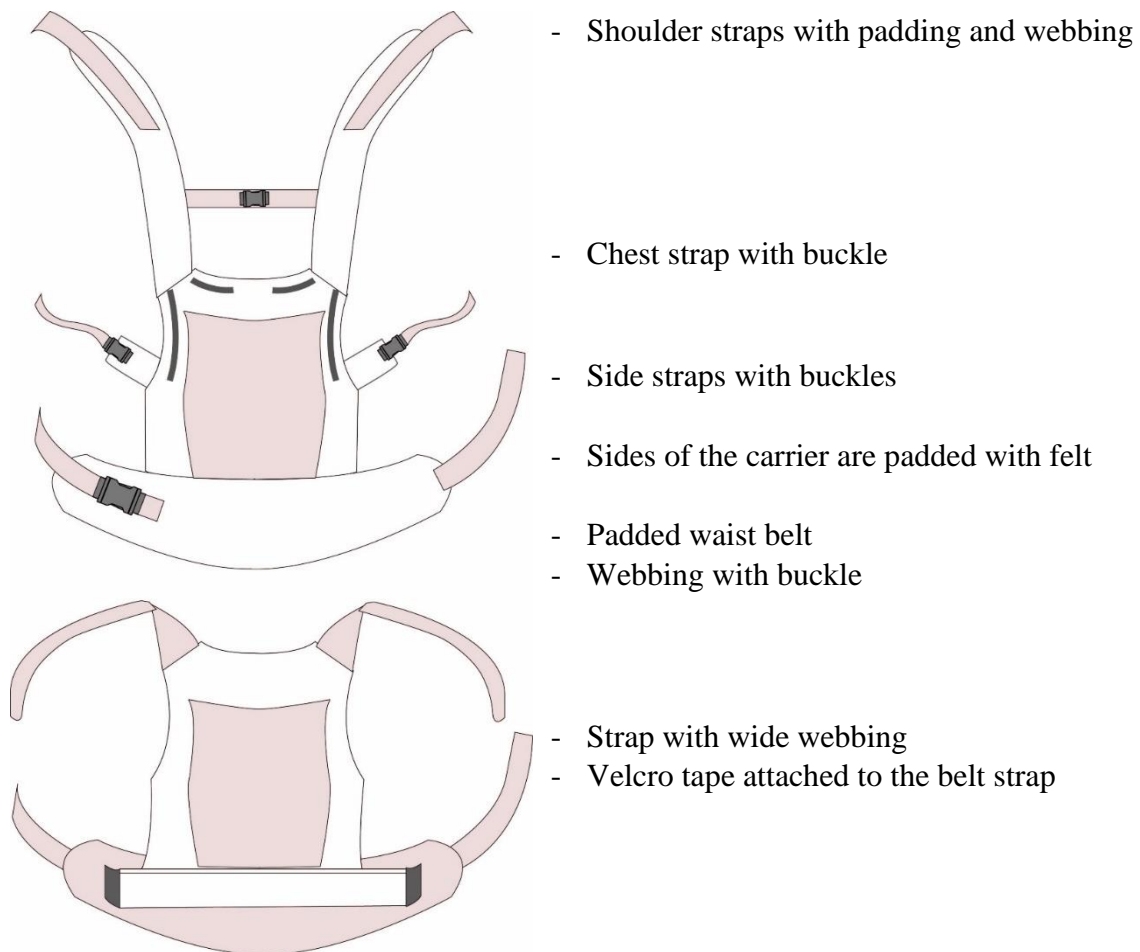
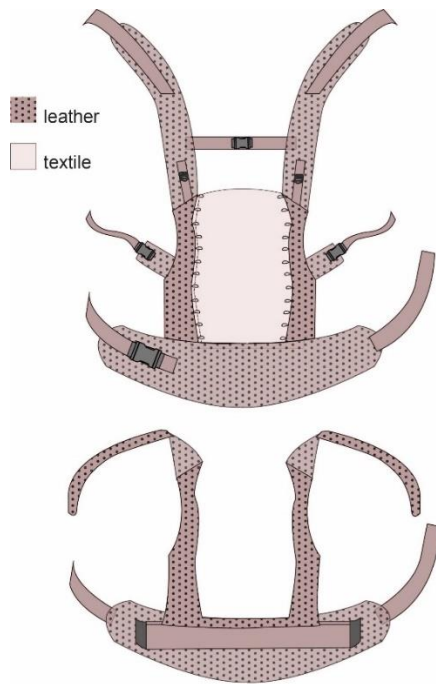


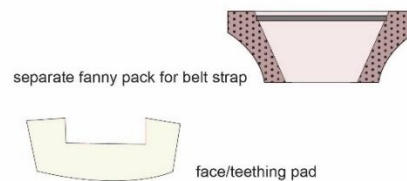
Figure 20: Prototype for Child Carrier

The prototyping process consisted of making two prototypes of the baby carrier. The first carrier was designed by looking at different examples of carriers and trying out different shapes and connections. The first model was successful, because it was tested on three mothers with children of different ages and all of them agreed that it was comfortable. This model was made from scrap materials, mostly from linen, and made adjustable with Velcro tape.



paracord running through loops -
 connecting leather and textile
 fastening for paracord
 magnetic buckle for waist belt 40 mm
 25 mm natural cotton webbing, 40 mm
 magnetic buckle for chest strap 25 mm
 2 sternum adjuster buckles for chest strap
 2 plastic buckles for side straps 25 mm
 elastic for securing fastenings
 40 mm velcro tape both sides 1 m

felt for shoulder straps
 wool for padding
 deer leather
 linen fabric



The second prototype was updated with different design decisions. The leather used was perforated and I also used wool for the padding. The panel was designed to be detachable with a cord. The belt was adjustable with Velcro tape. From trying on this prototype on different mothers I recognized the changes that needed to be made in construction.

The belt was no longer adjustable with Velcro tape, but instead designed with buttons – because this feature didn't have to be used frequently, using synthetic materials for it was not justified for this project. Also, to avoid seams on the waist belt, all the connections were made with thin cotton webbing, including attaching buttons and buckle. The chest strap was also redesigned to be adjustable with buttons, instead of a sternum buckle.

All the padding added was handmade sheep wool felt. This is a reference to the Bai people for whom the waist part of their sling had a special thickening made of felt to make the carrier more comfortable for the wearer and the baby.

SUMMARY

Simple baby carriers may have influenced the development of human species to a great extent, because due to the high energy expenditure of carrying an infant without the use of a sling, the latter would have been one of the first pieces of clothing to be designed (Hughes, 2013).

Climate plays an important role when it comes to the materials and structure of the baby carrier. Generally, in hot climates carriers are usually soft-structured, made from different textiles to keep the baby close for breastfeeding. In colder climates babies can be breastfed less frequently since they require less fluid. Mothers in these cultures are less likely to keep their babies close to their bodies and have the option of placing them in cradles, hammocks, or cradleboards. Cradles and cradleboards could be strapped to animals, or sleds for transportation, or just kept by a tree while the mother was off at work.

Today, baby carriers play an important role for parents, enabling them to protect their children while also being mobile. In some cultures, the symbolism of protecting a child has grown into a distinct self-expression through baby carriers, presenting different elements that can be found in nature and the spiritual world.

Baby carriers made by ethnic minorities in Southwest China offer more than just practical functions, they reflect the traditional workmanship, cultural practices, and overall views of different ethnicities. For example, the Bai people connect their sign of prosperity, the flower, with their baby wearing customs, presenting their beliefs and morals on their children's backs. For the Miao people Baby carriers are considered the second umbilical cord between Miao women and their children. Women tend to embroider patterns of two birds facing the sun, flowers, animals, or other elements from the surrounding nature onto their baby carriers with silk thread to pray for fertility and procreation. For Native Americans the child carriers and the cradleboard consist of different details that all refer to elements from nature or their ancestry.

The use of materials is made as natural as possible to reference ethnic child carrying gear. Leather is a very durable material that that retains a lot of information. In the context of this project, it was important to for me to use Estonian roe deer leather that is mostly

acknowledged as a residual material. This choice is a way to refer to Native Americans and their use of deer hides in cradleboards and other gear. The leather is perforated to improve breathability, but also to put emphasis on the aesthetic values of the baby carrier.

Different ways of carrying children may vary based on the age of the child.

This baby carrier fits children from 62-86 cm of height.

The baby carrier's size is adjustable with buttons on the waist belt, which is entirely connected with thick cotton webbing. The panel of the carrier is a way to customise the design to the user. The panel is detachable with cord. The panel can be made from a neutral-coloured linen, thicker wool, or personalized leather. It's important to provide the possibility for the user to clean their baby carrier's panel, which is the part that can get stained the easiest. The carrier mostly consists of a leather construction that in a way is a frame for the panel to be attached to. There is a possibility to add to the carrier a sun hood and a washable linen pad for baby's teeth.

Something very important that I wanted to learn from the native peoples was the wish to protect their children with symbols. For some tribes it is especially important to surround their children with certain energy that can keep them from harm.

It's up to the user to decide if they want to have a personalized panel in some cases or switch to a more neutral choice, for example in linen. The panel can be a place for expression, a space where the collective values of the baby's family can be expressed. The concept of removable panels was inspired by the Miao people who would sometimes have a separate embroidered piece of fabric is attached to the centre of the carrier, which could be removable (Hsin-ying, 2021).

The chosen symbol is something that is dear to me and represents what I would personally use to protect my child spiritually. This is an example of personalization, that reflects in my use of elements from nature to symbolize strength and love. Handcraft and personalization is an important way to oppose mass consumption.

KOKKUVÕTE

Minu lõputöö “Põlisrahvaste lapse kandmise viisidest inspireeritud lapsekandmiskott” eesmärgiks oli analüüsida erinevate põlisrahvaste lapsekandmise viise, et leida ainulaadseid lahendusi ja tuua need tänapäeva disaini konteksti.

Lõputöö esimene peatükk tutvustab lapsekandmise ajalugu. Algelisel lapsekandmise viisil võis olla määrav roll inimeste evolutsioonis, sest imiku kandmine kandelinata kulutas palju emade energiat, mille tõttu võis see olla üks esimesi rõivaesemeid, mida hakati kiviajal kasutama (Hughes, 2013).

Teine peatükk keskendub lastekandmise traditsioonidele erinevates maailma kultuurides ja kirjeldab lahti, millised näitajad võisid neid mõjutada.

Kliima mängib olulist rolli lapsekandmiskottide materjali paksuses ja ülesehituses.

Üldistatuna on kuumas kliimas kasutusel olnud lapsekandmiskotid pehme struktuuriga ning valmistatud erinevatest tekstiilidest, et hoida last imetamise jaoks rinna lähedal.

Külmemas kliimas võib lapsi imetada harvemini, kuna nad vajavad vähem vedelikku.

Külmema kliimaga kultuurides ei hoia emad oma lapsi enamasti keha lähedal ning neil on võimalus nad panna hällidesse, kinnitades need rändamise ajaks loomade või kelkude külge või pannes töötegemise ajaks puu najale seisma.

Tänapäeval mängivad lapsekandmiskotid vanemate jaoks olulist rolli, võimaldades neil oma lapsi kaasas kanda ja ühtlasi ka kaitsta, olles samal ajal liikuvad. Mõnes kultuuris on lapse kaitsmise eesmärgist välja kasvanud omanäoline eneseväljendus, mis esindab rahvuse pärimust, nende seoseid looduse ja vaimude maailmaga.

Alapeatükkides võrdlen erinevate kultuuride ainulaadseid lapsekandmise traditsioone. Sel põhjusel jagasin lapsekandmiskotid raamiga ja raamita konstruktsioonideks. Need ei ole lapsekandmise traditsioonis kasutusel olevad liigitused, vaid pigem soov üldistada väga mitmekülgeid lapsekandmise kultuure. Esiletõstetud lapsekandmisviisid on jaotatud geograafilise asukoha, mitte riikide järgi.

Edela-Hiina vähemusrühvuste poolt valmistatud lapsekandmiskotid ei ole mitte ainult väga praktilised, vaid peegeldavad traditsioonilise käsitöö tähtsust ja annavad ülevaate selle rahva pärimusest.

Näiteks seob Bai rahvas lapsekandmist oma viljakuse sümboli ehk lillega. Nad kannavad uhkusega pereliikmete käsitööd, esitledes oma uskumusi ja väärtushinnanguid lapsekandmiskoti sees istuvate laste selgadel.

Miao rahvas peab lapsekandmiskotti teiseks nabanööriks Miao naiste ja nende laste vahel. Naised tikivad siidiniidiga lapsekandmiskottidele kahte päikese poole vaatavat lindu, lillede, loomade või teiste loodusega seotud elementide keskel, et palvetada viljakuse poole. Põlisameeriklaste jaoks koosneb *cradleboard* ehk turvahäll erinevatest detailidest, mis kõik viitavad looduse elementidele või nende esivanematele.

Nahk on väga väärtuslik materjal, mis säilitab endas palju informatsiooni. Olen viimastel aastatel tihedalt kokku puutunud lambakasvatusega ja see kogemus on õpetanud, kui oluline on olla teadlik naha päritolust. Loomingulise töö sidumine erinevate põlisrahvaste traditsioonidega on minu jaoks olnud väga oluline, et õppida nende eeskujul loomseid materjale oskuslikult ära kasutama. Oma lapsekandmiskoti loomisel pidasin oluliseks kasutada Eestis kütitud metskitse taimparknahka, pakkudes uut elu materjalile, mis pahatihti ulukiliha kasutamata kõrvalproduktina ära visatakse. Nii väärindab lapsekandmiskott väärtuslikku materjali, nagu teevad seda põlisameeriklased hirvenahkadest *cradleboard* ja muud varustust valmistades. Nahk on perforeeritud, et parandada detailide hingavust ning rõhutada kandekoti esteetilisi väärtusi.

See kott sobib 62-86 cm pikkustele lastele. Lapsekandmiskoti suurus on reguleeritav võõrihma sisse punutud nõõpide abil. Kotti disain võimaldab paneeli vahetada, et need oleksid pestavad. Kasutajal on võimalus valida erinevate paneelide vahel. Oluliste detailide pehmenduseks on kasutatud käsitöövilti. Kotti rihmad on tehtud puuvillasest kangast.

Perforeeritud metskitsenahast konstruktsioon loob raami omaette kunstiteosele, mille eesmärgiks on last spirituaalselt kaitsta. Midagi väga olulist, mida tahtsin põlisrahvastelt õppida, oli soov kaitsta oma lapsi sümbolitega. Enamiku põlisrahvaste jaoks on see väga tähtis, sest see kaitseb tundlikku beebit halva energia eest. Minu loodud lapsekandmiskoti kasutajal on võimalik valida, kas ta soovib isikupärastatud paneeli või valib neutraalsema valiku. Paneel võib olla raamistik, kus saab väljendada perekonna uskumusi.

Eemaldatavate paneelide kontseptsioonis sain inspiratsiooni Miao rahvalt. Neil on lapsekandmiskottide keskele kinnitatud eraldi tikitud kangatükk, mis on eemaldatav (Hsin-ying, 2021). Antud lõputöö disaini raames loodud sümbol on minu jaoks väga isiklik ja näitab, mida ise kasutaksin oma lapse spirituaalseks kaitsmiseks. See on näide isikupärastamisest, mis peegeldab jõudu ja armastust läbi looduse.

Käsitöö ja isikupärastamine on oluline viis omaloodud disainiga vastanduda masstootmisele.

REFERENCES

- Archive, P. o. (2017, January 1). *Negative Number 154386*. Retrieved from pogphotoarchives: <https://pogphotoarchives.tumblr.com/post/155250893448/happy-new-year-postcard-featuring-a-native>
- Archives, U. N. (2009, October 22). *File:Cradleboard.jpg*. Retrieved from Wikipedia: <https://en.wikipedia.org/wiki/File:Cradleboard.jpg#filelinks>
- Baby Carrier*. (n.d.). Retrieved from How Products Are Made: <http://www.madehow.com/Volume-6/Baby-Carrier.html>
- Blog, T. B. (2021, February 18). *Object in Focus: Arctic amautis (mothers' parkas)*. Retrieved from Asgaard Solutions: <https://www.asgaard-solutions.com/object-in-focus-arctic-amautis-mothers-parkas/>
- Cambridge Academic Content Dictionary*. (n.d.). Retrieved from <https://dictionary.cambridge.org/dictionary/english/carry>
- Cheng-chung, T. (2021). The Object of Love: Exploring Traditional Baby Carriers Used by the Miao. *Hmong Studies Journal*, 17.
- Choi, S. (1994). *민족의 사진첩 I [A photo album of the people (vol. 1)]*. Seoul: Seomoondang.
- Collective, M. A. (2021, February 18). *Object in Focus: Arctic amautis (mothers' parkas)*. Retrieved from Asgaard Solutions: <https://www.asgaard-solutions.com/object-in-focus-arctic-amautis-mothers-parkas/>
- Congress, L. o. (n.d.). *Cradle (model) (E032986)*. Retrieved from Alaska Native Collection: https://alaska.si.edu/media.asp?id=498&object_id=62
- Cross, P. A. (2004, January 2). *Lou Jia Zhuang village Photo gallery*. Retrieved from tribal textiles.info: http://www.tribaltextiles.info/Galleries/Lou_Jia_Zhuang/Lou_Jia_Zhuang12.htm
- Cross, P. A. (2004, January 2). *Lou Jia Zhuang village Photo gallery*. Retrieved from tribal textiles.info: http://www.tribaltextiles.info/Galleries/Lou_Jia_Zhuang/Lou_Jia_Zhuang12.htm
- Dayton, T. R. (n.d.). *Baby carrier*. Retrieved from artsmia.org: <https://collections.artsmia.org/art/92333/baby-carrier-miao>
- Doye, E. (2015). Indigenous Beliefs and Practices among the Galos of Arunachal Pradesh.
- Duits, K. (2021, July 27). *1920s: Ainu Mother & Child*. Retrieved from OLD PHOTOS of JAPAN: <https://www.oldphotosjapan.com/photos/646/ainu-mother-child>



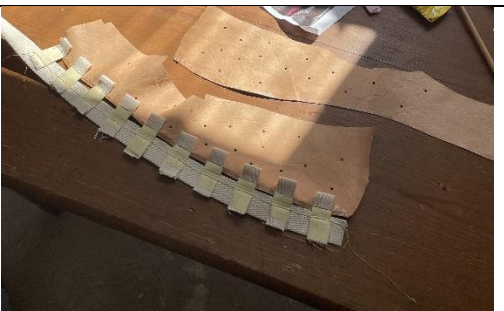


- Duits, K. (2021, July 27). *1920s: Ainu Mother & Child*. Retrieved from OLD PHOTOS of JAPAN: <https://www.oldphotosjapan.com/photos/646/ainu-mother-child>
- Gadacz, R. R. (2006). Cradleboard. *The Canadian Encyclopedia*.
- Gallery, C. P. (2021). *Dayak Baby Carrier A*. Retrieved from Coyotes Paw Gallery Ltd. : <https://coyotespaw.com/Detailed/6.html>
- Giles, J. (2010). Naked Love: The Evolution of Human Hairlessness. *Biological Theory*.
- Han, J., & Lee, E. (2020). Types and Transition of Korean Traditional.
- Harris, S., & Douny, L. (2012). Wrapping and Unwrapping the Living. In S. Harris, & L. Douny, *Wrapping and Unwrapping Material Culture: Archaeological and Anthropological Perspectives* (pp. 43-50). Left Coast Press.
- hipababy. (2018, 10 6). *Vintage Mei Tai/ Meh Dai Part 1*. Retrieved from hipababy.com: <https://www.hipababy.com.au/blog/vintage-mei-tai-meh-dai-part-1#/>
- Hrdy, S. B. (2000). In S. B. Hrdy, *Mother Nature: Maternal Instincts and how They Shape the Human Species* (p. 197). Ballantine Books.
- Hsin-ying, C. (2021). The Object of Love: Exploring Traditional Baby Carriers Used by the Miao People of Huawu Village. *Hmong Studies Journal*.
- Hudson, C. (1966). Isometric Advantages of the Cradleboard: A Hypothesis. *American Anthropologist*, 470-474.
- Hughes, A. (2013). *Our History of Babywearing*. Retrieved from www.wearingyourbabynz.wordpress.com: <https://wearingyourbabynz.wordpress.com/our-history-of-babywearing/>
- Indianapolis, T. C. (2011, March 8). *Kiowa cradle board*. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/File:The_Childrens_Museum_of_Indianapolis_-_Kiowa_cradle_board_-_overall.jpg
- Institute, T. I. (2022). *Baby wearing*. Retrieved from Hip Dysplasia: <https://hipdysplasia.org/baby-wearing/>
- Institution, S. (2010). *tl'otet "baby carrier"*. Retrieved from Alaska Native Collection: <https://alaska.si.edu/record.asp?id=62>
- Kornilova, A. (2010). *Индия. Страна контрастов*. Retrieved from Mama.tomsk.ru: <https://mama.tomsk.ru/babywearing/ethnic/india.html>
- Kornilova, A. (2010). *Камбоджа: крама*. Retrieved from Mama.tomsk.ru: <https://mama.tomsk.ru/babywearing/ethnic/cambodia.html>
- Kornilova, A. (2010). *Китай и Вьетнам: мей-тай, бей-бей и хмонг-слинг*. Retrieved from Mama.tomsk.ru: <https://mama.tomsk.ru/babywearing/ethnic/china1.html>
- Kornilova, A. (2010). *Китай: слинги этнических меньшинств*. Retrieved from Mama.tomsk.ru: <https://mama.tomsk.ru/babywearing/ethnic/china2.html>

- Kornilova, A. (2010). *Япония: из глубины тысячелетий*. Retrieved from Mama.tomsk.ru: <https://mama.tomsk.ru/babywearing/ethnic/japan1.html>
- LaDuke, B. (1981). Traditional Women Artists in Borneo, Indonesia and India . *Woman's Art Journal*, 17.
- Lozoff, B. (1983). BIRTH AND 'BONDING' IN NON-INDUSTRIAL SOCIETIES. *Developmental Medicine & Child Neurology*, 595-600.
- Museum, B. (2009). *사진엽서로 보는 근대 풍경: 7 풍속 조선인 [The looks of modern Korea from post cards: Custom· Korean (vol. 7)]*. Seoul: Minsokwon.
- Osprey, E. (2022). *Poco LT*. Retrieved from Osprey Europe: https://www.ospreyeurope.com/shop/gb_en/osprey-poco-lt-2021
- Puryanto, B. (2012, September 22). *Ba' (baby carriers) Dayak Kenyah*. Retrieved from sukubangsadayak.blogspot: <http://sukubangsadayak.blogspot.com/2012/09/ba-baby-carriers-dayak-kenyah.html>
- Redwoods, C. S. (Director). (2020). *Yurok Baby Basket* [Motion Picture].
- Shouldering Beauty & Function, E. (2006). *Ring Sling: Top Tips and Instructional Videos*. Retrieved from Sakura Bloom: <https://sakurabloom.com/pages/ring-sling>
- Solter, A. (2001). *The aware baby*. Shining star press.
- Teder, Ü. (1998). Inimelu kesksed sündmused. rmt: A. Viires, & E. Vunder, *Eesti rahvakultuur* (lk 312).
- Transcript, A. (Director). (2020). *Packing babies, 2017* [Motion Picture].
- Trinidad, M. (n.d.). *Baby Baskets*. Retrieved from Trinidad Museum: <http://www.trinidadmuseum.org/exhibits/current/baby-baskets/>
- Tula, B. (2022). *Tula Linen Free-to-Grow Baby Carrier*. Retrieved from Baby Tula EU: <https://babytula.eu/collections/free-to-grow-baby-carriers/products/sand-linen-free-to-grow>
- Voorand, K. (2022, 4 4). Baby carriers. (S. Vissel, Interviewer)
- Whittier, H. L., & Whittier, P. H. (1988). Baby Carriers. A Link Between Social and Spiritual Values Among the Kenyah Dayak of Borneo. *Expedition Magazine* 30.1.
- Wolman, C. S. (1970). The Cradleboard of the Western Indians: A Baby-tending Device of Cultural Importance. *Clinical Pediatrics*, 306-308.

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APPENDIXES

APPENDIX A. BABY CARRIER WORK STAGES

<p>The constructing of the bag started with the sewing of the waist belt. The seam was turned inside out and then finished by hand with an invisible stitch. The perforation was made with no measuring to create a more natural look. Inside of the waist belt, there is 1 cm thick handmade felt.</p>	
<p>First, I sewed horizontal lines through the waist belt, but that was very hard because of the thickness of materials together. Then I decided that on the next waist belt, I will not make seams, but find a different way for attaching, therefore creating idea for using webbing.</p>	
<p>The side parts consisted of two pieces mirroring each other, one of the parts had more seam allowance to be turned on the first piece. The patterns were all further designed after making the second prototype and fixing some technical issues. The loops for webbing were attached first and then turned inside out.</p>	
<p>The side piece with padding for the buckle of the side connection was fit inside the construction. I used tape to fix the pieces together first. The webbing was fixed inside the whole construction to keep it stronger and create a "frame". These webbings are meant for the shoulder and side buckles. Inside the sidepiece there is felt, which made the seams more difficult.</p>	
<p>The shoulder straps are designed to start after the webbing with adjustable buckle. This meant designing a shorter shoulder strap but easily adjustable. The seams were made similarly to the waistbelt, but because of the felt padding, the turning inside out and sewing by hand was much harder.</p>	

In the picture there is a clear difference between two waist belts, which the more minimalistic made it to the project. I made circle-shaped seams by hand to the side pieces to make the construction even stronger.



Sampling different materials was a big part of this project. In the pictures there is linen, wool, different webbing, cord and most importantly deer leather.



I cut the panel design using graphics techniques.



The different buckles were ordered from Slovenia, but sadly they got lost in the post. Instead, I used buckles from army wear and coloured them to be more natural.



The print was made on wet leather and later waxed afterward. The panel was sewed exactly as the one from linen, but with thinner cotton cord. Inside of the panel there is linen, for the deer leather to stretch less.



The panels were sewed with attaching webbing inside out. Also, the teeth pad was made from natural and soft white linen.

The sun hood has webbing from leather that attaches to the loops on the shoulder straps.



The piece for adjusting the waist belt was made from linen to be more breathable, but the buttonholes were sewed to a leather strap. This piece had to be connected to the side pieces of the carrier with cotton webbing running through it. There were also hoops attached to the lower part of the strap to get the cord through.



The loops to attach the chest strap were made by first attaching the thin webbing to the thicker one. The loops were measured exactly to fit the 3 cm button. The webbing was then attached to the shoulder strap with seams. The chest strap was made with a leather webbing cut exactly for the button. The chest strap is therefore made very easily adjustable.



The waist belt is a complex construction, that is held together by binding thin cotton webbing through holes that create a pattern with the perforated leather. There are 6 buttons attached and are important for adjusting the baby carrier's size. Even the buckles are attached with webbing, creating a strong construction or frame for the panels.



The baby carrier when almost all the elements came together. The ends of the cord can be tied into a knot after attaching.



APPENDIX B. PROTOTYPES



Prototype 1. Models Katre; Baby's age 18 months



Prototype 1. Models Heleene; Baby's age 7 months



Prototype 1. Models Heleene; Baby

**APPENDIX C. PHOTOS OF THE BABY CARRIER INSPIRED BY
ETHNIC CHILD CARRYING PRACTICES**



Foto 1: Models Kärt Linnamäe and Pääru (age 16 months), Photographer Ekvilibrist



Foto 2: Models Kärt Linnamäe and Pääru (age 16 months), Photographer Ekvilibrist



Foto 3: Waist belt, Models Gerli Mõttus and Miira (age 12 months), Photographer Ekvilibrist



Foto 4: Models Gerli Mõttus and Miira (age 12 months), Photographer Ekvilibrist



Foto 5: Models Gerli Mõttus and Miira (age 12 months), Photographer Ekvilibrist



Foto 6: Details of baby carrier, Models Gerli Mõttus, Taaniel Tambet and Miira, Photographer Ekvilibrist



Foto 7: Models Heleene Tambet and Lumi (age 7 month), Photographer Ekvilibrist



Foto 8: Details of baby carrier, Models Heleene Tambet and Lumi (age 7 month), Photographer Ekvilibrist



Foto 9: Baby carrier hand printed panel, Photographer Ekvilibrist



Foto 10: Details of baby carrier, Photographer Ekvilibrist



Foto 11: Models Heleene Tambet and Lumi (age 7 month), Photographer Ekvilibrist