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Clothing

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Synonyms

Clothing refers to items worn to cover the body; terms such as apparel are synonymous. Clothing however must be distinguished from terms such as dress, costume, adornment and fashion which embrace a wider range of items and activities such as body painting and cosmetics.

Definition

The origin of clothing reflects the loss of hair cover in hominin evolution and the resulting vulnerability of humans to cold stress during the global climate changes of the ice ages. Alternative theories about the origin of clothes suggest a universal human inclination to cover the naked body for reasons of decorative display or modesty, yet these motives are not corroborated by ethnographic data from recent naked hunter-gatherers. Despite an absence of actual clothing remains due to perishability, a thermal origin is supported also by archaeological evidence which links the development of clothing-related technologies in prehistory to past glacial cycles and environmental conditions. Thermal physiology was similarly responsible for the advent of textile garments after the last ice age in the context of global warming, as woven fabrics provided enhanced permeability to perspiration in the warmer and more humid conditions. Demand for textile fibers was a key aspect of the agricultural revolution, encouraging the domestication of plants and animals. While biological factors were paramount with the origin of clothing, psychosocial factors such as modesty and the rise of fashion as the basis of habitual cover had a profound influence on social evolution and the emergence of modern civilized life.

Introduction

Clothes are what most visibly set humans apart from all other species. In fact no other technology plays such an intimate part in the everyday lives of modern humans. Yet of all our major inventions, the least is known about the origin of clothes. One reason is that clothes do not survive for long in the archaeological record. Another factor contributing to an academic neglect is a gender bias: Clothes are generally considered more a feminine concern.

Clothing originated as an adaptive behavioral response to biological nakedness which became a thermal liability during the Pleistocene ice ages. Findings from climatology and thermal physiology can reveal the prehistoric need for clothes as

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insulation from cold. While no garments have survived, archaeology yields evidence for clothing-related technologies in the paleolithic era (especially tailored clothes). The invention and improvement of clothes as protection from worsening weather conditions led to major technological innovations – toolkits with stone scrapers, blades, and bone needles. These technologies allowed hominins to conquer most of the world's environments and to finally enter the Americas from Siberia. Clothing was the most advanced technology developed by hominins in prehistory – and it is the only paleolithic invention that people still carry with them in the contemporary world.

Climate change was again relevant with clothes after the Pleistocene. Global warming made people change their clothes in many regions: They changed from wearing animal skins to woven fabrics. Textiles were a technological solution to the physiological problem posed by sweating in warmer and more humid conditions. This effectively put the cloth into clothing, and production of textiles was a feature of neolithic agriculture. Clothes also acquired psychological and social functions relating to personal decoration and display, and also a new need to cover the naked body out of modesty. For these reasons, clothing finally came into fashion.

Evolution of Clothing

The oldest remains of clothing recovered by archaeologists are a few cloth fragments that date from 12,000 years ago at the end of the last ice age. However, clothing was invented much earlier, beginning perhaps a million years ago, and its prehistoric development was limited to populations in cool environments. Yet the habitual use of clothes is now almost a permanent and universal behavioral trait of humans: There is probably only one small group of Andaman Islanders in the Bay of Bengal who continue to live without any clothes. However, until recent historical times, many groups in warm climates wore little or no clothes on a regular basis. And while clothing now serves many psychological and social purposes, its origins reflect adaptive functions in the context of past climate change.

Origin Theories

The leading theories can be classified into three causes: display, modesty, and protection from cold. The first two suggest a universal human tendency to adopt clothes, which is refuted by ethnographic evidence from hunter-gatherer societies. Among many African and Australian groups, no garments of any kind were worn. For purposes of display and decoration, the naked body was adorned with paints, beads, feathers, tattoos, and scars (cicatrices). Early European explorers were often shocked by a complete absence of any need to cover the body for reasons of shame or modesty. Even in cold regions like Tasmania or Tierra del Fuego on the southern tip of South America, people used garments to ward off the cold but otherwise they were naked (Gilligan 2008) – much to the astonishment of Darwin when he encountered the Fuegans in 1832 (Darwin 1839).

Protection from cold is the only motive consistent with all available data. A thermal model is supported by archaeological evidence despite a paucity of prehistoric clothing remains, and it allows the evolution of clothing to be delineated in considerable detail.

Scientific Evidence

The main sources of evidence are:

Ethnography – forager groups like Australian Aborigines, Andaman Islanders, Fuegans, and Bushmen (generally designated now as San peoples) were routinely naked prior to external contacts. Where clothes were worn, it was for thermal protection. In the case of the Bushmen, they had contacts with pastoralist groups in recent millennia and are often shown wearing loincloths, although early descriptions mention only the traditional antelope cape (kaross) worn in cool weather, used also as a rug and blanket (e.g., Sparrman 1785).

Biology – paleoanthropology can inform about the evolution of fur loss in hominins (Jablonski 2010), while thermal physiology delineates

human cold tolerance and the physiology of clothing (Parsons 2014).

Climate science – paleoenvironmental research documents temperature regimes during the Pleistocene epoch from 2.6 million years ago to 12,000 years ago (Bradley 2015).

Archaeology – this encompasses data about the presence of hominins in cooler environments, technologies related to the manufacture of clothing, and artworks depicting clothes (Gilligan 2010).

Entomology – genetic studies of clothing lice can estimate when humans first adopted clothes, though the results relate more to the routine use of garments. Dates range between 84,000 and 107,000 years ago during the last ice age, or possibly as early as 170,000 years ago during the previous glacial cycle (Reed et al. 2015).

Prehistoric Technology

Hominins began to spread beyond Africa early in the Pleistocene, but they retreated from middle latitudes during the glacial episodes. From 800,000 years ago, *Homo erectus* was present in northern China throughout a couple of interglacials which also spanned a mild glacial period; clothing-related stone tools (scrapers and awls) were found at the cave home of Peking Man. From 400,000 years ago, hominins began to occupy northern middle latitudes during cooler phases and their toolkits contain more hide-scrapers, notably in the Mousterian industries of Neanderthals.

Homo sapiens evolved 200,000 years ago, but the earliest evidence for their presence outside Africa is 80,000 years ago in southern China. Signs of improved clothing technology appear in southern Africa during a cold phase 75,000 years ago, with stone blade tools and needles made from animal bones, which may have been used to make tailored garments. Eyed needles were invented as the global climate cooled again after 45,000 years ago, appearing first in southern Russia 40,000 years ago (Golovanova et al. 2010) and subsequently in northern China from 30,000 years ago (Zhang et al. 2010). Eyed needles appear a little later in Western Europe where conditions were milder; these quintessential clothing tools were common in the Solutrean industry around 22,000 years ago during the Last Glacial Maximum (LGM).

Simple and complex clothing refers to a distinction based on the thermal effectiveness of clothes and the technologies involved. Simple clothing has a single layer and is loosely draped, while complex clothing is fitted (or tailored) and can have multiple layers for added insulation. In terms of paleolithic technology, simple clothing requires scraper tools, whereas complex clothing also requires cutting tools (blades) and hide-piercing implements (awls and needles).

The archaeological evidence indicates simple clothing was invented multiple times by various hominin species from nearly a million years ago, whereas complex clothing was restricted to modern humans during the last glacial cycle. Only with complex clothes that fully covered the body were decorative functions transferred onto garments, and the use of clothing then became more habitual. At the Russian site of Sungir near Moscow which dates to 26,000 years ago, two human skeletons were covered with thousands of beads made from the tusk ivory of mammoths. These beads were evidently sewn onto garments and arranged in two layers, documenting the presence of underwear (Bader and Bader 2000).

Textiles began to replace animal skins as the preferred material for clothes from the end of the last ice age 12,000 years ago, based on thermal properties of woven fabric which permit perspiration to escape more easily. Fabric was a practical and comfortable material for people who continued to use clothes in the warmer and more humid weather conditions. Production of fibers for textile clothes featured prominently in early agricultural communities (with wool, linen and cotton), which may have been an impetus for the transition to agriculture (Gilligan 2007). The oldest preserved woven fabrics were made from hemp-like fibers 12,000 years ago in Peru (Jolie et al. 2011), followed by linen fragments in Turkey around 9,000 years old (Hodder 2013).

Psychology

The evolution of clothing reflects the influence of biology and climate in prehistory, but psychological and social aspects have become more important during the historical epoch. Psychosocial factors are relevant to why people continue to wear clothes and also to how clothing has shaped modern human behavior and social evolution.

Motives for Wearing Clothes

Humans now take the thermal function of clothes for granted: People can choose warm apparel from their home wardrobes based on weather forecasts and purchase new garments in local shops based on the latest fashions. The main functions in the contemporary world are the contradictory motives of adornment and modesty: display and cover.

Fashion is almost synonymous with clothing. In sociology and dress studies, the role of clothing in adjusting appearance is paramount. However, a focus on clothes as dress can distract from another fundamental function in the modern world: the paradox of needing to conceal the naked body from view.

Modesty likely began as a psychological consequence of wearing clothes, although its origins are shrouded in mystery. Initially it would have involved behavioral learning processes, with a combination of classical (Pavlovian) and instrumental (operant) conditioning. Nakedness was associated with exposure and vulnerability, and social reinforcement of covering behavior involved both rewards and punishment. The result was not only a new need for clothes as personal and social display but a sense of inadequacy and shame about lack of cover, transmitted to offspring as an independent psychosocial phenomenon. More intriguing, the social requirement for cover mandates concealment of sexual organs as a minimum.

Sexual shame and guilt likely emerged as a consequence of clothing, beginning with modesty. The initial psychological processes again would have been behavioral: Sexual behavior is associated with the naked body, especially the unclad skin surface. Once nakedness was sanctioned, sexuality became more problematic for society and sexual pleasure became socially subversive. Sexual display was increasingly transferred to clothes: Ironically, the main material instrument of sexual repression serves as a major means of sexual attraction.

Sexual repression happens within both the individual and society, and the crucial transition occurs when sexual restraint becomes useful and productive. This involves psychodynamic processes, notably sublimation (e.g., Valdrè 2014). The sexual drive is harnessed and transformed (often beyond recognition), providing a seemingly infinite and renewable source of energy to enhance cultural and intellectual activities and also to form intimate material attachments and promote technological innovation. Societies come to depend culturally and economically on these processes, and in this manner the modesty function of clothing becomes indispensable.

Modesty was established by the end of the last ice age among descendants of people who had developed complex clothes. Archaeological evidence for modesty and sexual shame appears in artworks that depict people wearing garments covering the genitalia. One of the earliest is found at the 11,000-year-old megalithic site of Göbekli Tepe in Turkey: Images are carved on the stone pillars which show humans wearing loincloths. These were made from fox pelts, with fox bones among the commonest faunal remains at the site (Peters and Schmidt 2004).

Effects of Wearing Clothes

As cover and enclosure of the body and an agent for controlling sexuality, clothing has immense psychological ramifications.

Enclosure becomes generalized as a preference to construct external enclosures, separating the human world from the natural environment. One postglacial trend was sedentism, the shift from a mobile lifestyle to living in permanent settlements. Sedentism represents a withdrawal from open engagement with nature and it reflects the emergence of a dualistic mentality. The stone walls and enclosures of the early villages (like Çatalhöyük in Turkey) act as a form of externalized clothing, symbolic of a domestication process whereby humans as well as wild plants and

animals were tamed and controlled (Hodder 1990; Ingold 2008).

Cover likewise is generalized as perception of the world as covered. The workings of nature are no longer apparent and immediately accessible to the senses; instead, they are perceived as concealed and accessible through a process of uncovering.

Science is the most productive expression of this covered perception of reality: an intellectualized desire to discover (dis-cover). Mind-body dualism and the development of geometry and mathematics are further products of a separation of the mind from the physicality of bodily existence in the present. Geometry and mathematics emerge as pure abstractions necessarily devoid of any temporal or sensual connection, as does the written word and the symbolic potential of language (Derrida 1974; Husserl 1939).

Materialism is another psychological trait accentuated among people who routinely wear clothes. In becoming intimately attached to clothes as a fabricated material, a personal attachment is generalized to other materials and especially artificial fabricated objects. This spurs technological innovation and promotes an economic dependence on the production of material goods, visible in modern market economies and with the rise of consumerism. Conversely, naked foragers were distinctly disinterested in material possessions (e.g., Dampier 1729).

Human aggression and warfare is amenable to analysis as a psychological by-product of clothing. One of the challenges for evolutionary psychology is to explain why a taste for violence appears to be natural for humans. Rather than fabricating adaptive scenarios for this maladaptive trait, it can be understood as an outcome of the control and suppression of sexuality that accompanies clothing. Where sexuality becomes concealed and largely taboo, violence is sexualized through association as an evil or forbidden form of physical contact. As with all sublimated pursuits, it then acquires a capacity to deliver ostensibly nonsexual gratification, which has implications also for the philosophical – and psychological – problem of evil. This scenario can accommodate the troubling attraction of violence and the pleasure (and entertainment value) of war, without the ethological contradictions involved in portraying it as a vestige of humanity's animal nature. Moreover, it is compatible with the ethnographic and archaeological data, which point to an absence of warfare in naked forager societies and its relatively late prehistoric development among complex (particularly agricultural) communities after the end of the last ice age (Fry 2013; Pardoe 2014).

Social Evolution

The transition from egalitarian to hierarchical social structures based on wealth accumulation and inequality of access to resources is one of the major recent trends in human evolution. Its causes remain unclear and explaining its origins represents one of the great challenges for archaeology.

Hunter-Gatherers and Nakedness

Egalitarian social relations are a hallmark of naked forager societies. Sharing of food and material resources was actively promoted and defended, while any attempts by individuals to acquire or accumulate material wealth were actively discouraged and prevented. Egalitarian principles and group altruism probably evolved in hominins for adaptive reasons (Boehm 2012). Nonegalitarian societies emerged quite late – after the end of the last ice age – and only where clothes were present.

The routine presence of clothes acts as a barrier to casual tactile and sensual contacts between people. Among other primates, these tactile connections are almost constant from birth and serve to maintain social cohesion; they form the basis of connections between individuals and function as the main means of conflict resolution. In humans, cultural evolution is accompanied by a marked reduction in skin contact, whereas among egalitarian hunter-gatherers where little or no clothing is worn, tactile skin contact occurs almost constantly in infancy and childhood (Hewlett 2014).

Grooming and frequent tactile (including sexual) contacts in bonobos serve a key role in

maintaining egalitarian group structure and forestalling violence (de Waal 1997). Once clothing is interposed between people, it prevents these routine skin contacts and discourages sexual encounters. Clothing thus sabotages the sensual basis of egalitarian social relations and promotes materialism and aggression, contributing to the collapse of egalitarianism.

Clothing and Social Complexity

The evolution of complexity has both a negative side (loss of naked egalitarianism) and a positive side whereby sexual repression and sublimation promote cultural development, culminating in the emergence of civilization. Freud saw repression and sublimation of the sexual drive as intrinsic to civilization (Freud 1930) although he neglected clothing, mentioning only how concealment of the body might enhance curiosity and the sublimation of sexuality into artistic pursuits. However, insofar as cover causes modesty and sexual guilt, clothing may play a more central role.

Cross-cultural research shows that clothing, modesty, and sexual restrictiveness correlate with various indices of complexity on a global scale (e.g., Murdock 1964; Stephens 1972). The civilizing potential of sexual repression and sublimation is underlined by the fact that the sexual drive is especially strong in humans: By any standards, *H. sapiens* is comparatively hypersexual (Ryan and Jethá 2010).

Conclusion

Clothing is a uniquely human innovation and its evolution reflects adaptation to unusual selection pressures. Biological nakedness may have first evolved as an adaptation to heat stress among bipedal ancestors, but it subsequently posed a survival challenge for hominins due to cold stress during the Pleistocene ice ages. Among various theories about the origin of clothing, those that claim a role for decoration or modesty as initial motives can be refuted by ethnographic evidence, whereas a thermal model is consistent with all available lines of evidence, including recent genetic studies of human clothing lice.

While there exists no direct archaeological evidence of prehistoric clothes in the Pleistocene, paleoenvironmental and physiological data can be harnessed to infer its development based on minimum thresholds of cold tolerance and the thermal properties of clothing. Archaeological evidence indicates that as hominins began to occupy cooler environments over the last million years, they developed technologies linked to the manufacture of clothing. These tools include stone hide-scrapers and blades for cutting hides, as well as awls and needles for sewing which first appeared during cold phases of the last glacial cycle from 100,000 years ago. Clothing was the most complex invention of the paleolithic era, and it promoted technological advances associated with the middle and upper paleolithic transitions.

The first clothes were simple loose garments which would have been discarded when no longer needed for warmth. The invention of fitted garments and multilayer assemblages – complex clothing – was restricted to *H. sapiens*. Complex clothing differed from simple clothing in that once more complex clothing was adopted, it acquired nonthermal functions that encouraged the continued use of clothing after the end of the Pleistocene.

The postglacial onset of warm and more humid weather led to a major change in clothing material: the shift from using animal skins to woven fabrics. Textile garments became more common from the beginning of the Holocene epoch 12,000 years ago, and an increasing demand for textile fibers played a role in the transition to agriculture.

Modesty emerged as a psychological consequence of routinely covering the human body, and along with the transfer of decorative functions from the skin surface to using the surface of clothes for display purposes, modesty became a psychological motive for wearing clothes. Clothing is implicated also in the development of sexual shame and repression as uniquely human phenomena.

Sublimation of the sexual drive was a fundamental psychological process in social evolution and the emergence of civilization. The role of clothing in causing modesty and sexual shame thus makes it a key factor, but its psychological

effects extend further and contribute to a host of modern psychosocial traits. These include separation from nature, construction of an enclosed artificial environment, the scientific mentality and the propensity for violence and warfare that dominates the historical era. In more ways than one, clothing is the fabric of civilized life.

Cross-References

▶ Clothing: To Afford Protection Against Climate and Weather

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