




Review Article

# Dress or cover? The origin and meaning of clothing

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## Abstract

Clothing is a unique human innovation which is now virtually ubiquitous in societies around the world. Traditionally, debate about the origin of clothing has considered three main causes: modesty, adornment, and protection from cold. Recent argument has tended to become polarized between the arts and sciences: scientific evidence favours protection from cold, whereas an alternative view regards clothing necessarily as display, or dress. Dressing in the broad sense is an intrinsic aspect of human existence. If clothing is always dress, its origins cannot be purely pragmatic. The dispute stems in part from confusion about definitions, compounded in some instances by a philosophical scepticism about science. These issues are illustrated here by critically reviewing the works of Thomas Carlyle, Roland Barthes, and Michael Carter, whose seminal studies on clothing have been influential in the field of dress studies.

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# Keywords

Clothing; Dress studies; Fashion; Social sciences; Art history

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Ian Gilligan is the sole author responsible for this paper.

## 1. Introduction

Why did humans invent clothes? The question has long attracted interest from psychologists, philosophers, theologians, biologists, anthropologists and historians of dress and art. Opinion tends to be divided between, on the one hand, the physical sciences and on the other, the arts and humanities. Throughout historical times and in the world today, clothes serve a wide range of functions that stretch across the arts and sciences. People wear clothes to look fashionable, to express their personal and social identities and roles, to appear sexually attractive or seductive, to keep warm, and to cover themselves due to a sense of modesty, or shame about nakedness. When it comes to the question of origins, clothing seems to be torn between the humanities and the hard sciences, caught in a tug-of-war which amounts almost to an issue of academic ownership: who owns clothing – the arts or the sciences?

After summarizing the scientific evidence in favour of protection from cold as the original motivation for clothing, the opposing argument for display is critically evaluated by reviewing key studies in the field of dress studies: Thomas Carlyle's *Sartor Resartus* (1836), Roland Barthes' *The Fashion System* (1967), and Michael Carter's *Being Prepared: Aspects of Dress and Dressing* (2017). Before proceeding, it is crucial to consider how clothing should be defined.

## 2. Definition of clothing

In the humanities, widespread confusion exists regarding definitions and meanings of clothing and related terms like dress and fashion. In particular, serious misunderstandings have arisen from the conflation of clothing with dress, a situation which has led to misguided arguments with respect to the origin of clothing ([Gilligan, 2019a](#)).

### 2.1. Clothing is cover

Clothing refers specifically to items which are worn with the intended purpose of providing cover for the surface of the body; terms such as apparel and attire can be considered

synonymous. A simple, precise definition is found in the *Concise Oxford English Dictionary*: 'items worn to cover the body' (Stevenson & Waite, 2011). Perhaps the most important element in this definition is the word 'to', indicating that what distinguishes clothing is the purpose of providing cover (for whatever reasons, such as warmth or modesty). Importantly, this means that a particular item might be termed clothing in some contexts and not in others. For example, in Aboriginal Tasmania, wallaby skins were typically used to carry items of food collected by women and also to carry babies; i.e., the skins were used mainly as bags. Sometimes these same skins were worn as protection in cold weather – in which instance, the wallaby skins became items of clothing (Gilligan, 2007, pp. 8–9).

## 2.2. Distinguishing clothing from dress

Clothing should be distinguished from other terms such as dress, costume, adornment and fashion which embrace a wider range of items and activities, including body painting, tattooing, shaving and the use of cosmetics. Dress encompasses even the use of perfumes and the elimination of body odours by bathing or using deodorants (Eicher & Evenson, 2015, p. 3).

Dress is a form of art, and dress is usually – though not exclusively – visual art. Insofar as clothes function as dress, the outward appearance of clothing is paramount, to the exclusion of any other purposes or effects of clothing (for instance, altering the thermal physiology of the wearer's body). In the contemporary world, clothing is the dominant form of dress – the *Concise Oxford English Dictionary* defines dress primarily in terms of clothes, with decoration as a secondary meaning (Stevenson & Waite, 2011). When applied to the human body, dressing refers to any activity that is intended to adjust the body's appearance or, more broadly, alter its presentation. Since dressing of the body, either routinely or occasionally, is witnessed in all known human societies, dress is a universal aspect of humanity, regardless of the presence or absence of clothes.

## 2.3. Functions and origins

Related closely to these issues with definition is the need to carefully distinguish between functions and origins, for clothing and dress. A crucial factor is the different time scales for history and prehistory. Historians look for the beginnings of clothing in the early historical era, for instance in Ancient Egypt and Mesopotamia, when clothing had already acquired functions of dress. Prehistorians can look beyond the historical era, when circumstances may have been quite different from the recent past and the contemporary world – notably, during glacial phases of the global climate.

### 3. Scientific evidence

Despite a paucity of preserved remnants from the palaeolithic era due to the perishability of clothing materials, a thermal origin of clothing is supported by evidence from a range of disciplines: [archaeology](#), biology, climate science, ethnography, and lice genetics ( [Bradley, 2015](#); [Collard et al., 2016](#); [Dettmeyer et al., 2014](#); [Ducharme & Brajkovic, 2005](#); [Golovanova et al., 2010](#); [Jablonski, 2010](#); [Jessen, 2001](#); [Kuzmin & Keates, 2018](#); [Mukerjee, 2003](#); [Osczevski & Bluestein, 2005](#); [Parsons, 2014](#); [Reed et al., 2015](#); [Zhang et al., 2010](#)).

To summarize the evidence briefly, clothing functions physiologically as thermal insulation by trapping layers and pockets of air close to the skin surface, slowing the rate of heat transfer between the body and its surroundings. During the glacial cycles of the [Pleistocene epoch](#) that began 2.6 million years ago, the [thermal properties](#) of clothing proved crucial to the survival of biologically naked hominins in middle latitudes. In addition to fire and shelter, hominin populations residing in cooler regions needed the portable protection from cold and wind chill afforded by clothing. Archaeological evidence for the development and improvement of clothing technologies in response to cold exposure includes artefacts such as stone hide-scraper tools and bone needles. These technological signs of paleolithic clothing indicate that simple (loose, single-layer) garments were likely worn when required for warmth by a number of hominin species including [Homo erectus](#) and Neanderthals. Complex clothing assemblages with fitted (or tailored) garments were invented during the last [Ice Age](#) by [Homo sapiens](#), testified in mid-latitude Eurasia by the advent of eyed needles -when environmental conditions deteriorated from around 40,000 years ago ([Gilligan, 2010](#) ).

#### 3.1. From physical to social necessity

Compared to simple garments like capes and skirts, complex clothes provide superior protection from wind chill. Also, these closely-fitted garments (like trousers with legs, and shirts with sleeves) cover the human body more fully. The regular use of complex clothing led to a necessary shift of body decoration from the surface of the naked skin onto the surface of clothes, and routine concealment of the naked body also engendered a sense of modesty, or [shame](#) about nakedness ([Gilligan, 2023a](#)). For these reasons, by the end of the last Ice Age in regions of the world where clothing had previously been required solely for warmth, the need to wear clothes became uncoupled from climate and clothing thereafter became a social necessity.

#### 3.2. From animal hides to textiles

At the onset of the post-glacial (Holocene) epoch around 12,000 years ago, global warming was accompanied by higher levels of environmental moisture (humidity and precipitation) in most areas, and also higher moisture levels from the human body in the form of sweating. These factors resulted in a major shift in clothing materials, from animal hides to woven fabrics, allowing body perspiration to evaporate more easily and air to penetrate through the interstices of the material, enhancing body cooling. The weaving of natural fibres like wool, cotton and hemp for textiles was facilitated by the domestication of animals and plants, and cloth production accompanied the transition from hunter-gatherer to agricultural economies (Gilligan, 2019b).

## 4. Dress history: Carter and Barthes

The pioneering work of Michael Carter has been instrumental in bringing dress studies into the mainstream of art history (Slade, 2014, p. 477). In *Being Prepared: Aspects of Dress and Dressing*, Carter (2017) elaborates his theory about the origin of dress, with clothing subsumed under the rubric of dress. For Carter, clothing is inseparable from dress, which was also the case for Roland Barthes, a founding figure in fashion theory. After listing the three main hypotheses for clothing origins – protection from cold, modesty and decoration – Barthes proceeded to dismiss the whole origin debate as passé, since clothing must be considered ‘above all, as an object of *appearance*’ (Barthes, 2013, p. 20, emphasis original). As such, clothing is fundamentally a social phenomenon. Carter concurs with Barthes that the origin of clothing should be sought not in the biological world but in the realm of the psychosocial. For Barthes, this meant that clothing began as a kind of language in a social context. For Carter, it means a more psychological process which he calls sublimation – a term borrowed from Freud but with less of a biological (or sexual) connotation. Carter’s version of sublimation highlights the non-sexual outcome whereby ‘dress is the sublimated form that the civilised body takes’ (Carter, 2017, pp. 182–183).

### 4.1. Freud and artistic sublimation

Freud, perhaps surprisingly, had little to say about clothing. In his landmark analysis of symbols and meanings in dreams, clothes relate mainly to shame about sexuality or embarrassment about appearing naked. Anxiety about nakedness is a ‘typical’ theme illustrating Freud’s theory about the functionality of dreams, which serve a psychological purpose in permitting the veiled expression (or wish-fulfillment) of forbidden desires – in this instance, exhibitionism (Freud, 1913, pp. 204–208). Freud also mentioned clothes as a fetish, observing that items of clothing are among the most common ‘substitutes’ for the sexual object in fetishism (Freud, 1953, p. 153). However, of more relevance in the present

context, Freud alluded to clothes in his first published use of the term 'sublimated' in 1905, noting how the 'progressive concealment of the body which goes along with civilization' can lead to the sexual drive being 'diverted ('sublimated') in the direction of art' (p. 156).

## 4.2. Clothing as a neurotic symptom

Freud never pursued the intriguing possibility of a causal connection between clothing and sublimation (Gilligan, 2023b, pp. 6–8). The psychoanalytic mantle was taken up by John Flügel, an English psychologist. In *The Psychology of Clothes*, Flügel suggested that clothes serve as a compromise – a 'neurotic symptom' in the psychoanalytic sense – between two conflicting desires, to display and to cover the body (Flügel, 1940, p. 21). Anxiety or 'tension' underpins the vicissitudes of fashionable clothing throughout history, as visible evidence of an ambivalence or 'equivocation' in seeking to simultaneously show and hide the body (Harvey, 2007, p. 67), enacting in material guise 'the drama played out between exhibitionism and modesty' (Carter, 2003a). Nonetheless, while sympathetic to Flügel's emphasis on appearance, Carter views any mention of cover – whether motivated by modesty or protection from cold – as a 'brutal' treatment of the subject that neglects the higher human desire to create 'a pleasing form' (Carter, 2017, p. 114).

## 4.3. Origins of dress

Notwithstanding how clothing denotes cover or 'enclosure' and – in most contemporary contexts – clothing carries ethical concerns about an absence of cover as 'immodest and bad' (Roach-Higgins & Eicher, 1995, p. 10), conflation of dress with clothing tends to confound discussion of clothing origins in dress studies, a situation that reflects a tendency to confuse functions with origins and attribute to clothing the functions of dress.

Academic research on dress and fashion explores how dressing the body facilitates the negotiation of personal and social identities (e.g., Barry, 2019; Jones & Lim, 2022; Mackinney-Valentin, 2017; Nwigwe, 2019), and how the body is 'fashioned' by cultural and historical contexts (Entwistle, 2023). From the perspective of dress studies, even the unclothed body is always already dressed. For instance, a failure to appreciate the ubiquity and cultural diversity of dress – and instead focus on the habitual absence of clothes among Indigenous Australians – had political repercussions during the colonial era (Barcan, 2004, pp. 16–17). The myriad social functions of clothing as dress are documented in an ever-growing corpus of research in sociology and social psychology (e.g., Aspers & Godart, 2013; Boulwood & Jerrard, 2000; Chen, 2001; Cifarelli, 2019; Clarke & Miller, 2002; Cole, 2019; Crane & Bovone, 2006; Entwistle, 2000; Gu & Lu, 2021; Johnson et al., 2014; Kaiser & Green, 2022; Klepp & Rysst, 2017; Tomc, 2022).

It is true that clothing has become the dominant expressive mode for dress and fashion in the world today. However, where the conflation of dress and clothing begins to unravel is with regard to the subject of origins, which are not necessarily the same for dress and clothing. Indeed, except for cover, there are few (if any) functions of dress which cannot be served adequately, or more efficiently, without clothes. Hence the functions of dress need have no relevance to clothing origins.

#### 4.3.1. Carlyle and Sartor Resartus

In [Carter's \(2017\)](#) treatise on dress, the origin of clothing is conceptualized as a uniquely human manifestation of a natural process involving appearance, or the need to be dressed. Sublimation is seen as an underlying 'assembly' of dress (p. 202) which prepares people to appear in the social world, with this process approaching perfection in high fashion.

Carter's position on clothing origins is indebted to the Scottish philosopher Thomas Carlyle, whose major work *Sartor Resartus* (first published in 1836) is touted as a 'founding text' for the study of clothing as dress ([2003b](#), p. 14). Conversely, a founding text for the science of clothing would be the landmark volume on clothing physiology edited by [Newburgh \(1949\)](#). Without delving into physiological considerations, Carlyle maintained that the 'first purpose of Clothes ... was not warmth or decency, but ornament' ([Carlyle, 2008](#), p. 30). For Carlyle, the entire human body is a kind of clothing for the soul, serving to shroud the mysterious core of human existence as a 'Garment of Flesh' (p. 51). The actual garments that people wear are just a natural extension of bodily presence, promoted by living in a social world – a world which, in Carlyle's view, could not exist without clothes (pp. 46–50).

#### 4.3.2. Carlyle and the failure of science

Carlyle launched a concerted attack on science and objectivity, arguing that our very existence is miraculous, or irreducibly mysterious. Hence, he said, the inexplicable fact of existence constitutes a 'violation of the Laws of Nature' (p. 194). Science is therefore restrictive in principle and limited in scope, ignoring aspects of existence which will always escape objective analysis and may, for instance, defy cause-and-effect explanations. In the opinion of Carlyle (and Carter), it is utter nonsense to suggest that clothing began in the mundane world of utility, since clothes must inevitably accompany our appearance in the world, no different in essence from our appearing in bodily form. In this light, Carter speaks of clothing as a necessary aspect of human appearance. Accordingly, following Carlyle's example, scientific evidence for clothes originating as protection from cold can be disregarded. Carter quotes other dress scholars with concordant views including [Hollander \(1993, p. 311\)](#) and [Ribeiro \(2003\)](#), who declares: 'most historians now discount

the theory that clothing was originally devised for mere warmth' (p. 12). To interrogate this interpretation or defend a utilitarian origin for clothes can be misconstrued as a challenge to the discipline of dress studies and even, by inference, an insult to art.

#### 4.3.3. A work of art or utility?

To use an analogy, we might consider the case of the motor car. Does the historical fact that the motor vehicle was invented to serve a utilitarian purpose – as a means of transport – mean there is no automotive art? Is not the 1955 Maserati A6GCS/53 styled by Frua – winner of 'Best in Show' at the Concours of Elegance at Hampton Court Palace in 2023 ([Concours of Elegance, 2023](#)) – a work of art? The first horseless carriages were born into a social world of style and fashion, and their outward appearance was never dictated solely by practical considerations. Does it denigrate art to point out, nonetheless, that the motor car originated as mere transport – or suggest that clothing originated for mere warmth?

#### 4.3.4. The artificiality of science

Any talk of utility with the origin of clothing is anathema to Carter and tantamount to scientism. Indeed, any appeal to evidence from the sciences of thermal physiology, palaeoclimatology or prehistoric archaeology is disparaged as 'controlled speculation' ([Carter, 2017](#), p. 109). The scientific approach is portrayed as imposing artificial control on the disorderly exuberance of nature, not dissimilar to how the facial cosmetics he discusses are aimed at 'suppressing, or at least controlling, disorder' on the natural appearance of the face (p. 67). In line with Carlyle's critique, to be rigidly scientific is to artificially constrict nature and make a speculative claim based on a narrow view which neglects the mysterious aspects of existence.

#### 4.3.5. Barthes' artistic methodology

[Carter \(2017\)](#) lauds the 'rigorous' (p. 114) methodology of Barthes, in contrast to the scientific 'notion' (p. 111) that thermal physiology could be relevant to clothing origins. In [Barthes' \(1990\)](#) case, he analysed descriptions of garments in his favourite fashion magazines. By his own account, Barthes 'exhaustively studied' two magazines, *Elle* and *Le Jardin des Modes*; his twelve-month study was supplemented by 'a few forays' into other periodicals like *Vogue* and, for good measure, the fashion pages of his daily newspapers (pp. 10–11).

Adopting the methodology of Barthes, Carter's pivotal piece of evidence comprises a charming illustration of a 'Stone Age family' lifted from a 1965 book intended for young

readers (Carter, 2017, pp. 80–81). Careful analysis of the drawing ostensibly demonstrates that even during the last Ice Age in northern Europe, clothes displayed elements of style and signs of modesty and gender differences. According to Carter, these findings prove that his primordial family was not ‘clothed in utility alone’ (p. 100).

#### 4.3.6. Dressed for the weather

The air temperature or wind chill level at the time depicted in Carter’s ‘Stone Age family’ drawing is not visible, conveniently. Still, evidence from the science of palaeoclimatology indicates that at the height of the last Ice Age in the middle latitudes of Eurasia, average temperatures on land had dropped by massive amounts, by as much as 10°–15°C (Annan & Hargreaves, 2015, p. 6). Despite the cold conditions, the Ice Age landscape in the drawing serves merely as a decorative backdrop, and the woman’s dress would seem to be made from some fine fabric rather than animal hide. In this regard, the woman’s garment is more neolithic than palaeolithic. Admittedly, her flowing raiment does appear stylish, draped elegantly around her feminine form. A similarly delicate dress could have looked quite chic in the summer wardrobe of Jackie Onassis.

#### 4.3.7. Clothing as dress

Carter’s restricted focus on appearance means that clothing is reduced to dress, which again raises the issue of definition. Whereas Carter meticulously mines dictionaries for definitions of nouns and adjectives like dress, adornment, decoration, embellishment, cosmetics, makeup, stylish, elegant, shabby (Carter, 2017, pp. 36–37, 65–68; 2018, pp. 112–115; Carter, 2020, pp. 776–778) – and, citing Barthes, insists that ‘clothing exists as *meaning*’ (Carter, 2017, p. 115, emphasis original) and that language ‘plays a crucial role’ in dress (Carter, 2018, p. 110) – Carter somehow fails to find a definition for clothes, nor any meaning as distinct from dress. Presumably, we can safely suppose that clothing is synonymous with dress. In any case, Carter can appeal to the authority of Barthes. In *The Fashion System* (first published in 1967), Barthes warned against consulting any dictionaries to ascertain the meaning of clothes (Barthes, 1990, p. 12). If we ignore this sage advice and visit the *Concise Oxford English Dictionary* we find, as mentioned above, that clothes are ‘items worn to cover the body’. In other words, regardless of how clothes can appear as dress, clothing means cover.

### 5. Naked evidence

Along with Barcan (2004, p. 2), Carter finds the meaning of the word naked troublesome although, consistent with his treatment of clothing, he fails to seek advice from a dictionary.

The *Concise Oxford English Dictionary* defines naked as ‘without clothes’ and, more generally, ‘without the usual covering or protection’ (Stevenson & Waite, 2011). In the case of humans, naked means we lack a typical mammalian fur cover. Even when wearing clothes, humans are biologically naked. Carter’s confusion about nakedness becomes obvious when he talks about the Indigenous peoples of Tierra del Fuego (Carter, 2017, pp. 94–95), who lived on the southern tip of South America. The Fuegians’ ability to manage without clothes in the cold weather is sometimes cited as proof that humans can become virtually immune to cold and therefore (so the argument goes) our ancestors never needed to invent clothes for warmth (e.g., Flügel, 1940, pp. 16–17).

The Fuegians did in fact wear warm garments for protection from the cold temperatures and to combat severe wind chill levels in their windswept locale, and they also dressed themselves elaborately with ornaments and body paints. Like the Tasmanian Aborigines (Gilligan, 2007), the extraordinary cold tolerance of Fuegians likely resulted from natural selection for cold adaptations over a long period. Yet even the Fuegians’ remarkable resilience to cold had its limits, beyond which they would avail themselves of protection in the guise of garments (Lothrop, 1928, pp. 121–123). Demonstrating the difference between clothing and dress, when the Fuegians wished to adorn themselves for ceremonial or other social purposes, they would take off their clothes and paint their naked bodies (Gusinde, 2015, pp. 92–119). Clearly, clothing and dress are not the same: to get fully dressed, the Fuegians had to remove their clothes.

## 5.1. Cover: the meanings of clothing and naked

For Fuegians and Tasmanians, clothing did not usually function as dress. Other examples that may serve to illustrate the meanings of dress and naked include the cosmetic removal of body hair, and the act of facial shaving (a form of dressing), where dressing leads to nakedness. As these examples demonstrate, naked does not mean an absence of dress but an absence of cover. Another example is a wrist watch worn for the purpose of telling the time. Even though the watch covers an area of skin, it is not an item of clothing. If the watch is fashionable or expensive and is worn as a form of social display, it becomes an item of dress. On the other hand, if the watch is worn primarily for the purpose of concealing an embarrassing skin blemish on the wearer’s wrist, in that case, the watch might qualify as an item of clothing. Regardless of the purpose(s) in any particular context, a wrist watch qualifies as dress in Joanne Eicher’s category of ‘body supplements’ (Eicher, 2021, p. 778).

Carter does finally mention cover (briefly) in the final chapter of his 2017 book, only to flippantly dismiss cover as ‘little more than a protective sheath’ (Carter, 2017, p. 175). In contemplating the possibility that people like the Fuegians could conceivably wear clothes

without being 'dressed', he remarks that he is 'not at all sure' (ibid.). In other words, when confronted by evidence that clothing is cover and distinct from dress, Carter's response is distinctly vague.

## 6. Nature is overdressed

The strength of Carter's work rests on how he stresses the importance of appearance, not just as dress – a universal aspect of all human societies – but as an aspect of all natural phenomena. As outlined in *Overdressed: Barthes, Darwin and the Clothes that Speak* (Carter, 2013), much of what appears in nature is useless, purely ornamental, and not a functional product of any causal processes like natural (or, in the case of physical beauty, sexual) selection:

To exist is to appear. But this 'need' of ornament seems to be a sort of 'clothing' in which everything has to appear. Ornament and decoration, in this sense, are compulsory ... not merely a useful, or communicative, ensemble but ... a miniature version of the grand squandering at the heart of nature (pp. 50–51).

Carter's theory of dress highlights how our human capacity for culture facilitates an extraordinary elaboration of appearance. As a substitute for Barthes' focus on language (as a utilitarian function for clothes in society), Carter sees sublimation – or rather, his desexualized version of sublimation – as the process whereby appearance transcends the physical and any possible utility, social or otherwise. That a transformative process along these lines often happens with clothing is not in dispute. In covering the surface of our bodies, clothes can acquire the ornamental properties of dress. And dress can have no origin: it is an intrinsic aspect of existence.

### 6.1. Useless stuff

Like cosmetics, Carter envisages the making of clothes as a human effort to 'manipulate the stuff of the world to create a material embodiment of some of our deepest desires, longings, and anxieties' (p. 76). The 'stuff' includes aspects of existence that are surplus to utility or function, luxuriant beyond any evolutionary or adaptive significance, transcendent over the material and above the reach of science (or, at least, objective science). Carter's use of the term 'stuff' alludes again to *Sartor Resartus* (Carlyle, 2008, p. 202), where Carlyle quotes from *The Tempest*: 'We are such stuff/As dreams are made on' (Shakespeare, 2013, p. 209). In that allegorical play, the scientific world created and controlled by Prospero is finally exposed as a 'baseless fabric' (p. 208). Yet, unlike Carlyle and Carter, Shakespeare (2020) did not diminish the thermal function of clothing. The climactic scene in *King Lear* is eerily

reminiscent of a primordial Ice Age drama, when the monarch tears off his regal robes and confronts the 'cold wind':

Thou wert better in a grave than to answer with thy uncovered body this extremity of the skies. Is man no more than this? Consider him well. Thou ow'st the worm no silk, the beast no hide, the sheep no wool ... thou art the thing itself. Unaccommodated man is no more but such a poor, bare, forked animal as thou art (p. 173).

## 7. Disproving science

By claiming that clothing is dress, Carter can declare a pyrrhic victory for art against science in the academic battle for clothing. In the process, Carter disparages scientific evidence that clothes originated to serve a mundane purpose like 'simply keeping warm' (Carter, 2017, p. 104). Drawing on Carlyle's work, science is portrayed as limited in scope, blind to all those aspects of existence that escape the 'iron law of utility' (p. 111) which, according to Carter, underpins evolutionary models. Yet this dismal view of science as an intellectual straitjacket pertains to naïve scientism. Scientism is a form of fundamentalism, and scientism represents as great a threat to science as any religious fundamentalism (Clegg, 2017; Peels, 2023). To malign scientism may be quite justified but it is unfair to tar all science with the same brush. Evolutionary theory is no longer restricted to the neo-Darwinian model (Gould, 2002) and, furthermore, Carter's depiction of natural selection as the 'iron law of utility' (Carter, 2017, pp. 107–111) derives not from Darwin but from the more contestable views of Darwin's colleague, Alfred Wallace (Hoquet & Levandowsky, 2015).

The historical schism between the arts and sciences, so artfully promulgated by Carter, not only discourages cross-fertilization between the arts and sciences, it tends to depreciate science and bring the arts into disrepute. In the case of clothing, the lack of direct evidence for palaeolithic clothes is exploited by Carter to discredit a wealth of archaeological and other scientific evidence (along with the lethal danger of wind chill) as 'speculation' (p. 109). Scientism does science no favours, and artism does art no favours. An element of intellectual elitism surfaces when an art historian can openly downplay the roles of rationality and utility and opine that any 'sophisticated' argument must acknowledge an aesthetic origin for clothes:

Naturally, there are elements of utility in dress ... It is also a common first-year course question that asks what are the origins of clothes, and inspires essays that imagine that the first leather pelt flung across some troglodyte shoulders was a rational response to cold (Slade, 2014, p. 477).

## 8. Conclusion: The luxury of clothing

The casual ease with which an art historian can ridicule a thermal origin for clothing attests actually to the remarkable utility of clothing as thermal insulation. Throughout the historical era, humans have enjoyed the luxury of taking the thermal qualities of clothes largely for granted. In most situations, freezing temperatures and wind chill are little more than a nuisance. Modern-day humanity hides from the cold technologically within a sophisticated thermoregulatory bubble. The situation in prehistory was probably rather different, yet dress studies are confined to the historical era where clothing has become dress. For this reason, a dress historian can appear aloof from thermal functionality and remain comfortably insulated from cold facts.

The fashionable claim that clothing is dress can function surreptitiously to forestall exploration of clothing origins and cleverly elude the meaning of cover. Indeed, to see clothing necessarily as dress has the effect of covering the cover. If clothing is always dress, then it may have no pragmatic origin(s) – as any art historian would rightly maintain. Instead, as Carlyle claimed, clothing would be an emergent product of human culture. But clothing is not only appearance: clothing exists simultaneously as the opposite, a covering of appearance. Clothing may acquire properties of dress, but clothing is never only dress. Even while appearing as dress, clothing is always something other than dress and even the antithesis of dress, namely cover.

## Declaration of competing interest

The author declares no competing interests in the writing of this paper.

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