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Semiosis, Niche Construction, and How We Can Better Engage Palaeolithic 'Art' in Human Evolution

Abstract Discerning the patterns and processes of the emergence of symbolic behavior has been linked to our ability to determine the emergence of humanity in the archeological record. In this paper, we place engagement with Palaeolithic 'art' in the context of the human niche and discuss how the study of palaeolithic art can be approached by using semiotic theory. We argue that moving away from a reliance on identifying symbols and towards a view of meaning making in the human niche is a useful way to understand the place of materials labeled as Palaeolithic art. This perspective emphasizes the role of semiosis and niche construction in the expansion of the human cultural niche across the Pleistocene.

Keywords semiosis, niche, symbolic thought

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Introduction

In the preface to Dorian Gray, Oscar Wilde famously commented that "All art is quite useless." Later, in a letter to a fan, Wilde explained that he meant that

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> A work of art is useless as a flower is useless. A flower blossoms for its own joy. We gain a moment of joy by looking at it. That is all that is to be said about our relations to flowers. Of course, man may sell the flower, and so make it useful to him, but this has nothing to do with the flower. It is not part of its essence. It is accidental. It is a misuse. All this is I fear very obscure. But the subject is a long one (source: http://www.lettersofnote.com/2010/01/art-is-useless-because.html).

Since the discovery of Palaeolithic art, scholars have tried to deduce what exactly these images mean. As the papers in this volume suggest, 'art' is a problematic notion. How we define art, and what we assert about its meanings, perhaps says more about our own cultural and linguistic biases than about the cognitive capabilities of Pleistocene humans. In fact, the frequent use of materials assumed to be 'art' as indicator of the presence of true (or 'modern') human beings points to contemporary human hubris, and leads to a subsequent misrepresentation of the capacities of populations of Pleistocene *Homo* (McBrearty 2007; Shea 2011; Kissel and Fuentes 2017, 2021). As Monnier (2006) shows regarding the Lower/Middle Palaeolithic periodization, the index fossils used to distinguish these periods do not provide clear 'breaks' in the archaeological record. She argues that we "often forget that they are artificial boundaries designed to provide structure to a complex record" (Monnier 2006, 709). To not admit gradation and overlap between the diverse populations that make up our genus across the last half of the Pleistocene is to ignore the genetic and material records and to disarticulate continuities in the human niche (Ackermann et al. 2016). We must be aware of the boundaries that we draw on what is and what is not art and attempt to derive testable formulation for any such cleavages.

There are also a host of colonialist and racialized sentiments in earlier approaches to this topic, obfuscating the actual distribution and meaning of the data. One can ask why, in many museums in the United States, Native American art is found in Natural History museums while European art is placed in art museums and how that has shaped how we judge the cognitive and intellectual impetus for the creation of meaning laden items, what is 'primitive' and what is 'refined', and why we strive to rank meaning-laden expression into such categories in the first place. These issues abound in the identification of, and discussion about, Palaeolithic art. In this paper we take a different approach. Rather than ask what Palaeolithic 'art' might mean, we ask how *can* such material mean? In other words, what about the images informs us about what let members of Pleistocene *Homo* (hereafter, humans) to create and send messages to themselves and others. How where they able to 'read' these messages in the way in which they were meant to be read? Modeled after Charles Peirce's (1859–1914) work in semiotics (Peirce 1958; 1992; 1998), and emerging work in defining and describing the human niche (Whiten and Erdal 2012; Fuentes 2015; 2016; Deacon 2016), we suggest that elucidating the semiotic nature of these objects many call 'art'can help paint a picture of the lives and voices of Palaeolithic peoples.

Most of the debates about Palaeolithic art center on whether or not something can be identified as a symbol. Most have concentrated on the earlier examples of items such as ochre (Henshilwood and Marean 2003, but see Dapschauskas et al. 2022), beads (Chase and Dibble 1987; Malafouris 2008), and other artifacts that may be flickerings

of symbolically mediated behavior. What, however, can we say about Palaeolithic art that is not tied to the generally un-provable assertion of "symbol"? Without access to a time machine to offer insight into how early humans defined, used and developed their symbols it remains impossible to correctly identify what was meant and why they meant it. Here we re-iterate our argument (Kissel and Fuentes 2017) that one can apply a semiotic analysis without assuming the abilities of the humans who made the art were explicitly being symbolic (to be clear, we think that they are symbolic, but wish to take a strict scrutiny approach here (e.g., Wynn and Coolidge 2009)).

The Human Niche and Semiosis

> Our understanding of human evolution can never be complete without taking into consideration this process where people and things are inseparably intertwined and co-constituted
> (Ihde and Malafouris 2019, 198)

In contemporary ecological theory the niche is the structural, temporal, and social context in which a species exists. In the most basic sense it includes space, structure, climate, nutrients, and other physical and social factors as they are experienced, and restructured, by organisms and via the presence of competitors, collaborators and other agents in a shared environment (Wake et al. 2009). The human niche, then, is the spatial and social sphere that includes the structural ecologies, interfaces with other species, social partners, and the larger local group/population for humans. But human niches, at least today, also involve ideologies, institutions, and practices. Human niches are the context for the lived experience of humans and their communities, where they share kinship and social and ecological histories, and where they create and participate in shared knowledge, social and structural security, and development across the lifespan (Fuentes 2015; 2016; 2017). In humans, since at least the later Pleistocene, the niches we occupy, structure and interact with also include the perceptual contexts of human individuals and communities—the ways in which the structural and social relationships are perceived, signified, and expressed via behavioral, symbolic and material aspects of the human experience (e.g., Deacon 1997; 2016; Mithen 2005; Rossano 2009). Terry Deacon offers us an effective description for this key facet of the human niche describing it as the "great ubiquitous semiotic ecosystem in which we develop" (Deacon 2016, 135). Our ecology is simultaneously material, imagined, perceived and constructed. Meaning matters, and it is evolutionally relevant (Kissel and Fuentes 2018; Overmann and Wynn 2019).

Across the Pleistocene the human lineage acquired a distinctive set of neurological, physiological, and social skills that enabled us to work together and think together in order to create and collaborate at increasing levels of complexity. This interfaced with our expanding ecologies developing a system that continues to shape, and being shaped by, the human niche. This collaboration intrinsically involves a capacity for imagination, the intensification of the use of signs and the creation and use of materials as symbol. Terry Deacon (1997; 2016) notes humans are a 'symbolic species', analogous to the way one might characterize birds as 'aerial species' and dolphins as 'aquatic species'. But, he argues, unlike these ecologically specialized lineages, the symbolic

'ecology' that humans evolved is not external to the human lineage; it is inextricably part of it. It is our niche and its development, and the feedback processes within it, that are central to an explanation for how humans came to be the way we are (Fuentes 2017).

Since at least the mid-to-later Pleistocene (~500,000 years ago), human niches also include novel perceptual interfaces developed via our lineage's structural and social relationships with the material world and with one another (Galway-Witham et al. 2019; Overmann and Wynn 2019). These interfaces are perceived and expressed via behavioral, symbolic and material aspects that emerge in the development and expansion of human culture.

It is clear that by the later Pleistocene materials traditionally classified by contemporary scholars as 'art' or 'symbolic' are abundantly present and make up a significant component of the perceptual, material and behavioral lives of many members of the genus *Homo*. But is 'symbolic' the best way to refer to these materials? No (Garofoli 2015a; Iliopoulos 2016; Garofoli and Iliopoulos 2017; Kissel and Fuentes 2017).

A material is symbolic if the connection between it and whatever it stands for (is a symbol of) is predicated on convention, rather than by similarity or contiguity (that is, different from it being an icon or index, respectively). So, to truly know if a specific material item is a symbol, we need to know the cultural context (the conventions that predicate and construct it) in which it was created: by its very nature, a symbol must be read and interpreted within a system of meaning. We do not have access to the systems of meaning (cultures) of Pleistocene populations of the genus *Homo*. In actuality, most of what we refer to when talking about Pleistocene symbols are materials we infer to have meaning for archaic humans: they are signs (Kissel and Fuentes 2017; 2018). Thus, rather than asking if materials are symbols/symbolic, it is more salient to ask how they functioned as signs. This involves semiotics.

Umberto Eco, in his *A Theory of Semiotics*, defines semiosis as "the process by which empirical subjects communicate, communication processes being made possible by the organization of signification systems" (Eco 1976, 316). Humans (and other animals (Kohn 2013)) live within a complex web of semiosis and meaning-making; but humans are especially adept at creating and developing materials into signs. How we interpret signs is a product both of cognitive capabilities and our cultural context. An organisms' Umwelt (von Uexküll 1934 [2010]) is the semiotic world that it creates and reshapes throughout its life, and for humans much of that is facilitated by the creation and use of material signs. The semiotic facets of the niche can be a critical component, even a target, of evolutionary processes (Peterson et al. 2018).

When applying a semiotic suite of ideas to Palaeolithic art, non-semioticians run into an ocean of complex terms and theories, such as *representamen* and talk of *Dicent Indexical Sinsigns,* with complex and often opaque theories behind them. Here we provide a short overview of these topics to help the reader understand the salient facets while admitting that semioticians often disagree on the exact definitions and interpretations.

Semiotics

The first step in a semiotic analysis is to understand how the sign is functioning. To do this, we first need to know what a sign *is*. This is important, as whether one interprets via a Saussurian or Peircean framework affects the types of analysis possible. Under

Saussure's theory, signs are linguistic and dyadic. For Saussure a sign has two parts: the *signifier* (something that is acoustic) and the *signified* (the concept). Importantly, the connection between the two is arbitrary. Thus, the word for an apparition of a dead person in English, Spanish and Dutch; *ghost, el fantasma,* and *spöke*. Saussure's theory applies to linguistic signs. This makes it useful in some instances, but difficult to apply when used paleoanthropologically since we often do not know the linguistic capabilities of earlier humans.

Peirce, on the other hand, saw signs not as dyadic but as triadic (see Fig. 1). While scholars disagree on interpreting Peirce, in general we can think of these in the following way: The *representamen* (what we might call the sign itself) is something that represents something else; the *object* is the thing that the representamen represents; and the *interpretant* is the understanding that one has between the representamen and the object.

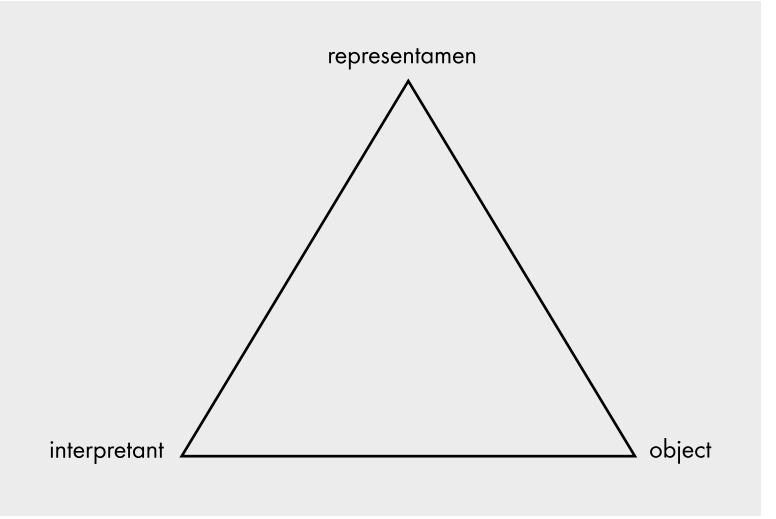

Fig. 1 | Visual representation of Peirce's triadic system of signs

So, what is a sign? Peirce defined a sign as "something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the interpretant of the first sign. The sign stands for something, its object" (Peirce 1958).

The best-known aspect of Peirce's semiotic work is his conceptualization of how the representamen and the object are related (e.g., Deacon 1997). Importantly, his system allows for connections between the sign and its object to be non-arbitrary, contra Saussure. This leads to what is currently termed his 'second' trichotomy, Icon-Index-Symbol, which is how semiotics has been traditionally applied to much of the archaeological and paleoanthropological literature.

We are somewhat skeptical of the application of Peirce's second trichotomy to paleoanthropology (Kissel and Fuentes 2017). For one, the ground (the basal relationship) between a sign and its object is often unknown in the archaeological literature. While with a detailed culture history it may be possible to untangle the connections between the representamen and its object (see Hendon [2010] and Joyce [2007] for

an example of this can be done well), doing so in 'deep time' seems to reach issues of equifinality and is rife with uncertainty.

For example, a classic image from cave art are images of animals. What are these in the Peircean system? They could be icons as they represent by similarity its object. The fact that we can often discern what animals are being depicted suggests that they have at least an iconic ground (the images represent the animals they depict). However, they could also be indexical. An index is something were the link between the sign itself and the object is due to a causal link; based on contiguity. Does it stand for the animal's sound? Its movement? Its meat? Finally, many assume that there is symbolic ground in these images. The fact that there are so many images of similar animals suggests to a semiotician that there is something going on. Maybe the convention was that these images told a creation story. They could have even been linked to words. However, we have no way to assess the validity of such assertions.

One example of this difficulty can be seen by the famous handprints in cave art. We can view it as icon and index, but we cannot know the symbolic link. In other words, if we do not know the conventional ground which link an object to a sign, we can't interpret it correctly. However, we may be able to infer its existence. This proves problematic. We cannot disprove that a particular artifact is symbolic by showing that it is an index, as symbols, by their very nature, embed iconic and indexical thinking within them. This leaves us with not insignificant problem of figuring out to *prove* something is a symbol. As Richard Parmentier notes:

> Attempts to place certain objects in the baskets of 'icon,' 'index,' and 'symbol,' similarly, miss the critical point that these Peircean terms are not types of signs but stages or moment in the hierarchical complexity of semiotic functioning; a symbol necessarily embodies an index to specify the object being signified, and an index necessarily embodies an icon to indicate what information is being signified about that object (Parmentier 1994, 389).

We agree that there is much to offer from Icon-Index-Symbol and do not want to belittle its use. However, in a Peircean approach the *first step* is not looking at the sign-object connection but rather examining the sign itself. To fully investigate how this might help us in looking at Palaeolithic "art" we must delve a bit deeper into Peircean semiotics and understand the nature of his system of categories of thought, which differs from Kant in that there are three ontological categories rather than four: Firstness, Secondness, and Thirdness. Just what he meant by Firsts, Seconds, and Thirds are hard to understand and hotly debated.

Firstness has to do with qualities and can be understood as the feeling of being in a meditative state concentrating on only one thing (Short 2007; de Waal 2013).

"A feeling, then, is not an event, a happening, a coming to pass… A feeling is a state, which is in its entirety in every moment of time as long as it endures" (Peirce 1958, 151 [1.305]). A first corresponds to emotional experiences without a specific cause. You could be feeling hot in a car before you recognize that it is because you turned on the heater by accident, or cold before you find out that the back window was left open. That feeling, without thinking about the cause, is a first. Peirce sometimes used the word 'quality' instead of firstness. For him these emotions include feelings

> […] such as the color of magenta, the odor of attar, the sound of a railway whistle, the taste of quinine, the quality of the emotion upon contemplating a fine mathematical demonstration, the quality of feeling of love, etc. I do not mean the sense of actually experiencing these feelings, whether primarily or in any memory or imagination. That is something that involves these qualities as an element of it. But I mean the qualities themselves which, in themselves, are mere may-bes, not necessarily realized (Peirce 1958, 151).

Gorlée (1994) provides a useful explanation "Firstness is experienced in [Peirce's examples] of the feeling of acute pain, an electric shock, a thrill of physical delight, the sensation of redness or blackness, the piercing sound of a train whistle, a penetrating odor, or any other impression which is forced upon the mind and compels its total attention" (Gorlée 1994). An aesthetic feeling is a First.

As an example, imagine yourself in a dense fog, where you can't see anything but the fog and, after a while, feel one with the fog. That would be an example of firstness. Now imagine that you are gently floating through the fog, still even unaware of your body, when you smack right into a lamppost. That smack, which brings you out of your firstness, is a secondness. Secondness, then, is the interruption of firstness; it is thought in relation to something else. Secondness is also referred to a 'reaction' by Peirce. At the moment, you do not know what happened. Thirdness comes about when you recognize that the smack was due to hitting a lamppost. Thus, it is what allows a person to draw connections between the firstness and secondness. Almost everything else in Peirce derives from these ideas. So, a *representamen* is a first, the *object* is a second, and the *interpretant* is a third.

In the assessment of Pleistocene meaning-laden materials, those objects categorized as 'art", can benefit from engaging what was actually Peirce's first trichotomy in which there are three sign types: qualisigns, sinsigns, and legisigns. Qualisigns are derived from qualities (i.e. firsts). "[T]he color embodied in a cloth sample; in itself, that color is a mere possibility, its actually occurring in the sample being an addition to it; and what it represents is nothing other than itself" (Short 2007, 209). To put it another way, a sign that is a qualisign signifies something though the quality it has. Qualisigns do not signify anything except as they are embodied in an object or event (Short 1982). It is the tone of the sign, to use another Peircean term. So, something that is a qualisign can only relate to an object on a level of firstness. The second type of sign-vehicle is the sinsign, which contains several qualisigns (EP 2:291). When a sign-vehicle uses what Peirce refers to as essential facts, this is a sinsign. When smoke is acting as a sign of fire it is a sinsign. The third type, a legisign, is when the sign vehicle signifies based on convention. This is not a symbol in that we are not concerned with what the convention is, simply that the legisign is defined by it. If we do not know the convention then how can we assume the legisign's signification is based on such a process? Legisigns occur as replicas, an individual instance of a legisign. They can be seen as a special category of sinsigns, where there significance is based on both being a replica of a legisign and on the features of its occurrence (Short 1982). Legisigns define the characteristics of their replicas.

When signs are unique occurrences they are sinsigns and when they have some regularity, when they are governed by an overarching contextual pattern, they are

legisigns. In other words, one-off occurrences in the archaeological record could be sinsigns. For instance, the engraved clam shell of Trinil (Joordens et al. 2014) or early examples of beads. However, when we see multiple and similar occurrences of sinsigns, such as the modified shells of Blombos (Vanhaeren et al. 2013) or the repeated use of engraved shell at Diepkloof (Texier et al. 2013), we have evidence of legisigns existing that 'control' the way the replicas are formed. A change in the pattern of use is a change in the legisign regimentation. A string of beads, then, can be both an index of the wearer and a replica of a broader indexical sinsign. The large collection of beads of similar type across space and time demonstrates the existence of replicas created from a particular perceptual template and thus the presence of a legisign (see Peterson et al. 2018).

Applying this Perspective

Figurines

Between around 18–35,000 years ago across much of western, southern and eastern Europe, multiple instances of remarkably similar small, carved anthropomorphic female figurines were found. The figurines are not identical but share many features in shape, texture, size and style of creation. Understanding the *function* of these objects has been the topic of much research. Conard (Conard 2009) reports on an early example from Hohle Fels Cave at 35,000 years ago of a female statue and suggests links to later figurines. Many of the features, including the extreme emphasis on sexual attributes and lack of emphasis on the head, face and arms and legs, call to mind aspects of the Venus figurines well known from the European Gravettian, which typically date from between 22 and 27 kyr BP" (Conard 2009, 250).

Many studies have suggested these objects were used in a social context (Knapp and Meskell 1997); they could have been used to maintain social alliances or in ritual (Gamble 1982; Soffer et al. 1993; Coward 2016). "Although there is a long history of debate over the meaning of Palaeolithic Venuses, their clearly depicted sexual attributes suggest that they are a direct or indirect expression of fertility"(Conard 2009, 251). Nowell and Chang (Nowell and Chang 2014) suggest that interpretations of these figurines reflect the socio-political contexts of their times. Iliopoulos further suggests we may see these as icons (or as secondary iconic signs) "because prior knowledge of their significative function in some particular system of interpretation would have been required for perceiving their similarity with particular mother goddesses" (Iliopoulos 2016, 116). But how can we actually know any of these assertions about the meanings of these figurines are correct?

In the example of anthropomorphic female figurines, we may be able to see the iconic significance but not the indexical or symbolic ones, as the cultural context had been lost. As Joyce (2007) notes, there is a difference between asking "what do figurines mean" and asking "*How* do figurines mean?" Art had a different ground for those contemporary people who saw them. Thus, we do not have to see them as fertility goddesses, sex objects, or whatever. Without the context we cannot know their symbolic ground. Nowell and Chang recognize this when they note that "In archaeology, as in life, context is critical to understanding meaning. It is clear that "Venus" figurines should be studied in the same manner as other Palaeolithic artifacts…" (Nowell and Chang 2014).

We suggest that these figurines are better seen as replicas of legisign. Remember, a legisign is a representamen that acts as a sign based on convention. It is a sign that we can see has a specific meaning because it shows up in multiple copies that evoke the same perceptual response. That is, if there are multiple examples of the same type of human-created material item that conveys or contains and/or evokes similar or identical sensations, then we can say it reflects a convention amongst the group or groups making the items in that they are intentionally replicating the making of a material item with the same or similar characteristics. We assume with the same intended impact, but we cannot prove that or know why that impact was desired. It may be a symbol, but we cannot know that. We can, however, assert that the legisign did mean something to those who made it as evident via the repeated creation of specific items, which evoke specific sensory responses across space and time. Presence of legisigns offers evidence of meaning making, whether symbolic or not. They offer an indication that multiple groups of people where creating material objects that represented a set of shared sensations and/or mutually understood (and/or perceived) meaning. The point is that the creator(s) had an aim:

> A person who wishes to convey a meaning intends to produce a particular sort of interpretant in the thought, the behavior, or the emotions of a person he is addressing, and he intends to do this by replicating a legisign with which he [she] assumes the person addressed is familiar (Short 1982, 293).

While we cannot see the legisigns (the shared 'templates') that were used, we do know that these figurines were produced for a reason and that there was a shared intentionality to them. Perhaps the similarities in the Gravettian figurines are replicas of a legisign. This semiotic move allows us to talk about meaning-making and capabilities without assuming the behavioral repertoire of people in the past was the same as it is today.

Faberstein (2011) examined over 550 Pavlovian art objects from 28,000–24,000 (BP, uncorrected dates), detailing characteristic such as the subject matter of the art, raw material, and the type of surface incision. Such detailed analysis allows for the tracking of specific types or, from a semiotic perspective, qualisigns. She notes the importance of studying the full range of materials, rather than simply one type. This *chaine operatoire* approach allows us to see how different qualisigns may be embedded in the art, such as the orientation and placement of engravings. The high percentage of engravings on the convex rather than the concave side of ivory lamellae at Pavlov 1 may be the result of socio-technological behavior. It also is a qualisign. The preference of this side only exists embedded in the sinsign of the artifact. The socio-cultural uniformity she and others see are the result of these sinsigns with embed similar qualisigns, which suggests the artifacts are replicas of a legisign.

Examining representations of the horse in Magdalenian sites, Rivero and Sauvet (2014) distinguish seventeen attributes such as the manner of drawing the outline and details of the sense organs. This allows them to discern three main groups of figures. Another way of looking at this study is to see these attributes as qualisigns. If hatching is used, it is a particular qualisign.

We do not want to suggest that qualisign is a better way to describe these attributes. But we do think that seeing the analogies to the horse figurines having embedded

qualisigns, and that the presence of many bundled qualisigns means that these figurines are replicas of a legisign.

Beads

While not often described as art per se, the use of beads as personal ornaments may fall into this category. The exact definition of what makes something a bead is far from clear, but marine shells with evidence of perforations and/or use-wear have been found in northern and southern Africa and southwest Asia between 130–100,000 years ago (d'Errico et al. 2005; Bouzouggar et al. 2007; Bar-Yosef Mayer et al. 2009).

Vanhaeren and d'Errico (Vanhaeren and d'Errico 2006) use 157 bead types at almost 100 European Aurignacian sites to identify a "definite cline sweeping counter-clockwise from the Northern Plains to the Eastern Alps" (Vanhaeren and d'Errico 2006, 1105). For them, this illustrates ethnolinguistic diversity. The ability to locate these cultural entities via personal ornaments is important, given how much cultural preference is seen in beads (Wilkie 2014).

Another way to look at this is to think of a bead itself. Each bead is composed of bundled qualisigns. As Savan explains a paint chip is a qualisign. "The color chip is perhaps made of cardboard, rectangular, resting on a wooden table etc., etc. But it is only the color of the chip that is essential to it as a sign of the color of the paint" (Savan 1988, 20). You can't give someone a qualisign since it doesn't exist separate of other things. Keane (2003) notes if someone likes the color red you cannot simply give them that color. Rather, it has to be embodied. However, it is also true that what it is embodied in may matter less than the qualisign itself. Perhaps they might like a red cup, red plate, red painting, etc. The fact that qualisigns must be embodied in something mean that they must be "bundled" (Keane 2003) with other qualisigns. And how qualisigns are bundled together can change their meaning. We argue that in the distribution of beads across space and time in the later Palaeolithic we are likely seeing different legisigns, different ways of making beads that have meaning(s) for the makers. This approach is useful as even if we cannot assume a specific pattern of culture exists, we can know that legisigns do. When beads can be seen as replicas, they demonstrate that a legisign exists. They are being created to produce a specific reaction in another person. Legisigns thus abound in the Pleistocene, from ways to string beads (Vanhaeren et al. 2013) to preferences in bead types (Bar-Yosef Mayer 2015).

Vanhaeren and d'Errico (2006) look at raw material, morphology, mode of suspension, dimension, and species. So, each bead has these qualities embedded in them. Individuals making them may have chosen beads for specific reasons, some of which were culturally determined. We do not know these reasons, but the qualities that are embedded can be deduced via analysis. Each shell, by itself, is a sinsign. It is a one-off example. But when we have a site with multiple shells that have the same or similar qualities, they are replicas of legisign (just as seeing a word one time in a text of a foreign language doesn't necessarily mean it is a useful word, but seeing it multiple times clues us into to its importance in the overall legisign of the language). As an example, the data in Vanhaeren and d'Errico shows that the "figure-eight-shape" is rare, found only at three sites in the database (2 from Belgium and 1 from Germany). They note in their analysis that these are among the sites that "have in common a number of bead types absent in the other sites of their sets" (Vanhaeren and d'Errico 2006, 1118). Is

this a specific favoured qualisign? Similarly, there are only 2 sites that have decorated beads (Tuto de Camalhot and Souquette, both in France). As this is not common it does not indicate a legisign but may point to a specific local practice.

Semiosis and the Human Niche Make Palaeolithic 'Art' More Meaningful

We know that art is not only created by contemporary humans. But what can we say about how to understand early 'art'? We have a unique situation in that no one seems to doubt that what scholars have often termed 'modern humans' made cave art. Moreover, no one, as far we know, has argued that cave art was just doodling to pass the time. But, interestingly, when art has been argued to be present for 'non-modern' humans, such as Neandertals (Pike et al. 2012) or *Homo erectus* (Joordens et al. 2014) the possibility is either rejected or suggested to not be art, apparently based on the belief that only modern humans can do it. This is patently absurd given the current data at hand (Kissel and Fuentes 2017). Maybe it helps to think of art as a first. The aesthetic experience we want is that first. Once we try to understand the Third, we may reach difficulty since we do not know how people in the past interpret it, but at least we have a way in that is assessable using the material remains we have and not reliant on assuming that we know can the culture of the past humans who made them.

Parmentier provides the useful concept of 'downshifting', which refers to the idea that certain types of sign-object classes tend to be apperceived at lower semiotic levels over time. Something that had an indexical ground may, over time, be perceived only on the iconic level. He applies this to the example of artwork. A regular museumgoer (one who is not a specialist in art) could view an image of the Madonna from the 15th century and interpret the ultramarine as an iconic sinsign. In other words, they would not read too much into it besides the color being an icon for that color in 'real life.' However, imagine that same museum goer was viewing the image at the time it was first painted. She would know that that color was both rare and very expensive and thus it would, for her, function as indexical sinsign that pointed to the wealthy patron who paid for the work. Importantly, the "passage of time corresponds to a lowering of the rank of the sign, as the richness of "collateral knowledge" available to the viewer decreases" (Parmentier 1994, 19).

The same thing is true in an archaeological context. Without detailed knowledge it is difficult to know the indexical, let alone, symbolic, aspects of a sign. Archaeologists who have applied a semiotic approach at this level such as Hendon (2010) and Lau (2010) are able to do so due to ethnohistoric research which allows for a fine-grained approach.

Thinking about how art functions in the Pleistocene can be accomplished in a number of ways. We can track the spread of specific patterns, analyze the *chaîne opératoire* at different sites, and seek to understand the meaning behind the art. Rivero and Sauvet (2014) argue that "Style should be considered as the particular form and design given to manufactured objects by individuals or groups of individuals to inform others about their identity, affiliation and status. Style acts as a visual sign playing an active role in the processes of information exchange, communication and social interactions" (Rivero and Sauvet 2014, 65). As such it can be used to infer social groups in the past. For example, Tostevin's (2007) use of a "taskscape visibility" approach, which suggests that when, where, and for whom a cultural task is performed can affect its

transmission, opens up avenues of research. So too can the application of semiotic analysis. The styles and types archaeologists identify are analogous to a sign's "modes of being" (Jappy 2013, 49). We suggest that to apply Peirce researchers should focus on his First Trichotomy (qualisign-sinsign-legisign). As others have shown (Garofoli and Haidle 2014; Garofoli 2015a; b; Iliopoulos 2016; Garofoli and Iliopoulos 2017) a semiotics-driven archaeology can lead to productive research.

Furthermore, this semiotic approach may allow us to discuss art without many of the culturally-laden and problematic terms. Take the example of the so-called 'Venus' figurines discussed above. As noted by Athreya and Ackermann (Athreya and Ackermann 2019), this appellation stems from a racist and sexist perspective (and thus is both), as its use refers to Sarah Baartman, a Khoe woman put on display in London and Paris as an example of a "living savage."

What is considered art is often biased by the assertions of specific meaning given to it by scholars. This hampers our endeavors to gain insight into past worlds. Invoking a Peircean perspective offers another approach. Since we think in signs, and we communicate through them, we can ask how specific signs (beads, engraved ochres, pendants, etc.) functioned without giving a value judgement on, or culturally-laden meaning to, their aesthetic qualities. Moreover, it removes the common duality that suggests an object can be exclusively either utilitarian or symbolic. A sign can be an icon, an index, and a symbol. Just as humans today embody complex meaning into everyday objects (the reason why one can purchase a $4,200 Reinast Luxury Toothbrush) people in the past may have done the same thing. The trade and circulation of raw materials, decorated objects in the Magdalenian (Schwendler 2012) may represent both an interest in ornamentation and the benefits of trade partners. Perhaps Gravettian figurines did the same.

In 1997, Ofer Bar-Yosef asked why there are so few examples of symbolic expressions in Later Prehistory of the Levant. He noted the lack of sites (in comparison to Western Europe), the likelihood that symbols may have been made of perishable materials, and that socioeconomic changes at the Natufian precipitated the emergence of complex symbolic behaviors. He suggests "we need to reverse our questions and ask why artistic/symbolic manifestations proliferated in Upper Palaeolithic Eurasia and Australia while in other parts of the world, it emerged in the terminal Pleistocene and proliferated during the Holocene" (Bar-Yosef 1997, 181). More than twenty years later we have more evidence of art in different parts of the world. Another way to answer his question is to reframe the debate. Rather than wonder why art/symbolism is or is not present we can ask how different populations re-made their world though the creation and dissemination of objects imbued with meaning. The effect that the art they made had on them is important not to undersell (Malafouris 2013; Ihde and Malafouris 2019):

> [M]uch of what we identify as human intelligent behaviour never happens entirely inside the head of the individual but is distributed, enacted and mediated through a variety of socio-material forms and material engagement processes (Ihde and Malafouris 2019, 204).

We may not know the exact function art had in pre-Holocene populations. But Peirce gives us a way forward. Thinking on *how* these objects were able to give meaning, rather than on *what* that meaning was, is a worthwhile endeavor.

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