Minoan Waist-to-Hip Ratios, Exposed Breasts, and Sexual Selection: Applying Sociobiology and Evolutionary Psychology to the Iconography of the Human Body in Bronze Age Crete

Michele Mitrovich

Abstract *The present paper is an interdisciplinary study that analyzes the iconography of the human body in Minoan Crete by means of concepts and tools utilized in disciplines such as Sociobiology and Evolutionary Psychology. Among these is a metrical methodology of waist-to-hip ratio (WHR), used for assessment of health, physical fertility, sexual attractiveness, and mate preferences in culture-specific social environments. The findings and their possible implications on the inter-gender relationships, on religious regulation of sex, mate selection, and procreation, and on social dynamics in Bronze Age Crete are discussed. Some aspects of gestures, stances, comportment, and bull-leaping sports are analyzed as these relate to the modes of interaction and communication between the sexes. This paper hypothesizes that the iconography of human representations in Bronze Age Crete might be largely centered around sexual desirability to potential mates. It is proposed that social and religious regulation, control, sanctification, and ritualization of mate selection strategies, sex, and modes of their outward expression through artistic media constituted some of the core mechanisms of Minoan religious practices, social cohesion, and cultural identity. A hypothesis of the centrality of sexual selection through female choice in Minoan culture and religion is proposed.*

Introduction

Study of sexuality and gender is a relatively recent but exponentially growing area of inquiry in Aegean prehistory today (German 2000; Rautman and Talalay 2000; Alberti 2002; Talalay 2005; Nikolaidou and Kokkinidou 2007, 44; Alexandri 2009; Cadogan 2009; Goodison 2009; Kopaka 2009; Hitchcock and Nikolaidou 2012; Steel 2020). It produced a wealth of valuable insights but there are also a number of challenges with which the discipline has been grappling, some of which include falling into the trap of "anachronistic projections from classical antiquity" (Hitchcock and Nikolaidou 2012, 503) and those from modern religious, cultural, and ethical notions, with methodologies either focused on searching for traces of non-binary iconography or rooted in the default patriarchal family system. As anthropologist Barbara Voss (2008, 318) expressed it "Most archaeological texts still read as if they were written to be approved by a morals committee for the promotion of family values", with the biological sex-drive and sex as an essential human pleasure-seeking behavior linked solely with the function of procreation or omitted from a discussion altogether. The limited nature of available evidence largely shaped the discussion of engendered experiences and inter-gender interactions in the Aegean Bronze Age within the general matriarchal or patriarchal framework or that of religious activities promoting fertility as an ambiguously abstract and symbolic concept. A good example of this is the so-called Mother Goddess or Great Goddess cult which has been traditionally linked both with the concept of matriarchy and with fertility-centered religious practices (Evans 1921, 3–5, 160–161, 513, 656–657; 1930, 467–476; van Straaten 1986; Gimbutas 1989; Muhly 1990; Keller 1998). The popular Mother Goddess theory is still quite influential in the field of Aegean archaeology today, despite the glaring absence of 'kourotrophos' scenes in Minoan Crete (Olsen 2014, 5; 1998, 380–381; Rutter 2003; Budin 2011, 269, 283; Adams 2013, 5). However, largely missing from

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the discussion is the framework of the very activity that is essential for promoting fertility in a physical sense. The overlooked physicality of human instincts, nature, and behavior relates to the idea expressed by Lynn Meskell (2000, 20) that "most archaeological studies on the body leave their bodies uninhabited and without materiality." As a result, Minoan body and sexuality has been detached from sex and desires, and Minoan fertility dissociated from mate selection strategies, with few exceptions, such as Robert Koehl's (1986, 2016) exploration of possible homoerotic activities within the Minoan 'rites of passage'. The paradox of the abundance of research and discussions centered around fertility in the Bronze Age Aegean accompanied by the shortage of conversations about sex, in part, is due to the fact that until this day, no clear and indisputable images from Minoan Crete that depict a complete nuclear family, sexual intercourse, or intimacy between the sexes have been uncovered.[1] However, it is not the question of *if* Minoans had sex or participated in the activity that led directly to their physical procreation, rather, it is the question of *how* this fundamental sphere of human experience was framed and mediated by their society and religion. It appears that there has not been a single ancient, modern, western, eastern, urban, rural, or tribal cult or religion in human history that would not include some rules and regulations dedicated to explanation, signification, restriction, sanctioning, and control of human sexual behavior. Therefore, it is an essential aspect of Bronze Age Aegean society that needs to be investigated. Walter Burkert (1996, 17) aptly noted that "human sexuality as such has a clear biological function and pedigree. During adolescence humans everywhere and at all times will spontaneously discover sexuality along with new feelings and behavior, while cultural and educational efforts to repress them normally fail. … The biological program develops on its own according to pre-determined patterns, which reach back far beyond the emergence of humans and have long been inscribed in the genetic code". So, attempting to understand and apply this biological code to Minoan society by means of engagement with human physiology, sociobiology, and psychology, combined with a qualitative and quantitative iconographic analysis and overarching synthesis, can provide a solid foundation upon which a better understanding of sexuality, gender roles, gender interactions, societal structure, as well as religious organization of people in Bronze Age Crete can be built. Evolutionary psychologist Geoffrey Miller (2000, 24) agreed with archaeologist Steven Mithen (1996) who argued in *The Prehistory of the Mind* that it is essential to interpret the evidence of human prehistory within a framework of evolutionary psychology where bones, stones, and sherds need to be combined with studies of modern humans, latest advances in evolutionary biology, and data produced by psychology laboratories. This is the approach which the present paper attempts to pursue as part of a larger ongoing study.

Waist-to-Hip Ratio (WHR)

Application of diagnostic methodologies borrowed from a diverse range of disciplines can provide valuable tools for a more insightful reading of Minoan images of female bodies and what these can reveal about the sexuality as well as the religious and social organization in Minoan Crete. One such methodology is the assessment of the Waist-to-Hip ratio, conventionally referred to as WHR, which is widely utilized not only in sociobiology and evolutionary psychology but also in medical sciences. The WHR is a ratio between the circumference of the body at the waist and that at the hips which measures a particular way of how adipose tissue (fat cells) is distributed in a body (Fig. 1). It is identified as a secondary sexual trait which is unique to humans (Bovet and Raymond 2015, 1; Furnham et al. 1998, 313). The World Health Organization developed a detailed protocol for WHR measuring procedures (World Health Organization 2011, 5–6) but in practical terms, the circumference of the waist is measured at its smallest point or about

1 Cadogan 2009, 227; Budin 2011, 276, 282–284; Adams 2013, 5. The Jewel Fresco from Knossos that is often quoted as a rare example of intimacy between the sexes (Adams 2013, 8) is quite fragmentary and ambiguous, the preserved fragment is not sexual or sexually intimate per se and might be part of a formal religious scene of presenting jewellery offerings to a goddess or any other religious ceremony, possibly in a public setting.

1" (2.54 cm) above the belly button and the hip circumference is measured at the widest point of the buttocks or hips and then the waist value is divided by that of the hips (Fig. 1). The evolutionary significance of this metric was discovered by psychologist Devendra Singh (1993, 1994; Singh and Young 1995). The WHR is an extensively-studied subject and among its numerous applications, it has been linked with health and risks of developing certain diseases. The WHR has been found to be significantly more effective in predicting cardiovascular disease that the body-mass index (BMI) or circumference of the waist alone (Mørkedal et al. 2011, 457–461). The specific pattern of body fat distribution associated with a high WHR in women as opposed to the total quantity of body fat can predict more effectively hypertension, heart attack, stroke, diabetes, gallbladder disease, hirsutism, elevated plasma triglycerides, and cancer of the endometrium, ovaries, and breasts (Bjorntorp 1987; Seidell 1992; Furnham et al. 1998, 313). Lower WHR values have been connected to maintaining regular menstrual and ovulatory cycles (Singh 2002). Moreover, high WHR values were proven to raise the mortality rates of both clinically obese and very lean older women (Folsom et al. 1993). The normal range of WHR for western women today is between 0.67 and 0.80 (Furnham et al. 1998, 313; Bovet and Raymond 2015, 9).

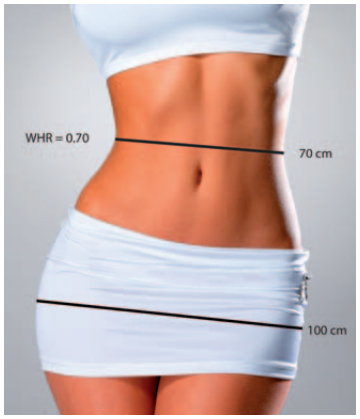

Fig. 1: Measurement and calculation of Waist-to-hip ratio (Valua Vitaly/Shutterstock, with digital alterations by the author).

The health advantages of low WHR values in females have been linked to mating preferences of heterosexual males which is considered to be an evolutionary adaptation developed in order to recognize potential mates with higher probabilities of producing a healthy offspring and remaining healthy and alive for a period that is long enough to raise the offspring into their adulthood when they become fully autonomous. WHR is a well-researched component of female morphology within the framework of men's mate-assessment algorithms. Numerous studies have shown that female figures with low WHR (greater difference between the waist and the hips) were rated consistently as more attractive than figures with higher WHR (Sugiyama 2004; Singh 2006; Singh et al. 2010; Bovet and Raymond 2015). However, physical health is not the only parameter that explains men's preference for mates with low WHRs. A very significant finding showed that lower waist-to-hip ratios in women activate neural reward centers in men, similar to mood-altering drugs, while high WHR numbers have no such effect on the brain (Buss 2018; Platek and Singh 2010).

Another study by William Lassek and Steve Gaulin (2008) showed that WHR is an important indicator that can predict cognitive ability in women as well as in their offspring. Upper-body fat has been proven to have negative effects on the supply of long-chain polyunsaturated fatty acids (LCPUFAs) that are essential for neurodevelopment of the brain while gluteofemoral fat of the lower body is the main storage of the neurodevelopmental resources (Lassek and Gaulin 2008). The correlation between these two fat deposit types is expressed particularly well by WHR numbers. Lower WHR values are associated with higher levels of the omega-3 docosahexaenoic acid (DHA), a type of LCPUFA which is crucial for fetal and infant brain development (Del Prado et al. 2000; Lassek and Gaulin 2008). The study showed that "women with lower WHRs and their children have significantly higher cognitive test scores, and teenage mothers with lower WHRs and their children are protected from cognitive decrements associated with teen births" due to competition between the still-developing teen mothers and their children for the same neurodevelopmental resources (Lassek and Gaulin 2008, 26). Taking into consideration a general tendency in ancient societies for marriages and first pregnancies to occur quite early, during women's teenage years, life expectancy to be relatively low, and mortality rates associated with childbirth to be relatively high, men's potential preference for partners with low WHRs can be understood as an especially important biological mechanism to increase the chances of produ-

cing a healthy and intelligent offspring which provides superior chances of their survival and proliferation of genes. Hence, the reasons behind the rather common elements in female fashions throughout history such as tight belts, girdles, corsets, and/or voluminous draping, padding, or flounces around the hips designed to lower women's perceived WHRs can be understood from this fundamental biological perspective. This naturally raises a question just how universal the low WHR preference in male sexual selection is throughout various geographical regions, time periods, and cultural environments. A large corpus of studies on correlation of female WHR and sexual attractiveness exists today and includes both contemporary industrialized (Furnham et al. 1997; Rozmus-Wrzesinska and Pawlowski 2005) and non-industrialized societies, such as various tribes from Papua New Guinea (Dixson et al. 2010b; Sorokowski and Sorokowska 2012), Indonesia (Singh and Luis 1995), Sub-Saharan Africa, South America, and Western Siberia (Butovskaya et al. 2017; Marlowe et al. 2005). A small portion of such studies appears to represent exceptions (Westman and Marlowe 1999; Marlowe and Westman 2001), however, sometimes, divergent results are produced due to faults in methodology. For example, two studies of the Hazda hunter-gatherer ethnic group of Tanzania produced results suggesting that the Hazda men's preference for a high female WHR was diametrically opposed to that of men in the industrialized West and to the hypothesis of the biologically and evolutionary-driven universality of a low female WHR (Westman and Marlowe 1999; Marlowe and Wetsman 2001). The test-subjects were shown only frontal line drawings of women with different WHRs. However, Marlowe, Apicella, and Reed showed in 2005 that the Hazda men did indeed prefer the low female WHR values in line with men in the United States once the study's methodology was corrected to account for the Hazda men's favoring of higher BMIs and lower profile WHRs, *i.e.* more adipose tissue deposited in women's buttocks than hips (Marlowe et al. 2005). In fact, presented with line drawings of women in profile, the Hazda men preferred lower WHR values (0.6) than men in the United States (0.65) in all three categories: "attractive," "healthy," and "wife" (Marlowe et al. 2005, 463–464). Overall, the majority of studies in this field displays largely consistent findings despite the vastly diverse geographic, cultural, and socio-economic environments (Singh and Luis 1995; Singh et al. 2010; Furnham et al. 1997; Rozmus-Wrzesinska and Pawlowski 2005; Singh 2006; Dixson et al. 2008, 2010a, 2010b; Sorokowski and Sorokowska 2012), especially when such studies are scaled to local environmental context (Sugiyama 2004). Environmental factors as well as fashion or aesthetic trends related to WHRs may fluctuate occasionally, both in time and space, but the persistent underlying evolutionary, physiological, and psychological mechanisms harken back to tens of thousands of years and can provide a solid reference point in our understanding of humans, both ancient and modern.

Waist-to-Hip Ratio (WHR) in Female Images in Minoan Crete

Applying the WHR methodology to the study of human body representations in the Bronze Age Aegean, some significant and insightful indicators emerge. Images that are useful for this study are those from Minoan Crete itself and those from the Mycenaean mainland which directly emulate and are nearly indistinguishable iconographically from the Minoan canon.[2] Starting from MM III A on Crete, women are depicted with large exposed breasts, narrow waists, and wide hips, wearing long, often flounced, skirts (German 2000, 98). This convention became truly embedded as a nearly exclusive format of female depictions in the Neopalatial period (German 2000, 98), which continued into the Postpalatial period. An extensive group of female bronze figurines published in a volume by Colette Verlinden (1984) provides a useful sample for analysis

2 Images that depict the standing upright pose in the unobstructed frontal or equivalent-to-frontal view which make WHR measurement process straight-forward are preferred for methodological consistency. Since two-dimensional images and silhouette drawings are used in the majority of WHR studies of attractiveness and mate selection, consistently, only two-dimensional images of two and three-dimensional artifacts are analyzed in the present study.

No.	Object	WHR*
1.	Bronze female figurine (Verlinden 1984, #33), (Fig. 2a).	0.42
2.	Bronze female figurine (Verlinden 1984, #37).	0.43
3.	Bronze female figurine (Verlinden 1984, #35).	0.47
4.	Bronze female figurine (Verlinden 1984, #67).	0.47
5.	Bronze female figurine (Verlinden 1984, #34), (Fig. 2b).	0.48
6.	Faience 'Snake-goddess' figurine with an animal-topped headdress, from Temple Repositories, Knossos (Fig. 3).	0.43
7.	Faience 'Snake-goddess' figurine with a conical headdress, from Temple Repositories, Knossos.	0.43
8.	Isopata gold signet-ring, frontal figure, far left, *CMS* II 3, no. 51 (Fig. 4).	0.28
9.	Isopata gold signet-ring, frontal figure, center, *CMS* II 3, no. 51 (Fig. 4).	0.29
10.	'Mother of the Mountains' seal impression from Knossos, *CMS* II 8, no. 256 (Fig. 5).	0.39
11.	'Sacred Grove and Dance' fresco from Knossos, female figure with preserved waist and hips.	0.33

*Table 1: Waist-to-hip ratios (WHR) of Minoan female depictions. * The measurements were taken from a combination of electronic and print images, selecting the highest resolution available for each object and some cases, magnifying the scale electronically for greater accuracy. All WHR values of Minoan objects provided here are approximate by nature, since choosing a place where the widest point of the hips should be (concealed by a skirt) and adjusting the image scale can produce a slightly different resulting value which, however, does not significantly affect the general outcome of low WHRs in relation to the normal human range for women of 0.67–0.80 (Bovet and Raymond 2015, 9; Furnham et al. 1998, 313).*

(Figs. 2a–c). Out of thirty-nine total iconographically consistent female figurines dating between the Protopalatial and Postpalatial periods, thirty figurines are methodologically suitable and sufficiently preserved to be metrically analyzed for WHRs.[3] The WHR average of the thirty figurines is 0.54 which is significantly lower than the human female normal range of 0.67–0.80 (Bovet and Raymond 2015, 9). However, what is more representative of the Minoan iconographic model or canon, are the most 'naturalistic' and detailed figurines of the group which possess WHRs between 0.42 and 0.48 (Table 1.1–5). To compare these values to the WHRs of Minoan female representations in other media, images of the two faience Snake Goddess figurines from the Temple Repositories at Knossos (Evans 1921, 501–504, figs. 359–362, 377; Foster 1979, 70–78,

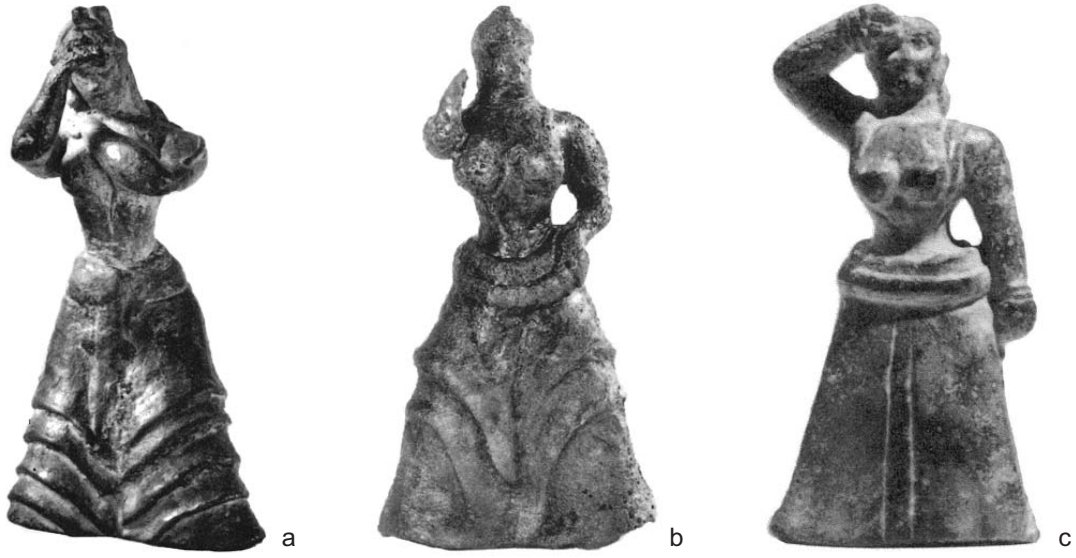

Fig. 2: a) Female figurine, bronze, LM IA (after Verlinden 1984, pl. 16, no. 33); b) Female figurine from Agia Triada, bronze, LM IA (after Verlinden 1984, pl. 17, no. 34); c) Female figurine, bronze, LM IA (after Verlinden 1984, pl. 32, no. 67).

3 All measurements are approximate, taken by the author from the fully frontal or rear-view photographs, recording the narrowest width of the 'natural' waist and the point which corresponds to the widest point of the hips of each figurine; the catalogue numbers in Verlinden 1984 include: 6, 13, 15–16, 33–35, 37, 67–68, 70–72, 99–100, 109, 119, 121–124, 126–127, 143, 172, 174–175, 184, 188–189.

pls. 7–11; Panagiotaki 1993, 1995; Alberti 2001, pl. 1, figs. 1–2; Jones 2016) have been measured using the same methodology and the results showed WHRs of approximately 0.43 for each (Table 1.6–7; Fig. 3). A wide range of female figures depicted on Late Minoan seals have been also measured for this study, including the famous Isopata gold signet-ring (Table 1.8–9; Fig. 4; *CMS* II 3, no. 51; Evans 1930, 68, fig. 38; Cain 2001), the so-called Mother of the Mountain seal impression *CMS* II 8, no. 256 (Table 1.10; Fig. 5), and numerous other seals, signet-rings, and sealings.[4] The WHR values of these are even more exaggerated than in figurines, most range within 0.24–0.36, however, there are even lower values that lie outside of this range (as low as 0.05). A similar tendency towards an emphasis on excessively low WHRs is seen in the female figure in the original section with preserved waist and hips on the Sacred Grove and Dance miniature fresco from Knossos (Evans 1930, 66–67, pl. XVIII; Davis 1987, 158) which shows WHR of approx. 0.33 (Table 1.11). The overall corpus of such images commonly displays a particularly heightened attention given to garments which highlight and/or visually enhance the key secondary sex characteristics of the female body and facilitate the display of a low WHR, hence, communicating its value in respect to fertility, health, and other related factors. Therefore, the exaggerated focus on one of the most significant stimuli in evaluation of female sexual attractiveness that is seen in Minoan imagery, especially cult-related iconography, may point to the cultural and religious significance of sexual selection for reproductive potential in Minoan society.

WHR and Female Breast Size

An influential study by Singh and Young (1995, 489) showed that female figures with low WHR were perceived by heterosexual male participants more attractive regardless of their breast size, however, large breasts increased attractiveness ratings of slender figures with high WHR over similar figures with small breasts. Independently, large breasts stimulus was compared to that of smaller breasts with all other criteria being equal which showed statistically significant, more than triple increase in men's courtship solicitation events (Gueguen 2007). Larger breasts also "significantly enhance the ratings for slender figures with low WHR compared to figures with high WHR" and it was relevant for both short-term and long-term mating strategies (Singh and Young 1995, 490–492). Also, "slender figures with high WHR and large breasts were rated as healthier than slender figures with the same WHR but small breasts," (Singh and Young 1995, 491) an important factor that also relates to the women's perceived fertility level and sexual desirability. Other studies confirmed the significance of WHR and breast size combination compared to other combinations of variables, which received higher ratings on reproductive capacity, healthiness, and physical attractiveness (Furnham et al. 1998, 2006). The evolutionary significance of these morphological traits in females and how gynoid shape is processed and analyzed by heterosexual males in regards to potential mate value, fertility, and health has also been studied by means of pupillometric research and eye-tracking procedures that quantify eye movements, number of visual fixations, and dwell time on these stimuli (Dixson et al. 2011). An important study by Grażyna Jasieńska et al. (2004) shows that women who are characterized by both large breasts and narrow waists have 26 % higher mean 17-β-oestradiol (E2), 37 % higher mean mid-cycle E2 levels, and increased progesterone levels which are associated with higher fecundity and probability of conception than women with other combinations of body-shape variables.

Female Breasts in Minoan Crete

Many scholars duly noted the most striking aspect of the Minoan iconography of women's bodies, as Ellen Adams (2013, 7) phrased it, "females possess unrealistically large breasts, narrow waists and wide, swinging hips." The consistently low WHR numbers in Minoan female representations are accompanied by a clear predilection towards larger-size breasts which can be seen across various media, especially in figurines and seals (Fig. 2b–c, 3–5). The fact that Minoan wo-

4 Including *CMS* I, no. 191; II 3, no. 326; IX, no. 154; XI, 27, etc.

Fig. 3: Faience 'Snake-goddess' figurine from the Temple Repositories at Knossos (Davis Lazdovskis / Shutterstock).

*Fig. 4: The gold signet-ring from the Isopata necropolis, Knossos (*CMS *II 3, no. 51; courtesy of the* CMS *Heidelberg).*

*Fig. 5: 'Mother of the Mountains' seal impression from Knossos (*CMS *II 8, no. 256; courtesy of the* CMS *Heidelberg).*

men's breasts are usually depicted exposed acts as a particularly strong and direct sexual stimulus which would naturally elicit a physiological arousal response in men. As William Masters and Virginia Johnson (1966) describe, the volume of breasts increases during female sexual arousal and erection of the nipples occurs, this in turn, provides a clear visual cue for men. Neuroscience research shows that stimulation of women's nipples lights up in functional MRI images all three sensory maps in the parietal cortex of the brain corresponding to clitoris, vagina, and cervix (Komisaruk et al. 2011). From a functional standpoint, this means that beside child-nursing aspects of the breast, it also functions as a sexual organ. Undoubtedly, breasts are less eroticized in tribal societies where women go topless than in the modern industrialized environment, however, even in such subsistence societies, breasts are not devoid of sexual significance and are commonly stimulated during foreplay (Ford and Beach 1951; Barber 2013). It can be debated whether women in Bronze Age Crete were topless on a daily basis or revealed their breasts only for special religious occasions, however, the latter might be somewhat more likely since Minoan society was closer to an industrialized than a tribal subsistence society, and it maintained significant cultural interactions with the neighboring Near East and Egypt where breasts were generally concealed.

Since the Victorian age of Arthur Evans, some scholars have been fascinated and titillated by the Minoan iconographic element of exposed breasts while others have dismissed or avoided confronting its conspicuous and provocative nature directly, being influenced either by a modern version of 'aidos' (*i.e.* shame, modesty) and contemporary religious and social ethics or by progressive feminism that can sometimes interpret such display not only as a symbol of female empowerment but also as objectification of a female body. The basic symbolism of the exposed female breasts in Minoan Crete has been well understood and described since the times of Evans and often discussed in the context of the Great Goddess or Mother Goddess (James 1959; Gimbutas 1974), as did Erich Neumann in his 1955 (1972) analysis of this archetype. Neumann (1972, 46–47, 123–126) connected the female breast symbolically to a vessel, bowl, or chalice, the concepts of containing and nourishing, and the idea of giving-outward and donating. The uncovering of the breasts in Minoan context is something that he considered a sacred action associated with the cult and thought that the priestesses of the Great Goddess displayed their breasts full of milk as "symbols of the nourishing life stream" (Neumann 1972, 128) and as a physical mode of worshipping the Goddess. Andrew Stewart (1997, 34) describes the faience Snake Goddess figurines from Knossos as "voluptuously bare breasted" and includes them into a general discussion on female nudity and eroticism. Christine Morris (2009a, 247) in the *Iconography of the Bared Breast in Aegean Bronze Age Art* states cautiously that it cannot be assumed either that this imagery had an erotic dimension or that it was entirely devoid of sexual connotations. Also,

Adams (2013, 15) believes that "breasts are highlighted or celebrated: not in terms of a single function such as nurture or erotica, but as a status symbol." Benjamin Alberti (2001, 200) points out that the glazes of different colors were used for the faces and breasts of the Knossian Snake Goddesses and believes that this "alludes to the status of the breasts as distinct or detachable from the rest of the body". As if afraid of his own intellectually unmediated autonomic response to the fleshiness of the breasts which are highlighted in the lightest color glaze creating the focal points of the figurines, projecting forward, and intruding into the viewers personal space, he attempts to neutralize their power and dissociate them from a living human body being depicted, describing the breasts as "an integral part of the costume" and part of "the dress and ornamentation of the figurines" (Alberti 2001, 200). Alberti sees the breasts almost as inanimate and detachable objects that together with clothing, adornments, and other external factors such as the medium, context, placement, and performativity of the figurines produce a conditional sexed body, not as an organic and intrinsic part of a sexed Minoan body as a whole. Bernice Jones (2001, 264) suggests that the Minoan open bodice was meant to "facilitate breast-feeding" and rituals connected to "fertility and/or sexuality," thus only implying but not directly engaging with the subject of eroticism (Jones 2001, 264). As noted by Senta German (2000, 103), "women's bodies appear to be strategically clothed to reveal and accentuate" the breasts. Morris (2009a, 243) aptly drew attention both to the centrality of bared breasts in Minoan costume and to the lack of focused scholarly attention that it received, "it is perhaps surprising that there has not been more extended discussion of what is a highly distinctive costume, one which not only exposes, but also sometimes shapes, and always frames and draws attention to the breast area." She suggests that it is generally rather unusual for clothing to be specifically *designed* to display the breasts in a very deliberate and direct way, unlike the accidentally "slipped chiton" and the symbolism of sexual vulnerability in Classical Greece (Morris 2009a, 244).

Female breasts are at the core of the most important aspects of the human experience: love, sex, attraction, child-birth, nourishment, and beauty. While the rich and numerous layers of symbolic meaning of the breasts are important to understand, the most fundamental biological response which they elicit is not to be dismissed, suppressed, or ignored. The raw, primeval, and arousing power of female breasts represents an evolutionary force which is even stronger than the survival instinct. A desire for a particular sexual partner and an object of one's love is capable of overriding all other human desires and pursuits. It can even override the most fundamental human instinct, that of self-preservation, and drive humans to do irrational, reckless, and life-threatening things (Miller 2000, 255), exhibit homicidal (Morrall 2006) and suicidal (Love et al. 2018; Yaseen 2012; ABS-CBN News 2011) behavior, and perform heroic acts of sacrificing their own life for the sake of their mate which inspires so many songs, poems, myths, plays, folk tales, and literary masterpieces throughout human history.

Nudity and Sex

Full female nudity is practically absent in Bronze Age Crete (Budin 2011; Hitchcock and Nikolaidou 2012, 511; Vetters and Weilhartner 2018, 552). Unlike the Egyptian sheath dress which tightly clings to the body and accentuates the pubic triangle, or the full-frontal nudity associated with the iconography of the Near Eastern goddesses Astarte, Ishtar, or Inanna (Bahrani 1993; Budin 2001), Minoan women's lower body is almost always concealed by a floor-length, opaque, bell-shaped, and sometimes flounced skirt (Jones 2015, 57–65). There is only a handful of exceptions from this rule: rather atypical examples of seated terracotta figurines published by Stephanie Böhm (1990); an anthropomorphic clay vessel from Gournia, Crete dated to the LM III A2/B period which represents a crouching female with an enlarged vulva (Rethemiotakis 2001, 24–25, fig. 27); and a bronze figurine from Makrygialos dated to the LM I B period which was featured by Eleni Mantzourani in her 2012 publication as the only bronze female figurine and one of few meager exceptions in any medium that depict full female nudity. The figurine has a crude-looking and nearly rectangular-shaped depression with a spherical protrusion on its ventral surface which is

thought to depict a woman's clitoris (Mantzourani 2012, figs. 12.2–3), however, the figure is not truly nude. The woman is depicted wearing the customary long skirt which completely obscures her lower body below the belted waist. Even if the craftsperson attempted to break the social and religious taboo of full female nudity, he or she seemingly avoided overstepping that boundary entirely by removing the skirt.[5]

*Fig. 6: Seal from Galana Harakia, Viannos, Crete (*CMS *II 1, no. 446a; courtesy of the* CMS *Heidelberg).*

*Fig. 7: Gold signet-ring (*CMS *VII, no. 68; courtesy of the* CMS *Heidelberg).*

Strategic exposing of certain body parts, such as breasts, and concealment of others can indicate some degree of ritualization and symbolism attached to the garment. Possibly, the pubic area was concealed in Bronze Age Crete for the same reason why unambiguous depiction of an intercourse and intimacy between the sexes was forbidden or discouraged. There are two pieces that are sometimes considered to be exceptions but both of these rather illustrate the old proverb in which an exception proves the rule. The first one, an EM III–MM I A seal from Galana Harakia in the Viannos region of Crete (*CMS* II 1, no. 446a) is referred to by Gerald Cadogan (2009, 228) as "just one certain depiction" of a copulating couple before the Final Palatial period (Fig. 6). It shows two anthropomorphic creatures which appear to be embracing, however, they are definitely not fully human. These two figures have pronounced avian features such as large beaks and three sharp claws on each foot, and since they are both flat-chested, their gender is ambiguous or, possibly, male in both cases. The scene might be implying sexual intimacy or a mere friendly hug but it is almost as if the craftsperson tried to circumvent a taboo by including enough animal features to avoid violating the rules for human representations. Depictions of sexual intercourse between animals are rare but likely not forbidden, as can be seen in images on seals such as *CMS* VII, no. 68 (Fig. 7), *CMS* II 2, no. 306a, and possibly *CMS* II 1, no. 369, as well as few examples in other media, such as a miniature terracotta figurine (Rehak 2009, 15, pl. IIg). The second piece that is considered an exception from the human intimacy rule, or rather the rule of its absence in pictorial representations, is the LM III B clay model from Lastros, Siteia (Platon 2016) depicting a man and a woman inside of a large bathtub. However, there is no touch or interaction between the figures, these two are placed on the opposite ends of the long tub, far away and out of reach of each other (Platon 2016, figs. 1, 4). The man has what looks like an erect penis, however, the female is not fully nude but wearing a full-length skirt (Platon 2016, figs. 4–6).

Visual representations are in a very intricate and tightly interconnected relationship with real life and this relationship is not a constant construct but a continuous process (Adams 2013, 4). Iconography reflects reality, conscious and subconscious thought patterns, cultural practices, etc., but images also influence realty, impact people's understanding of life, of themselves, of culture-specific norms, and codes of behavior on a continuous basis, both unconsciously and as part of a deliberate strategy (Adams 2013, 4, 17–18). Mediating of mate selection modes and procrea-

5 To add to this discussion, Senta German (2000, 105–108) identifies a number of sealings from the unique Zakros Master workshop group as representations of female nudity and the only erotic images in Minoan Crete. However, none of these figures are fully human, they all represent fantastic hybrid creatures or even mere emblems consisting of animal and human body parts. The sealing with an ox-headed figure with bird's wings and tail, and human female breasts and legs, which German (2000, fig. 8.5) gives as an example of nudity and erotica, hardly represents either since depiction of any type of sexual organ is entirely absent between the creature's squatting spread-out legs.

tion strategies occurs in every society, however, a degree of importance, regulation, and focus which is placed on this sphere varies in different time periods, geographic topoi, and cultures. The subject of regulation and control of sexuality is extensively studied in the context of modern societies and organized religions (Inglis 2005; Bouhdiba 2007; Wiesner-Hanks 2010) where along with texts, the iconographic sphere historically gets controlled and molded by means of framing visual modes and narratives, shaping emotional and intellectual responses of viewers, suppressing or amplifying instinctual responses, manipulating context, prohibiting, including, and excluding. However, this subject is far less understood in the context of Aegean prehistory due to the objective lack and fragmentary nature of available evidence. When it comes to such a fundamental part of life as human intimacy and sex, its iconographic omission (Rehak 1998, 193; Cadogan 2009, 227–228; Vetters and Weilhartner 2018, 553) is no less, if not more important and informative than its inclusion. It appears to be a deliberate decision, a conscious choice which reflects both a great importance of this sphere and attention given to its mediation and control.

Both subtle representations of intimate gestures and explicit depictions of sex were produced in Egypt (*e.g.* the canonical embracing pose of a pharaoh and his wife; the Turin Erotic Papyrus #55001 from Deir el-Medina: Omlin 1973; Shokeir and Hussein 2004), and the Near East (*e.g.* Mesopotamian terracotta plaques with embracing couples and sexual intercourse: Leick 2008) but Minoan Crete clearly chose to reject these external iconographic influences (Vetters and Weilhartner 2018, 553). The virtual absence of nursing scenes or *kourotrophoi* in Minoan art (Olsen 1998, 380–381; 2014, 5; Cadogan 2009, 228; Adams 2013, 5), the scenes which were quite prominent in their Mediterranean neighbors' and trade partners' (Panagiotopoulos 2001) iconographies, shows the same selectivity, a deliberate choice rather than an accident. Stephanie Budin (2011) also points out that it seems, Minoans actively resisted a temptation to mimic the iconographic expression of these cultural and religious customs of their neighbors. If despite the awareness about foreign iconographic approaches to this important human sphere, the Minoans merely considered it too religiously or culturally irrelevant to depict in their own context, it would have been almost impossible not to find at least a handful of occasional artistic experiments or informal images depicting such common and universal concepts as female nudity, breastfeeding, intimacy, and sex, unless there was at least some level of a centralized effort to suppress, ban, or discourage such depictions. Thousands of Minoan artisans over many centuries were spending long hours in their workspaces in towns and villages all over the island and utilized their observations of the surrounding nature, people, and their daily life in their work, experimenting with composition, style, techniques, and subject matter. Practically, the only way of preventing every single craftsman, ultimately, a regular man with human instincts, biology, creativity, and inquisitive mind, in every corner of Minoan Crete from producing depictions of what he might have fantasized about/felt towards/did in bed with his wife or partner, of seeing her bathing in the nude or while breastfeeding their child – the most common and natural activities – would have to have been an upbringing and education in the culturally and/or religiously-inspired ideological environment where images related to sex and procreation were regulated and restricted. The iconographic control of sex and child-nursing seems to be an important tool of managing religious and social order, of formation and retention of cultural identity, and of social cohesion in Minoan Crete. It appears that sex and breast-feeding were considered to be sacred, ritualized, and concealed in secrecy, possibly something too sacred to depict. Interconnectedness of sex, love, and religion (Goldberg 1932), viewing sex as a deeply sacred and secret ritual, and considering life, sexual pleasure, and love as gifts of the Goddess is a long-standing concept (Eisler 1995, 15–16, 58–62). So, while this likely prohibition and secrecy are unusual if compared to the larger Mediterranean context in the Bronze Age, these attitudes are not lacking their own intrinsic logic, rationale, and purpose. After all, this is only one of many ways in which Minoan Crete differed from its neighbors.

Minoan Garments

When it comes to the luxurious and elaborately decorated female attire in Minoan Crete, it would have taken a significant investment of time and material to create, therefore, unlikely to have been worn everyday while performing strenuous and messy labor tasks such as tending to domestic animals, crops, food preparation, or crafts. The special religious significance of Minoan dress can be seen in the faience plaques from the Temple Repositories at Knossos in the shape of the ornate female garments (Evans 1921, 506, fig. 364a–b; Foster 1979, 86–89, pl. 17, figs. 17–18; Panagiotaki 1993, 1995; Adams 2013, 14–15, fig. 4c). It is depicted worn by goddesses and women primarily in religious contexts, so the exposing of the breasts in public by Minoan women possibly was reserved exclusively for ritual activities and religious events. Biologically speaking, the ritualized revealing of breasts in a public setting can be seen as an action utilized for sexual arousal of men, fertility display, and a signal for the start of the competition for mating privileges. The long skirt in Minoan costume, on the other hand, acts as a formidable wall, a fortress that needs to be scaled to be brought down in order to get inside, to the 'holy of holies'. In the case of older women wearing the same garments, like those seen on the Thera frescoes (Davis 1986, 403–404; Doumas 1992) where the women are seen in clearly ritualized and religious contexts, their dresses might symbolize the fertility goddess who presides over the mate selection rituals or these might signify their priesthood status/service to the goddess and/or their teaching capacity and facilitation of fertility and mate selection rituals for younger participants as if in a right-of-passage cycle of generations (Karageorghis 1990).

The primary male garments are a short kilt, a loincloth and a codpiece worn with a belt (Rehak 1996, 42–45; Lee 2000, 116). However, there is a pronounced preference for the codpiece or as Mireille Lee (2000, 116) aptly identified it, a "phallic sheath," in figures depicted in the so-called worshiper pose which is primarily associated with and/or addressed to a female, especially in Minoan glyptic, such as *CMS* II 8, no. 256 (Fig. 5) and *CMS* V, no. 199 (Fig. 8a). Men participating in public rituals are usually depicted wearing nothing besides a loincloth or a codpiece that accentuates their phalluses and allows them to exhibit their slender, toned, and youthful physiques, for example, as can be seen in the famous Sacred Grove and Dance Fresco from Knossos (Evans 1930, 66–67, pl. XVIII; Davis 1987, 158). The gold signet-ring *CMS* V, no. 199 (Fig. 8a) is an even more direct illustration of a male physical and sexual fitness display represented by the man's enlarged erect penis exhibited to a seated female who has exposed breasts and points to or holds one of her breasts with her hand. Similarly, a gold signet-ring from Kumköy (Kilyos; CMS XI, no. 28) displays a man with an erect phallus addressing a bare-breasted female (Fig. 8b).

Male Body in Minoan Crete

In Minoan Crete, males are depicted almost exclusively with lean, youthful, athletically-built, and idealized bodies, possessing broad shoulders, thin waists, and long toned legs. Probably, the most common and fundamental male stance is the worshipper pose which is associated with Minoan cult activities. The men are depicted standing upright, with their shoulders lowered and brought back, chests and/or groin protruding forward, and hand gesture in which the right hand is placed to the forehead and the left one rests along the side of the body (Figs. 5, 9a–c). A possibly related gesture displays both

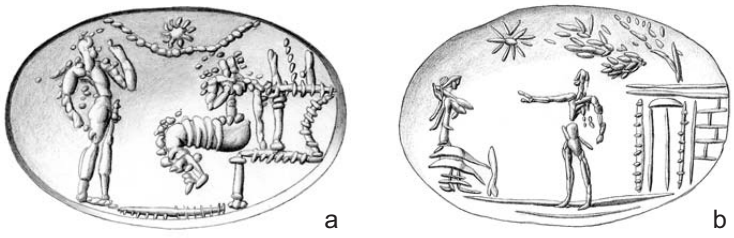

*Fig. 8: a) Gold signet-ring from Thebes, Boeotia (*CMS *V, no. 199; courtesy of the* CMS *Heidelberg); b) Gold signet-ring from Kumköy (Kilyos) (*CMS *XI, no. 28; courtesy of the* CMS *Heidelberg).*

Fig. 9: a) Male figurine, bronze, end of MM III–LM IA after Verlinden 1984, pl. 12, no. 28); b) Male figurine, bronze, from Tylissos, end of MM III–LM IA (after Verlinden 1984, pl. 28, no. 56); c) Male figurine, bronze, end of MM III–LM IA after Verlinden 1984, pl. 10, no. 24).

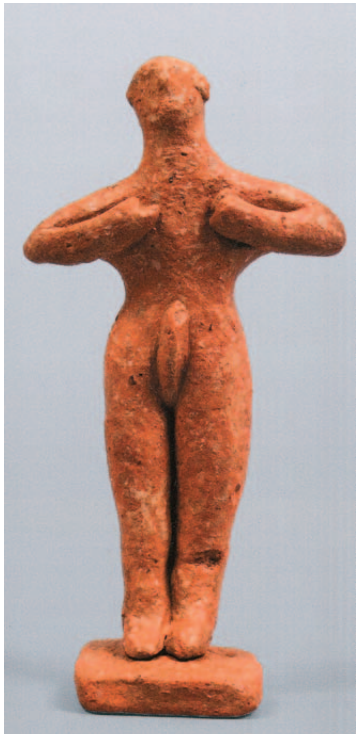

Fig. 10: Clay figurine from Petsophas (after Andreadaki-Vlazaki et al. [eds.] 2008: 222, #177).

hands placed on the chest with bent arms positioned at about 90-degree angle to the body (Fig. 10). Slight variations of these two gestures are also present. These are usually understood as gestures of "prayer or adoration" (Lee 2000, 116; Morris 2009b, 182). Yet, the worshipper stance and its variations are not those of modesty or bodily shame. There is no attempt to hide the body, quite the contrary, the body in its youthful physical prime is proudly displayed and celebrated. Interpreting the canonical stance of Minoan males through kinesics, a field in psychology that studies nonverbal communication and behavior, this pose in its context can be understood as communicating a range of messages centered around assertiveness, self-presentation as part of impression management, display of fitness, of readiness, and/or of valor, competitiveness, pride, and self-dedication (Birdwhistell 1970; Knapp et al. 2013). This stance is far from submission and humility before gods as the term 'worshipper' may imply. Instead, this characteristic display of the body projects confidence and solicits evaluation of physical fitness, health, strength, and reproductive fitness, hence, may be related to sexual selection. Such nonverbal human behavior has been linked with a common animal behavior where an expanded and brought-forward chest communicates strength and pugnacity to other males in sexual competition for a female and displays sexual fitness to a potential mate (Buss 2016, 13).

Minoan male figures often display an emphasized erect reproductive organ, either nude or more often, accentuated by a codpiece or a loincloth garment, which is seen especially frequently in religious contexts. It appears that the worshipper stance is associated with a specific performative aspect of religious practice which was focused on displaying male procreative fitness to a female goddess and human women of fertile age who could have been viewed both as potential mates and as representatives, avatars, or embodiments of the goddess. The male worshiper figurines were most commonly produced in bronze and clay and their function is most commonly identified as votive (Lee 2000, 116). An extensive representative sample published in the volume on anthropomorphic bronze figurines from Bronze Age Crete by Verlinden (1984) has been analyzed by the author for the present study. There are ninety-four

identifiable and preserved below the waist male figurines in total from the Protopalatial to Postpalatial period, 67 of which exhibit an erect, enlarged, and/or emphasized penis,[6] which is 71% of the total (Fig. 9a–c). Out of the remaining figurines, fifteen are too schematic and crude or poorly preserved to clearly identify their anatomy and in twelve, the penis is not visible or concealed by a garment. Out of the ninety-four total, five figurines conform to the male worshiper iconography and masculine body proportions but contain both a phallus and female-like, accentuated breasts, which might represent either hermaphrodite, homosexual, or non-binary status.[7] These appear to perform the male gender role.

A similar emphasis on the male primary sex characteristic is seen in numerous clay figurines from Minoan peak sanctuaries, such as male torsos from the peak sanctuary of Vrysinas (Tzachili 2012, figs. 25.1–2), the "Vrysinas Ephebe" (Sphakianakis 2012, figs. 22.1–2), and worshiper-type figurines found in the Minoan peak sanctuary at Petsophas (Rutkowski 1991, 58–73, pls. A–B, III–X, XII–XIII, XV–XVIII, XX, XXII; Nowicki 2012). Whether wearing a phallus sheath or being nude, many of the Petsophas figurines display an emphasis on the groin area, and the penis appears erect and exaggerated in size. This fact can be confirmed by means of a comparative analysis of numerical ratios.[8] A representative example of the male clay figurines from the peak sanctuary at Petsophas is the MM II Agios Nikolaos AM #9953 (Fig. 10; Platon 1951, 120–122; Rutkowski 1972, 73–98; Zographaki 2008, 222, #177). The ratio of the height of the figurine to the erect penile length is 5.54, which is less than half of the average human ratio of 13 (see footnote 3 for the calculations), hence, clearly shows the significantly enlarged relative size of the phallus. The ratio of the figurine's height to penile diameter is 18, which is 2.6 times lower than the corresponding ratio of the 46.17 average recorded in human males. Similarly, the ratio of the height to penile length of another nude figurine from the same context, Agios Nikolaos AM #9955 (Platon 1951, 120–122; Zographaki 2008, 223, #178), is 6.92. Quantifiably, this seems to indicate that the male sexual organ and procreative potential are greatly emphasized and appear to represent an important aspect of Minoan religious practice.

Gender Roles and Interactions

In Bronze Age Cretan iconography, men seem to display their procreative fitness to women, possibly competing amongst each other for a mate, while women appear as decision-makers, choosing if the men should be allowed access to the evolutionary prize of procreation which they themselves control physically and female divinities control on a symbolic level. These power dynamics can be recognized in images carved on seals, where men appear in an obeisant, adorant, or supplicating position and women are depicted either physically elevated above men (Fig. 5), seated, often on a platform, while a man stands before them (Figs. 8a–b, 11–12), and/or hierarchically larger in scale (Figs. 11–12; Graeber and Wengrow 2021, 485). Louise Hitchcock and Marianna Nikolaidou (2012, 508) suggest that "female identity is associated with collectivity while male identity is defined by individuality". However, it might be somewhat anachronistic and unjustly dismissive of femineity to consider men's participation in warfare, hunting, and sports to represent "individual 'real-life' achievements" in contrast to "the stereotypical symbolism surrounding femininity" (Hitchcock and Nikolaidou 2012, 510) as an indication of superior importance or

6 Verlinden 1984, cat. #11, 22, 24, 28, 31, 41–42, 44–49, 52, 54–58, 60, 62, 77, 80–81, 84, 87–88, 93–94, 97–98, 101–108, 110–113, 115, 128, 133, 135, 139, 140, 142, 144–146, 150–151, 153–156, 159, 161–164, 167, 179, 187.

7 Verlinden 1984, cat. #11, 154, 180, 185, 187.

8 Compiled data of 21 independent studies completed between 1985 and 2014 among volunteers from sixteen different countries in Europe, North America, Asia, Africa, and the Middle East, collectively including 15,521 men produced the total average erect penile length of 13.12 cm, 13.24 cm total average stretched penile length, and 3.71 cm total average erect penile diameter (Veale et al. 2014, 981, table 1). Using data from a 2016 study which calculated the World average height of males as 171.28 cm (NCD-RisC 2016; Roser, Appel, and Ritchie 2013), the ratio of the average male height to the erect penile length is 13.05 and to the average stretched penile length is 12.94 (13 is the average of these two ratios).

*Fig. 11: Gold signet-ring from Mycenae (*CMS *I, no. 101; courtesy of the* CMS *Heidelberg).*

*Fig. 12: Lentoid seal, chlorite (?) (*CMS *X, no. 261; courtesy of the* CMS *Heidelberg).*

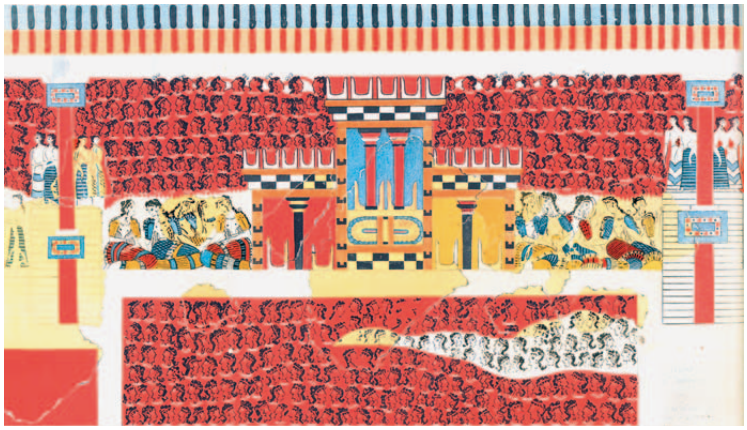

Fig. 13: The Grand Stand fresco, Knossos (after Evans 1930, pl. XVI).

leading role of men in Minoan society. Men providing protection, doing the most physically taxing and dangerous work, serving fruits of their labor to women, as well as competing with each other and supplicating women for procreative privileges may not have been viewed by the Minoan society in the same way as it is viewed in the modern Western society today. As far as the greater "individuality" of men in Minoan iconography, the Grandstand Fresco from Knossos (Fig. 13; Evans 1930, 46–57, figs. 28–34, pls. XVI–XVII) shows rather the opposite, *i.e.* men are represented as a uniform crowd, a mass of identical heads, while most women are represented fully as individuals, with different poses and gestures, dress details, seated centrally and leisurely conversing with each other (Adams 2013, 9–10), or standing on elevated stepped platforms high above the crowd. Modern sciences beyond archaeology might provide a helpful key for better understanding of Minoan gender roles and relationship dynamics.

Sexual Selection

Charles Darwin's groundbreaking discoveries published in his works *The Origin of Species* and *The Descent of Man* (1936) which were related to the theory of the natural selection quickly received world-wide acceptance. However, his theory of sexual selection through female choice was largely rejected and suppressed due to the profound ideological biases and sexism of the Victorian England and the 19th century Western world at large. For many decades, until the 1970's, the concept that the females were the decision-makers, in control of the fundamental evolutionary mechanism, was considered unthinkable and was either harshly criticized or ignored altogether. In the late 1970s and 1980s a breakthrough in theoretical application of sexual selection to humans was pioneered by evolutionary psychologist David M. Buss, who, along with a number of his colleagues, was at the forefront of the creation of a new discipline, evolutionary psychology (Buss 1994, 1995). A significant advancement in human-mating research came with Buss' extensive cross-cultural study of human mating behavior, published in 1989, that included 10,047 individuals from Europe, North and South Americas, Asia, Middle East, Australia and Africa, from both urban and rural backgrounds, of various ages, levels of education, and social, political and economic systems, with collaborators from across 37 cultures (Buss 1989), which was replicated in 2020 across forty-five countries, engaging 14,399 respondents (Walter et al. 2020). Both studies confirmed previous evolutionary hypotheses and showed a robust and consistent set of universal sex differences in preferences for mate attractiveness, some of which can be

successfully utilized in the field of the Aegean prehistory. The original study showed that in thirty-six out of thirty-seven cultures, women rated men's ability to acquire and confer resources as the most important factor in their mate selection, and in thirty-four out of thirty-seven cultures men preferred partners characterized by physical attractiveness, a value which corresponds with a high reproductive potential (Buss 1989, 1–14). The most recent study followed closely and confirmed these findings (Walter et al. 2020, 408–423). These values are a product of millions of years of human evolutionary history, and their roots can be found deeply in animal sexual selection processes. Sexual courtship has been understood since the age of Darwin as "one of the riskiest, most exhausting, most complex activities in the animal world", as evolutionary psychologist Geoffrey Miller (2000, 50) aptly described it in his influential book *The Mating Mind: How Sexual Choice Shaped the Evolution of Human Nature.* One may not agree with a rather reductionist view of sociobiologist Edward Williams (1975, 138) that "in its game of life the masculine sex is playing for higher stakes", which diminishes the high stakes of a female's mate choice that determines survival and procreative success of herself and her offspring, however, the risks of male-to-male competition for a mate and displays of sexual fitness to females are undeniable. In the animal world, the bizarre and conspicuous forms of sexual competition go as far as endangering survival of individuals and entire species (Buss 2016, 3). Because it is adaptive to males to feign fitness, whether or not they are truly fit, the adaptive response of the females is "to be resistant to courtship – thereby evoking further and stronger displays – in order to discriminate genuinely fit males" (Symons 1979, 24). This animal behavior forms the foundation of the human sexual selection through female choice where men compete and attempt to display their procreative fitness and capability to acquire resources to women and women often fend off initial courtship and play hard to get in order to scrutinize the suitors' fitness and decide who is worthy to be granted the privileges of mating and procreation.

Conclusion

The dangerous competitiveness of animal sexual selection can be directly linked to human sports. Such human activities can be seen as a highly risky behavior which does not always justify the benefit of improving physical fitness or fighting skills purely from the standpoint of a survival strategy. Sports may overamplify the risks to a participant's health and life, historically, without an explicit monetary prize, providing only a symbolic prize of status, at the same time, "each sport could be viewed as a system for amplifying minor differences in physical fitness into easily perceivable status differences, to make sexual choice easier and more accurate" (Miller 2000, 253). Male contests serve as an important mechanism of human sexual selection (Puts 2010). The Minoan sport of bull-leaping (Younger 1976; Marinatos 2005, 155–158; McInerney 2011; Shapland 2013) would not prepare one for a military combat and would be too risky and inefficient to merely increase physical fitness or appease a divinity. It is more likely that the reproductive advantages and access to a pool of sexual partners at the top of their fertile prime were the fundamental rationales for the bull-leaping sport in Bronze Age Crete. Likely, it operated as a part of an overarching social fabric and religious apparatus which was structured around sexual selection. In fact, males of all species of mammals in the animal kingdom risk incurring injury or death in ritualized sexual competition, following a very specific and repeated format and sequence of steps in mating games (Miller 2000, 255). Just as in the animal world, men compete, women choose. Women determine which male is fit to mate and to leave their genetic imprint through their offspring, and which males will remain genetic dead ends. Just as nature intended, women are in control of the evolutionary course. This most fundamental and meaningful mechanism of sexual selection appears to be at the core of Minoan society and religion which is reflected in the notably prominent and at times hierarchically superior position of women in the Minoan iconographic tradition, be it on seal-stones, frescoes, or in other media. The separation of the sexes often seen in Minoan imagery, such as the Grandstand Fresco from Knossos (Fig. 13; Evans 1930, 46–57, figs. 28–34, pls. XVI, XVII), potentially acted as the mechanism to systema-

tically control the access and mode of interaction between the sexes, to heighten anticipation and excitement, as well as to intensify and mediate the emotional and physical response to the ritualized coming together of the sexes. The apparent restrictions placed on depiction of human intimacy and sex in Minoan Crete seem to have served a similar function. In the striking absence of such common Egyptian and Near Eastern motifs in the Minoan iconographic canon as a self-aggrandizing male ruler smiting his enemies, promoting his military accomplishments, or advertising his closeness to gods, it appears that the political and religious ruling elites on Crete were using a different mechanism of maintaining social cohesion and control, one that utilized ritualization, mediation, and control of the people's sexual selection and modes of procreation, and following nature's course, a significant role in this mechanism was reserved for women. A synthesis of the main iconographic features in Minoan representations of male and female bodies presents numerous indicators supporting this hypothesis. As it has been proposed above, the ultra-low female WHR values, the large-size and exposed female breasts which, both alone and especially in combination with the low WHR numbers, act as a heightened sexual stimulus as well as a display of general health and physiological fertility (linked with the levels of female hormones), the emphasis on erect and prominent male penises in the ritual, competitive, and female-oriented contexts, the so-called worshipper pose and bull-leaping sport acting as displays of male physical and procreative fitness to females – all these features seem to point to the centrality of sexual selection and physical fertility in Minoan society and religion. Hence, the ritualized practice, symbolic reenactment, and celebration of the natural process of sexual selection in Minoan culture can be seen as carrying a deep logic, wisdom, and something not only culturally distinctive but also relatable for us both as scholars and human beings.

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