

Original article

HIGHLIGHT OF COMPARISON BETWEEN THE GAZELLE BEHAVIOUR IN THE NATURAL ENVIRONMENT AND IN THE ANCIENT EGYPTIAN SCENES

Khalil, H.<sup>1</sup>, Nur-El-Din, A.<sup>2</sup> & El Kenawy, M.<sup>3</sup>

<sup>1</sup>Egyptologist Egyptian Museum, Cairo, Egypt

<sup>2</sup>Prof. Ancient Egyptian dept., Faculty of Archaeology and Tourism Guidance, Miser Univ. for Science and Technology, 6<sup>th</sup> October, Egypt.

<sup>3</sup> Assist. Prof. Egyptology dept., Faculty of Archaeology, Cairo Univ., Giza, Egypt

E-mail: [heba\\_111985@yahoo.com](mailto:heba_111985@yahoo.com)

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**Abstract**

Representations of animal behaviour in ancient Egyptian art based on ancient Egyptian observations are closely related to the natural habitats of these animals. The ancient Egyptians artists represented two species of gazelle genus in ancient scenes over their tombs walls; they are Dorcas gazelle, and Sommering gazelle. Both of two kinds are displayed in different behaviours such as: LOCOMOTOR, comfort behaviour, sexual behaviour, hunting behaviour "predation and escape from danger", in addition to parental behaviour.

**Keywords:** Dorcas gazelle, Sommering gazelle, Behaviour, Licking, Mating, Fawn.

**1. Introduction**

The representations of animal behaviour in ancient Egyptian art based on ancient Egyptian observations closely for the natural habitats of these animals, or when these animals are in captivity, most of these scenes dating to pre-early dynastic period and it continued through historical ages mainly through hunting

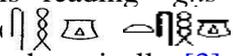
**1.1. Dorcas Gazelle** 

The dorcas gazelle is the species that is most frequently depicted in ancient Egyptian art [1]. The most distinctive characteristic of dorcas gazelle is its horns, found in both male and female. They are ridged and lyre-shaped, bending backwards in a slightly S-shap

**1.2. Sommering gazelle** 

The Soemmerring's gazelle, in reality, is larger than the dorcas. Its horns

and thus most of various stages of gazelle behaviours represented in hunting scenes and some offerings scenes. The ancient Egyptians represented two species of the gazelle genus in ancient Egyptian scenes over tombs walls: Dorcas gazelle, and sommering gazelle are displayed in several different behaviours.

[2]. The identity of the animal is confirmed with labels reading "ghs-ghst", commonly written  for male and female phonetically [3]. Another famous written with gazelle determinative is 

are also more than twice as long as the dorcas, with the horns of the male growing

up to 58 cm in length, the horns are “lyre-shaped” [3]. The specific distinction for Soemmerring’s gazelle is indicated in the 5<sup>th</sup> dynasty mastaba tomb of Princess *Idut*, of Saqqara, where each animal is carefully labelled *gs3* [4] Soemmerring’s gazelle is found paired with dorcas gazelle in a

number of desert hunt and offering scenes. The animal behaviours presented over wall scenes in postures and situations that seem designed to emphasize their movement as they appear as they do in nature they behave as following categories.

## 2. Behaviours of Gazelle Species

### 2.1. Locomotor behaviour [5]

It comprised of the different methods which animals do in its environment (e.g. walk, run, recumbent... etc.) and

#### 2.1.1. Dorcas gazelle recumbent

Dorcas gazelle is represented in hunting scenes lying down and resting during the heat of the day in the shade of

postures and movements associated with achieving and experiencing rest, the type of which they live.

available trees or bushes in the desert, as shown in fig. (1-a, b).

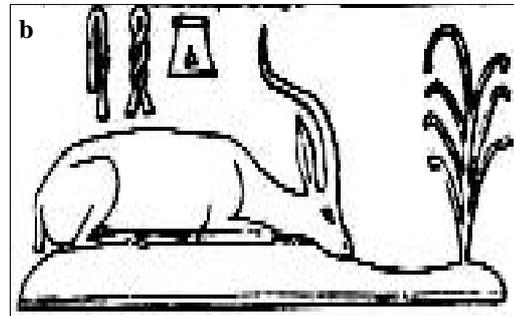


Figure (1) **a** dorcas gazelle recumbent in the desert <http://www.arkive.org/dorcas-gazelle/> - 13-2-2014, **b** Dorcas gazelle "*ghs*" lying down, "Raimka" tomb, 5<sup>th</sup> dynasty, old kingdom. "after Hayes, 1953" [6]

#### 2.1.2. Protecting young

The antelope family particularly protect their young by hiding them from any hunter predators such as lions and dogs. so it has been classified "hidiers", which hide their young among shrubs and trees most of the time, (this depends on the species.) [3] As for Dorcas gazelle, the young are left alone and far away from its Mother for two to six weeks, This behaviour is limited occurrence so when the animal only is very young [7]. the mother keeps far from the place of hiding

its young to avoid stirring attention to him. So, the Mother leaves her young and get back either to feed or through herd moving to grazing areas She depends on her young smell through hiding process [8][5]. Young sometimes turning his head back "fig. 4" for caution imitating the natural behaviour in the natural environment, fig. (2-a, b). The ancient Egyptian represented this behaviour in the desert hunting scenes, where the young calves could be seen lying down.



Figure (2) **a** dorcas gazelle young recumbent alone. <http://stabledays.typepad.com/> - 13-2-2014., **b** Calf of gazelle recumbent among desert sands "after Davies, & Gardiner, 1936" [9].

The young of gazelle was represented in "insert" which was miniature scene characterized by a short ground line, placed within a register, creating a separate scene above the main depiction of the hunt. and it was used for depicting young animals in the background of the main action of the hunt, hiding in the vegetation. These scenes were attached to the main hunting scene [3][10]. The mother fear for its

## 2.2. Comfort behaviour

It includes any action that helps an animal stay in good condition and free

### 2.2.1. Grooming

This behaviour consists of movements toward the body surface to remove ectoparasites (lice, ticks, etc) and clean its body by grooming himself

### 2.2.2. Licking

Licking is defined as the movements of the tip or surface of tongue over an object to remove matter "dirt,

### 2.2.3. Dorcas gazelle licking its back hind leg [11]

The Normal posture of the gazelle to clean himself through licking process is to lick body surface as shown in fig. (3-a). Egyptian artist represented Dorcas gazelle, fig (3-b) licking its back hind leg in the tomb of Ti. Although it is often hard for the animal in "image 6" to take this posture by elevating a hind leg, passing it under its body, and then turning back its head to lick its lifted limb which shown by the gazelle is physically impossible [5]. The gazelle don't groom themselves by licking, but instead rake

young, whom he disappears down among the shrubs and bushes push her to protect him by dancing around in a circular action about a hundred yards away for its young for ten minutes to avoid approaching any strangers to the place, so the young can be easily found, that explains group of young gazelles in the baskets mounted on the shoulders of the shepherds or holders offerings [10].

of irritation, such as grooming, scratching, stretching.

"autogrooming" by licking with tongue, or by nibbling, scraping with teeth, or by scratching with feet, hooves.

insects, fly ashes etc" among the hairs of the coat and to spread saliva over the body surface [5].

their lower incisors through their coat along, upward strokes, as it in "image 5". that explains how the ancient Egyptian artist was unaware of how Dorcas gazelle actually groom and so reproduced the method employed by cattle and other domestic animals, he might also add tongue to the scene to remove any ambiguity of what animal is doing [5]. I agree with Evans, that the technique is wrong, but the message is correct the gazelle grooming itself.

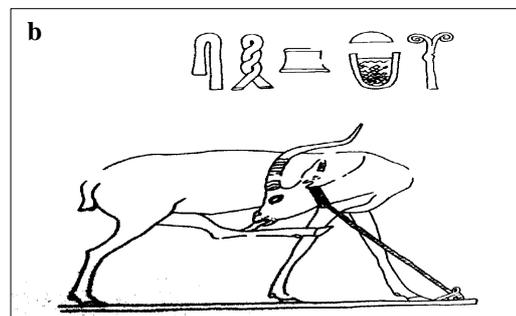


Figure (3) **a** gazelle licking body surface <http://pwww.arkive.org/dorcas-gazelle-13-2-2014>, **b** gazelle licking its back hind leg "after Wild, 1935" [11].

## 2.3. Hunting behaviour (predation and escape from danger)

It is the behaviour of interaction between the prey and the predators to get food by hunting, killing and consuming

the victim. Dorcas gazelle always big booty prey in hunting for predators such as lions, leopards, in the desert, the speed

of a gazelle about 80 / km per hour [12]. Gazelle is increasing its strength and speed when facing predators due to its long limbs and graceful body [7]. Panthers particularly among the predators are superior to the gazelles by high speed. The gazelle can suddenly change their direction through running speed, so lions can not catch up them though the wide circle made by lions to surround the prey

### 2.3.1. Gazelle as prey hanged in ancient Egyptian scene

Lion attacking gazelle in its neck while gazelle head tossed back with body hanging out, as shown in fig (4-a, b) lion already bears young gazelle by its paws. The earliest scene of defecation in hunting scene in Ti tomb, fig (4-b), which depicts a lion dragging a body of Dorcas gazelle over a fence, the predator has bitten the gazelle's throat, and so it is likely that if the animal is not yet dead, it

during chasing, that allow the gazelle to escape from danger [8]. The gazelles are sensitive for any sound or movement, it always depend on their eyes, ears and smell to detect any risk [7]. Gazelle can also see an arm waving far a kilometer [12]. That is confirming the main idea of turning head back to see coming predators in various hunting scenes in ancient Egyptian art [2].

is close to death. It hangs limply between the jaws of lion, gazelle head and neck lolling backward, its body hanging in mid-air, and it defecates small dry pellets. The main idea of gazelle defecation in the scene occurs as a result of its high sense of fear from sudden attack furiously of lion on the prey. That explains the heavy pellets; it may equally be defecating after the death [5].



Figure (4) **a** lion attacking gazelle "after Evan, 2010" [5]. **b** lion attacking dorcas gazelle in its neck, Ti tomb, 5<sup>th</sup> dynasty, old kingdom, Saqarra "after Wild, 1935"[11].

## 2.4. Sexual behaviour

### 2.4.1. Mating

Gazelles mate sometime between September and November. During this time. the male is territorial, marking boundaries with piles of dung. The mating ceremony is described as ritualized, with the male lowering his head, stretching out his neck, as he follows the female with a characteristic pace lifting a foreleg, and making noises. After circling around, the female responds by lifting her tail up [2]. The female stands, then male stands on its back hind legs and mounts upon the female for mating posture [8], fig (5-a), male use its forelegs straddle female haunches, fig (5-b) in the rare scene of hunting scene of tomb "sehem nefer", dynasty IV, old kingdom period [13].

Mating of Dorcas gazelle depicts in ancient Egyptian art, as noted in the natural in "image 10". So, it is clearly noted the symmetry between the gazelles at the natural environment and on Seshem Nefer tomb. Depiction gazelle mating is rare in ancient Egyptian art with only four examples found in this material in hunting scene<sup>(a)</sup> [2]. Ikram, 1991 indicates that It is possible that the Egyptians had neither the opportunity, nor the inclination to observe these animals in the wild as they are quite dangerous, especially when thus engaged. The aim of animals mating scenes is to emphasize fertility of these animals in the afterlife, thus continuation of providing offerings for the deceased such as food,

leather; therefore their appearance on tomb walls insures their continued existence. Thus it would be especially important to represent wild animals mating as they do not mate in captivity. This idea emphasize life force and osirian cyclical nature" which confirm funeral beliefs of ancient Egyptians, and their desire to assure their afterlife has many beasts in it as they had

(as a measure of f animals, sport wanted wealth or for hunting purposes) or owned. These scenes specifically served as a kind of personal preference and the mode of the ancient Egyptians life [14]. One can say that figure 5 (a, b) is clear evidence indicate to deep observation of ancient Egyptians aware of zoology and animal behaviours in the natural environment.

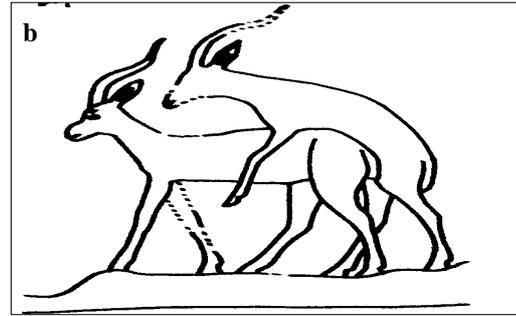


Figure (5) **a** dorcas gazelle Male mounts upon female <http://www.arkive.org/dorcas-gazelle> 13-2-2014, **b** mating posture of dorca gazelle, tomb of seshem nefer IV, Giza "after Evan, 2010" [5]

#### 2.4.2. Giving birth

Gazelles carry their young for about six months. The mother alternates between standing and lying down during labour. The fawn stands up to nurse after about 20 minutes. When not feeding, the young hides in the grass. A different place is chosen to hide the fawn after each feeding, with the mother keeping watch from a distance. When food is plentiful,

gazelles can reproduce twice a year [2] Female gives birth, either standing or lying, but often she lays on the ground to give birth, and the female gives birth often one fawn or two fawns but it is rarely, fawn weighs between kilogram or 1.7 kg. [15]. The representation of the gazelle birth is rarely in ancient Egyptian art, for example:

##### 2.4.2.1. Dorcas gazelle foaling standing

It is difficult to note the behaviour of the giving birth of the animal because of the specificity of this behaviour of the gazelle and animals in general, but modern zoologists can photograph that special

behaviour in the nature as shown in fig. (6-a). Sommering gazelle represents foaling standing" in the royal mortuary temples of Niuserre [16]., fig. (6-b)



Figure (6) **a** gazelle foaling standing <http://www.arkive.org/grants-gazelle/> 13-2-2014, **b** Sommering gazelle foaling standing, 5<sup>th</sup> dynasty, Old kingdom "after Von Bissing, 1956" [16]

##### 2.4.2.2. Dorcas gazelle foaling lying

Gazelle often foaling lying in rare snapshot as it shown in fig. (7-a) [17], a single example of a gazelle giving birth in a recumbent position is included in the Middle Kingdom tomb of Khnumhotep III

at Beni Hassan in unique example, fig. (7-b) [18]. mother turn her head back as if she were watching her newborn to avoid any possible risk during giving birth process might attack her fawn.

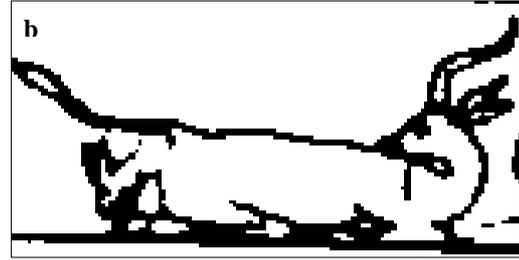


Figure (7) **a** gazelle foaling lying <http://www.youtube.com/watch? 26-4-2014>, **b** dorcas gazelle foaling lying, hunting scene, tomb of Khnumhotep III, dynasty XII, Beni Hassan, middle kingdom "after Newberry, 1893" [18]

## 2.5. Parental behaviour

### 2.5.1. Feeding young

Feeding young is considered one of the most important activities of

parental behaviour is the provision of food for offspring [5].

### 2.5.2. Nursing

Mother is Suckling its fawn for a minute or two several times a day for three months, and in the first weeks mother leaves its fawn in a known place, then she

is grazing and sleeping away from him, after one year when fawn grows slowly, he joins the herd [12].

### 2.5.3. The normal pose of nursing gazelle

The normal pose of nursing gazelle is the fawn standing in parallel with the mother, fig. (8-a) [19]. The opportunities for observation of nursing behaviour is

popular motif in both desert and offering scenes from the late 4<sup>th</sup> dynasty until the early 6<sup>th</sup> dynasty as it shown in fig. (8-b & c) [5].



Figure (8) **a** normal pose of nursing gazelle <http://www.allposters.com/-sp/Grant-s- Gazelle-Nursing- 26-4-2014>, **b** dorcas gazelle nursing its fawn, tomb pehnuka, 5<sup>th</sup> dynasty, old kingdom "after Harpur, 1987" [20]

The motif of a nursing gazelle in the desert hunt scenes appears in several of the Old Kingdom private tombs, followed by three examples dating to the Middle and New Kingdom [2]. Gazelle nursing its fawn represented in "insert" scenes among fleeing animals through vitality desert hunting scenes, and appeared also in the

offering procession scenes such as: **a** Gazelle elevated one hind leg [21], where the fawn can easily suck from the udder, fig (9-a). **b** Gazelle nursing and looking back to its fawn [22], where I suggest this pose indicates to love feelings and paying attention from careful, fig (9-b).

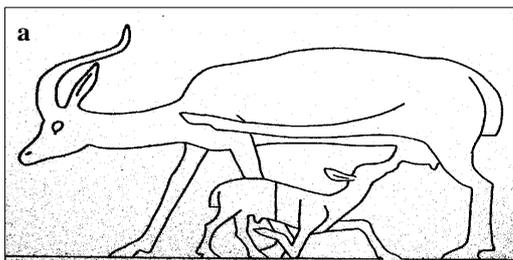


Figure (9) **a** dorcas gazelle fawn nursing Tomb of seshem nefer, dynasty 4, old kingdom, **b** gazelle mother nursing, looking back to young. Tomb of RewerII, 5<sup>th</sup> dynasty, old kingdom

## 2.6. Errors in gazelle nursing pose representations in ancient Egyptian art

The gazelle are occasionally depicted with one hind leg elevated, fig. (9-a) as noted, the only antelope species that nurse their young in this fashion are dik dik and impala, the position is thus incorrect for dorcas gazelle [5]. The normal nursing

posture for this species, which consists of the mother and young standing in reverse parallel, fig. (8-b). Finally, I agree with Evans that the artist may consequently have been required to model their images of nursing gazelle on those of cows.

## 3. Conclusion

*The gazelle is a wild animal, close observation of its behaviour particularly in the context of the hunt scenes. would have been a benefit consequently most of the characteristic gazelle motifs. The antelope family and dorcas gazelle too has been classified "hidlers" as protecting their young among shrubs, that explains group of young gazelles in the baskets mounted on the shoulders of the shepherds or holders offerings. Licking posture explains how the ancient Egyptian artist was unaware of how Dorcas gazelle actually groom itself, the technique is wrong, but the message is correct the gazelle grooming itself. Hunting behaviour (predation and escape from danger confirming the main idea of turning head back to see coming predators in various hunting scenes in ancient Egyptian art. Sexual Behaviour, Mating scenes emphasized fertility of gazelle in the afterlife, and continuation of providing offerings for the deceased. Natural postures of gazelle foaling are possible in lying and standing. The normal pose of nursing gazelle is the fawn standing in parallel with the mother, but the errors of some presentations of ancient Egyptian depicted gazelle with one hind leg elevated indicate to some of antelope species like dik dik and impala, that the artist may consequently have been required to model their images of nursing gazelle on those of cows.*

## Endnotes

(a) In the tombs of Seshemnefer (Junker 1953: Fig. 63), Nimaatre (Roth 1995: Pl. 95b)(Ukhhotep, (Blackman 1915a:

Pl. VII) and on a silver jar (CG 53262 /JE 39867, Edgar 1925: Pl.I, Fig. 1.

## References

- [1] Stolberg, A., (2004). Untersuchungen zu Antilope, Gazelle und Steinbock im Alten Agypten, Berlin Mensch-und-Buch-Verl, Berlin.
- [2] Strandberg, Å., (2009). The gazelle in Ancient Egyptian Art image and art meaning, Ph.D., Archaeology and Ancient History, Egyptology dept., Faculty of Arts, Uppsala Univ. Sweden
- [3] Wörterbuch (1961). Der ägyptischen sprache, Adolf Erman & Hermann Grapow, Leipzig
- [4] Macramallah, R., (1935). Fouilles à Saqqarah. Le Mastaba d'Idut, Le Caire, Impr. de l'Institut français d'archéologie orientale, Egypt.
- [5] Evans, L., (2010). Animal behavior in Egyptian art: Representations of the natural world in Memphite tomb scenes, The Australian Centre for Egyptology Studies-9, Australian Centre for Egyptology
- [6] Hayes, W., (1953). The scepter of Egypt: A background for the study of the Egyptian antiquities in the Metropolitan museum of art, from the earliest times to the end of the middle kingdom, Vol. I, Met publication, NY.
- [7] Kingdon, J., (1997). The Kingdon field guide to African mammals, Academic Press, London
- [8] Estes, R., (1992). The behaviour guide to African mammals, including hoofed mammals, 20<sup>th</sup> ed., University of California Press, USA
- [9] Davies, N. & Gardiner, A., (1936). Ancient Egyptian Paintings Selected, copied, and described,

- Vol. III, The University of Chicago Press, USA
- [10] Osborn, D., (1998). The mammals of ancient Egypt: The natural history of Egypt, Vol. IV, Aris & Phillips, Warminster
- [11] Wild, H., 1953, Le Tombeau de Ti, La chapelle, Le Caire, Impr. de l'Institut français d'archéologie orientale, Egypt.
- [12] Yom-Tov, Y., Mendelssohn, H. & Groves, C. (1995). *Gazella dorcas*. *Mammalian species*, No. 491, pp.1- 6. <http://arts.anu.edu.au/grovco/Gazella%20dorcas.pdf>
- [13] Junker, H., (1953). Giza XI. auf dem Friedhof des alten reiches der Friedhof südlich der cheopspyra-mide, 1<sup>st</sup> ed. Rudolf M Rohrer, Ostteil, Germany
- [14] Ikram, S., (1991). Animal mating motifs in Egyptian funerary representations, *GM*, Vol. 124, pp. 51:68.
- [15] *Gazella dorcas*, [http://www.ultimateungulate.com/artiodactyla/gazella\\_dorcas.html](http://www.ultimateungulate.com/artiodactyla/gazella_dorcas.html) - 12/2/2014
- [16] Von Bissing, W., (1955). La Chambre des trois saisons du sanctuaire solaire du roi Rathourès (V<sup>e</sup> Dynastie) à Abo-usir, *ASAE*, Vol.53, pp.319-338
- [17] Baby Gazelle Birth, <http://www.youtube.com/watch?v=zs2Jrm0gAEE> - 30-2-2014
- [18] Newberry, P., (1893). Beni Hassan, I, Archaeological Survey of Egypt Memoir [3 & 4], London
- [19] Grant's Gazelle Nursing, [http://www.allposters.com/-sp/Grant-s-Gazelle-Nursing-its-Young-Gazella-Granti-East-Africa-Posters\\_i6014860\\_.html](http://www.allposters.com/-sp/Grant-s-Gazelle-Nursing-its-Young-Gazella-Granti-East-Africa-Posters_i6014860_.html) - 15-3-2014
- [20] Harpur, Y., (1987). Decoration in Egyptian tombs of old kingdom: Studies in orientation and scene content, KPI, London
- [21] Roth, A., (1995). A cemetery of palace attendants, Giza Mastabas, Vol 6, Museum of Fine Arts, Boston
- [22] Junker, H., (1938). Giza III , Bericht über grabungen auf dem Friedhof des Alten Riches bei den Pyramiden von Giza, Band III, Die Mastabas der vorgeschrittenen V. Dynastie auf dem Westfriedhof., Hölder-Pichler-Tempsky Wien, Leipzig