

## The First Time, Studying the Behavior of Foreign Cats and Comparing Them with Local Cats in Iraq

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**Abstract:** Cats are one of the unique animals that have been domesticated by humans, as the history of their domestication extends back to thousands of years BC, this study is designed to investigate and record cat behaviors in Iraq for the first time, this present study took from the beginning of January 2020 to the end of July 2020. This study was done by designing a questionnaire to record the apparent behaviors of cats. This questionnaire was distributed to a group of veterinary clinics in the central Euphrates region in Iraq, the current study was interested in studying the behaviors of 70 cats, 30 of which were local breeds and the other 40 were distributed among foreign species. The most prominent results of this study were The percentage of males and females differed in this study, where the percentage of females was 68% and the proportion of males 32% also the variation of life style a significant relationship has been found between of life style with adaptation with litter box P Value was ( $\leq 0.05$ ) while, bad behaviors were identified in 4% of the cats in this study, as they deliberately used to spend their droppings outside the designated area.

**Keywords:** Cats behavior, local Iraqi cats, survey of cat behavioral.

Cats are one of the unique animals that have been domesticated by humans, as the history of their domestication extends back to thousands of years BC, cats are classified from the smallest animal in the family of felines, as well as one of the easiest members of the family that can be domesticated by humans, cats differed between previous civilizations, as some of them considered them worthy of sanctification and took their place as a worldly place in their lives as it became like a god for them as in the ancient Egyptian civilization (Serpell 2013). As for the ancient Mesopotamian civilization, according to archaeological excavations, where it was found that cats occupy a wide place in the ancient Mesopotamian culture, and this is one of the most important evidence that cats have a great status with humans and they have been able to domesticate them (McCune 2010). Domestication is a gradual process rather than a sudden event, and it is therefore difficult to make precise claims concerning the exact time and place of cat domestication. Bökönyi (1969) has proposed dividing the domestication process into two distinct phases: first is animal keeping, the practice of capturing, taming and keeping animals without any deliberate attempt to regulate their behavior or breeding; and the second is animal breeding, eventually associated with the conscious, selective regulation and control of the animals' reproduction and behavior. Phase 1, according to Bökönyi, is accompanied by only slight morphological divergence from the wild-type phenotype—usually no more than a slight decrease in body size—and these transitional forms of the species are

often physically indistinguishable from the wild ancestor. Phase 2, in contrast, is usually associated with rapid and substantial divergence across a wide range of physical traits. Other important archaeological markers of full domestication include the occurrence of the species outside the geographical range of the ancestral species, artistic representations of the animal in an obviously domesticated state, and material objects associated with animal breeding and husbandry (Ducos and others 1989). But there is a question that must be asked: Why were cats domesticated so long ago? the most logical answer to this question is according to the development of Darwin, as most of the inhabitants of the ancient civilizations have occupied the cultivation of grains and their derivatives due to the abundance of river water. Therefore, it is natural for rodents to develop to feed on their crops. And then their attachment to cats developed until it occupied a wide place in their lives (Serpell 1989). At the present time cat breeding has spread and expanded widely between countries, so there is no country that is free of cat breeders, recent studies have found that cat soil has a positive effect on the health of the animal owner, as raising cats can reduce stress levels in the owner, which in turn is one of the most important reasons that affect cardiovascular health. Having a cat can actually reduce the risk. The incidence of various heart diseases, including stroke, is about 30 percent (Qureshi et al. 2009). A cat purring is one of the most comforting sounds in the world, recent studies have found its effective effect on human healing of muscular system and joint problems. Cats purrs produce vibrations with a frequency of 20-140 Hz, and studies have shown that frequencies in the range of 18-35 Hz have a positive effect on joint movement and healing (Klyscz et al. 1997). On the other hand, many studies have shown that raising cats helps treat sleep disorders in humans, there is studies have found that cat owners prefer to sleep with their animals, especially women, by forty-one percent(Johnson 2009). In 2002, a study found that if children under the age of one year were exposed to cats, they would have reduced allergies to animals and other common allergies (Ownby et al. 2002). There is also a study that found that watching cats increases positive emotions in humans and reduces depression(Flegr and Hodn\y 2016). According to all this, the cats live in different environments according to the type of breeding, and there is a difference in the method of breeding among their owners. Therefore, we find the behaviors of some cats differ from one environment to another, outdoor cats are active both day and night, although they tend to be slightly more active at night. Domestic cats spend the majority of their time in the vicinity of their homes, but can range many hundreds of meters from this central point. They establish territories that vary considerably in size, in one study ranging from 7 to 28 hectares (17–69 acres)(Barratt 1997). The timing of cats' activity is quite flexible and varied, which means house cats may be more active in the morning and evening, as a response to greater human activity at these times(Randall et al. 1985), Cats conserve energy by sleeping more than most animals, especially as they grow older. The daily duration of sleep varies, usually between 12 and 16 hours, with 13 and 14 being the average. Some cats can sleep as much as 20 hours. The term "cat nap" for a short rest refers to the cat's tendency to fall asleep (lightly) for a brief period. While asleep, cats experience short periods of rapid eye movement sleep often accompanied by muscle twitches, which suggests they are dreaming (McCune 2010)(Jouvet 1979).

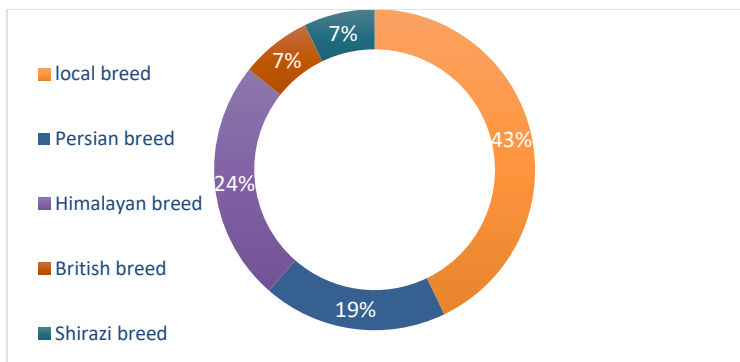
Therefore, the main goal of this study is to identify the most important behaviors of cats in Iraq for the first time and compare them with the wild variety.).

### Material and Methods

This study was done by designing a questionnaire to record the apparent behaviors of cats. This questionnaire was distributed to a group of veterinary clinics in the central Euphrates region in Iraq, in order to increase the breeding of cats in recent times. This study was based on 50 types of cats from different strains of non-Iraqi origin. On the other hand, the behaviors of 30 local breeds that live freely in the streets were not domesticated local breed, this process took from the beginning of January 2020 to the end of July 2020, the data was processed statistically by using Microsoft Excel 2016 program, using numbers program, and the SPSS 2016 program was relied on to analyze the data. The questionnaire was designed on the basis of the study of behavioral diversity, so this study was included Study the nutritional nature of animals, the behaviors of animals when mating, the most important animal behaviors, and the ways they communicate with humans.

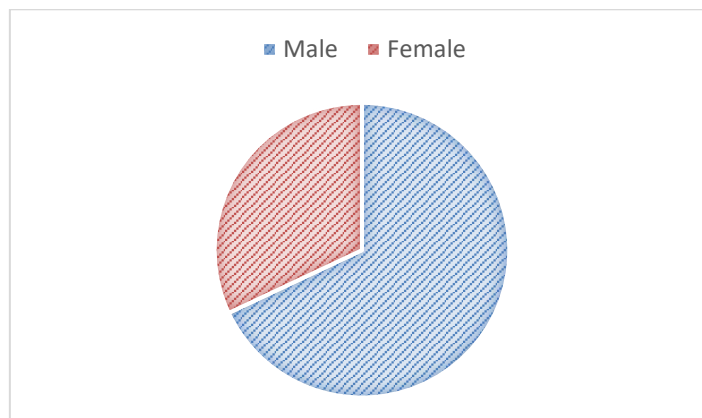
### Results and Discussion

The results consisted of 30 cats from the local breed, 13 cats from the Persian breed, 17 cats from the Himalayan breed, 5 cats from the British breed, and 5 cats from the Shirazi breed, as shown in figure 1.



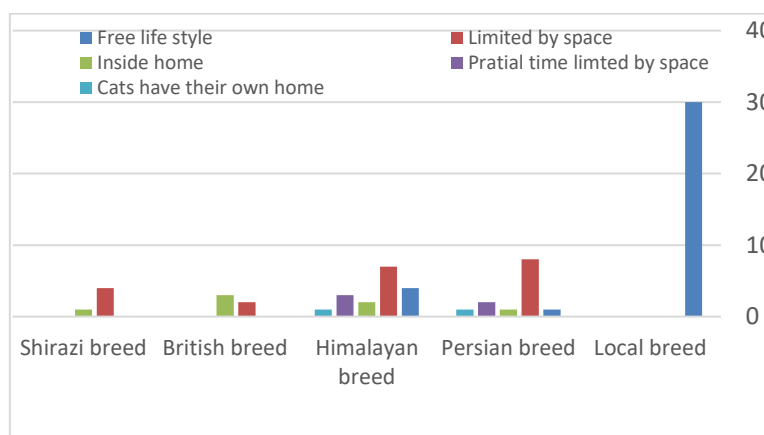
**Fig.1** : distribution of cat's species in present study

The percentage of males and females differed in this study, where the percentage of females was 68% and the proportion of males 32% as shown in figure 1-2. This difference between the ratio of males to females is due to financial gains as females have the ability to produce animals after mating with non-local males so that the resulting animals are sold after that.



**Fig. 2:** percentages of male and female in present study

Life style of cats were different as 30 of the feral cats used to live a free life, while the 50 non-local cats diversified their living system into five sections, as shown in Figure 1-3.



**Fig. 3:** variance life style of cats in the present study

As shown in figure 1-3 according to the variation of life style a significant relationship has been found between of life style with adaptation with litter box P Value was ( $\leq 0.05$ ), As the percentage of animal accustomed to the place litter box increased, with increasing identification of the animal with its own place. and that the results of the present study were supportive of previous results (Frayne et al. 2019). On the other hand, bad behaviors were identified in 4% of the cats in this study, as they deliberately used to spend their droppings outside the designated area, The reason for this was attributed to the lack of litter boxes , In places where cats are raised or in poor sand designated for waste disposal, this is what was supported by previous studies that dealt with this behavior(McGowan et al. 2017)(Cat and Urination 2017).

According to variety of life style of cats a significant difference was founded P Value was ( $\leq 0.05$ ), where it was found that the collection of free-living animals had the ability to palatability and eat all kinds of food that were seen during the study period, as these cats were distinguished by their ability to eat dry food and wet food together in addition to their ability

to hunt young birds and eat the remainder of household foods, compared to animals Those who live specifically in a place where we see them like one type of food and do not have the ability to change their own diet, except for what is rare, in addition to their inability to use their natural instincts such as hunting, and they cannot eat the remains of home food(Beynen 2017).

This reason for the difference in the nutritional behavior of the cats targeted in the study is due to the fact that their owners do not have a culture of dietary diversity among the cats who own them, and this is what we have received some studies indicate (NRC 2006). On the other hand, it was found during the study period that the local breed of cats liked all kinds of food. In addition, cats that live in a closed environment increase their ability to receive different foods with a remarkable increase P Value was ( $\leq 0.05$ ) with increased of offer rewards for it this is supported by studies conducted on cat nutrition(Bontempo 2005).

The percentage of cats that received rewards from their owners was 23% during the study period, and cats that distinguished their name were 15.3% of the total cats that received rewards as shown in figure 1-4.

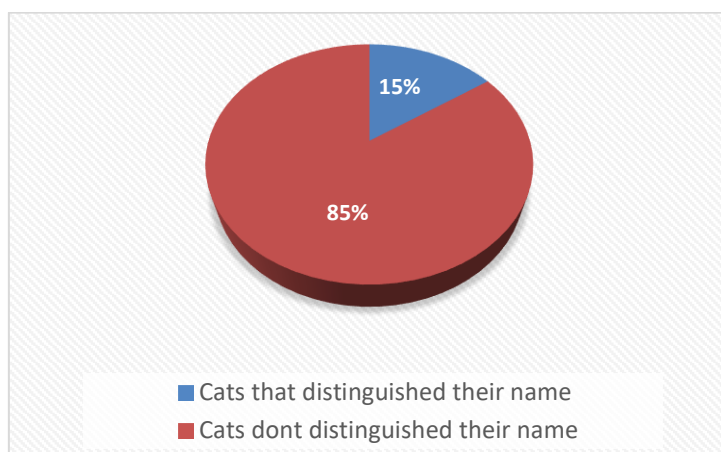


Figure (1-4) percentage of cats that received rewards and distinguished their name

And based on the questionnaire that was conducted during the study period, he found that 8% of cats of non-local breeds have the behavior of attacking or not accepting strangers by running away from them, and there is a significant difference between wild type P Value was ( $\leq 0.05$ ) As the cats have developed their behaviors to defend themselves against strangers, as 100% of the local cats that live freely biting have taken as a means of defense, and then The meow, followed by running away. That results of this behavior by local cats who live freely was expected due to their exposure to methods of torture by people and most of them do not live in luxury. This explains the development of this behavior among these cats, as exposure to torture leads to an increase in their fear of humans in general, but this behavioral result has been supported by many researchers(Adamec et al. 1980)(Randall et al. 1985).

On the other hand, all the cats that were studied unified in the behavior followed for mating, as females tend to meow loudly and try to get out of the place where they are kept , the significant relationship has been founded between estrus cycle and decrease in food intake

with P Value was ( $\leq 0.05$ ). Also almost female Its movement increases with a noticeable decrease in sleep time (Hart and Leedy 1983) As for males, they tend to leave the area in which they live, and their waters increase with a tendency to fight with other males if they are found in the same area (Griffin 2001). As for the sleep behavior of cats, it is different according to the environment in which they live. I found that the average domestic cat sleeps 14.8 hours a day. As for cats that live freely, the rate of sleep is less than 10 hours, so there is a significant relationship between the nature of life in cats with the number of sleep hours with P Value was ( $\leq 0.05$ ), this result has been supported by many studies conducted on the number of sleeping hours in cats (Ljungvall et al. 2014) (These et al. [no date]) (Ursin et al. 1983).

### CONCLUSION

One of the most important conclusions obtained during the current study period is that there is a marked change between the behaviors of animals that live freely in the middle Euphrates region in Iraq with animals that have been domesticated by humans. The behavioral changes of these animals have been studied for the first time in Iraq and found that There is a marked difference according to the environment in which the animal lives, which led to the difference in the animal's natural behaviors such as sleep, its choice of food, its reproductive behavior, and its ability to accept humans.

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