

Development of Learning Behavior of Animals

: Case Study of Dogs and Cats

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Abstracts

This study is a qualitative study aiming to understand psychological theories of animal mind, habituation of dogs and cats and learning behavior in dogs and cats for analyzing whether dogs and cats have mind or not. This qualitative study consists of two parts, documentary study and interview.

The objective of this study is to 1. study the psychological theories of animal mind 2. study habituation of dogs and cats 3. study learning behavior following psychological theories of animal mind and development of dogs and cat's psychology.

The results showed that 1) Psychological theories of animal mind including anthropomorphism, behaviorism, and learning behavior 2) Habituation of dogs and cats including foraging behavior as predators and food selection in domestic ones, communication, and learning behavior (classical conditioning, social learning, conditioned taste aversion, imprinting and imitation) 3) Learning behavior following psychological theories of animal mind and development of dogs and cats' psychology including expressing their emotions and self-awareness for example, suffering and pleasure which theoretically follow anthropomorphism, behaviorism and learning behavior.

Keywords: Development of Learning Behavior, Animals, Case Study of Dogs and Cats

Introduction

There have been so many arguing points of views about animal morality and mostly contradiction between scientists and philosophers. Morality has long been understood as a feature that distinguishes humanity from the rest of the animal kingdom. It is very common finding people who use this distinguishes as a basis for denying moral rights to animals.

Mark raised the topic that while animals probably lack concepts and metacognitive capacities necessary to be held morally responsible for their behavior, this only excludes them from the possibility of counting as moral agents. If animals do indeed behave on the basis of moral emotions, they should be considered moral subjects even if they lack of sophisticated cognitive capacities preventing us from holding them morally responsible. Some studies found that Mark is right, some found that animals are sometimes willing to help others when there is no direct gain involved, or even a direct loss. (Mark Rowlands, 2012 : 128)

There's research argued that beings who are moral subjects are entitled to enjoy positive opportunities for the flourishing of their moral capabilities, and that thwarting of these capabilities entails a harm that cannot be fully explained in terms of hedonistic welfare. Exploring the implications of this idea for the assessment of current practices involving animals.

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Darwin suggested in more than a hundred years ago that the roots of moral systems can be found in biology.

Any animal whatever, endowed with well-marked social instincts, the parental and filial affections being here included, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well developed, or nearly as well developed, as in man.

Nowadays there are many psychologists and ethologists studying the behavior of animals with some aspects of the dispute between lab psychologists and classical ethologists, there are a core disagreement about the scientific methodology and the nature of nonhuman animals as research objects.

This makes the task of investigating the roots of morality in nonhuman species all the more important for a proper evolutionary understanding of human morality. Allen and Bekoff found that there is likely to be strong selection for cooperative fair play because there are mutual benefits when individuals adopt this strategy and group stability may also be fostered. Numerous mechanisms have evolved to facilitate the initiation and maintenance of social play, to keep others engaged, for agreeing to play fairly and benefits of doing so can be readily achieved. (Colin Allen and Marc Bekoff. 2005 : 125-135)

Animal morality is a core knowledge that can be implied in terms of welfare. The word ‘welfare’ has many different meanings, stemming from debates in axiology, political philosophy, animal ethics, and animal welfare science. Morality relates directly to value or it can be called “moral value” such as truth, freedom, charity, etc. and this is what ethics were conducted. This is the moral problem that we are facing, we now arguing about the level of animal value and what should we treat them in the right way.

Learning behavior in animal can be a task to indicate moral value of animals. Traditional psychological approaches to animal learning and behavior have involved the atheoretical behaviorist which input-output relations are described responding to environment. But recent cognitive behaviorist constructs the study by several hypothesis in varies forms between stimuli and responses. Psychologists and biologists have approached the study of animal behavior from different perspectives. These differences can be attributed in part to differences in the nature of the questions they ask. The goal of biologists, zoologists and behavioral ecologists is to understand how animal behavior contributes to survival and reproductive success. Behaviorists interested in differences behaviors between species. Thus, the goal of research would be to look for patterns or correlations between environmental pressures and evolved behavior. While psychologists interested in animal behavior primarily from the perspective of the flexibility of the individual animal. Animals have also evolved to adjust their behavior to environmental variability by reacting to behavioral consequences which psychologists are interested in. (Boakes, R., 1984 : 300)

This research would study the roots of animal morality by studying about development of learning behavior in animals and the processes are analyzing the data and interviewing the key informants about animal mind and critically defying whether the animal have mind or not.

Research Objectives

1. To study the psychological theories of animal mind
2. To study habituation of dogs and cats
3. To study learning behavior following psychological theories of animal mind and development of dogs and cat's psychology

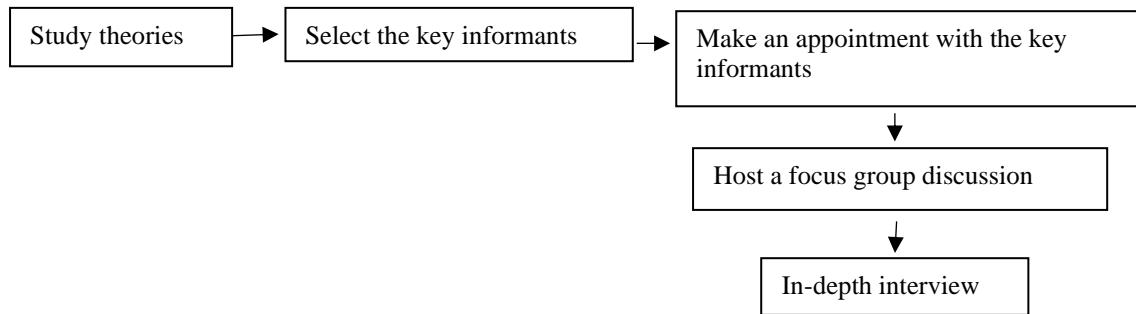
Research Methodology

1. Study and gather information about psychological theories of animal minds, animal behaviors and animal learning from documents and other related papers.
2. Focus group discussion and observation
 - 2.1 Select the key informants; dogs and cats' owners who have pet the dogs and cats for at least 1 year (N=5), veterinarian who have been a clinician for at least 1 year (N=5), dogs and cats' trainers who have been a trainer for at least 1 year (N=5)
 - 2.2 Making an appointment to make up a focus group discussion.
 - 2.3 Making a focus group discussion for 2 times.
 - 2.4 Interview using the instruments that were edited.

Conceptual Framework

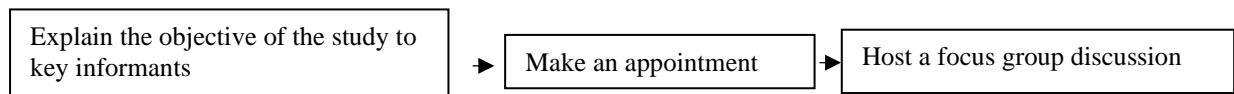
1. Study methodology

Study the documentary and interview the key informants as in the chart below.



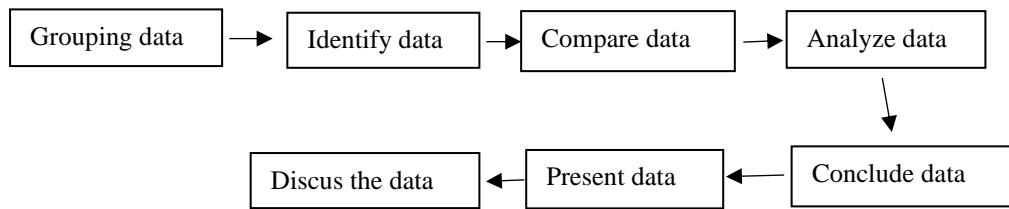
2. Data collection

Explain the key informants about the objective of the study then make an appointment to host a focus group discussion as a chart below.



3. Data analysis and presentation

Using the data from documents, in-depth interviews in focus group discussion and observation to analyze and conclude in descriptive analysis based on the objective of the study as in the chart below.



Results

Psychological theories of animal mind

There are many psychological theories of animal mind including anthropomorphism, behaviorism, and psychological aspects of emotions. Previously, the meaning about psychologic studies are mostly used in human, nowadays there are many researchers studying about psychology of nonhuman animals. The word “mind” is now defined distinguishingly from body. Studying about the mind is now called “science of mind” or “science of consciousness” which explained the consciousness of mind when ones are perceive or aware of self at the present moment.

1. Anthropomorphism

Theoretically, anthropomorphism is a kind of “psychology of others”. It is considered to be an innate tendency of human psychology, a phenomenon attribute intentionality, and mental states to living and nonliving entities. Anthropomorphism emerges as an automatic response to any human-like behavior.

Anthropomorphism is defined as the attribution of human characteristics or behavior to any nonhuman entities based on human behavior. Interpretations of anthropomorphism on nonhuman entities are supported by cognitive mechanisms in many branches of science including neurology and psychology.

Anthropomorphism has been developed by Romanes, the founder of animal psychology who is a scientist studying about psychology of nonhuman animal. He believed a linear evolution of mental activity; every animal has the simplest form, such as sensation, and termed “simple idea”. Then higher animals possess the “complex idea” that is a kind of association. Animal can express their behaviors, desires, feelings, pain, starving, pleasure, and they have their own language for communication like in human, this could be concluded that animal has mind. While human mind can be understood through introspection, the animal mind cannot. However, if animal express the feeling in the same way as human does, presuming that the animal has had a subjective experience similar to human. Theoretically, anthropomorphism is a kind of “psychology of others”. So even among humans, subjective induction sometimes fails to infer another’s mind. Engaging in anthropomorphism using human terms to explain animal’s emotions or feelings are little capable to explain. Anthropomorphism allows other animal’s behavior and emotions to be accessible to us. Pain is the feeling or reaction in nonhuman animal that is the most clearly be understood or interpreted by human because animals that confronted with noxious stimuli which would cause human beings’ pain will react in similar ways.

Another word showing human attitude toward animal is “empathy”. Empathy is the ability to emotionally understand what other people feel, see things from their point of view, and imagine yourself in their place putting yourself in someone else’s position and feeling what they must be feeling. Studying about empathy in humans and nonhuman animals seeks to dissociate emotional and cognitive empathy.

2. Behaviorism

Behaviorism also known as behavioral psychology; a theory of learning based on the idea that all behaviors are acquired through conditioning. There is an introspection psychology, animal psychology was indirect research that is based on analogies from human psychology, but behaviorism made animal psychology the basic research method for general psychology. Traditional psychological approaches to animal learning and behavior have involved the atheoretical behaviorist which input-output relations are described responding to environment. But recent cognitive behaviorist constructs the study by several hypothesis in varies forms between stimuli and responses.

Studying about behaviorism in different objectives gives varieties of results. Experiments that use different animals, different researchers, or different methods could not be compared because it could be bias to judge what behavior meant to be. Traditional psychological approaches to animal learning and behavior have involved the atheoretical behaviorist which input-output relations are described responding to environment. But recent cognitive behaviorist constructs the study by several hypothesis in varies forms between stimuli and responses. Psychologists and biologists have different perspectives of approaching the study of animal behavior. The goal of biologists, zoologists and behavioral ecologists is to understand how animal behavior contributes to survival and reproductive success. Behaviorists interested in differences behaviors between species. Behaviorists only observe behavior constitutes legitimate scientific data. Contrary to other researchers in the field of ethology, neurobiology, endocrinology, psychology, and philosophy. Thus, the goal of research would be to look for patterns or correlations between environmental pressures and evolved behavior. While psychologists interested in animal behavior primarily from the perspective of the flexibility of the individual animal.

(a) Psychological aspects of emotion

Emotions can be defined as psychological phenomena that help in behavioral control created by nervous system controlled by the brain. Emotional reaction such as frightening stimulus would elicit certain behavioral and physiological changes and give rise to the subjective experience of fear. In psychology, studying about emotional expression is difficult to compare between species especially when we compare others to human. Thus, we could compare from studying about anatomy of brains between species but assessing the intelligence of animals in relation to their brain is also difficult.

(b) Self-awareness in animals

Awareness is a form of perception associated with physical processes, while consciousness refers to mental processes involves a special kind of self-awareness, which is not simple awareness of parts of one’s body or of processes occurring within the brain. Thus, awareness of animal is accepted by many branches of scientists, but consciousness is still be questioned. We could now only conclude that there is a relationship between consciousness and suffering in animals.

Habituation of dogs and cats

Natural habitats of dogs and cats are previously wild, that is mostly hunt for living or surviving. They are both predators but have different group of prey. Dogs mostly hunt bigger sized prey such as deer or small mammals. Cats mostly hunt smaller sized prey such as mice or rats.

Dogs and cats have their own way of communication. Using body languages, facial expression, making sound or communicate by odors. These are the behavior that they can express to communicate each other among species and between species.

1. Foraging behavior of dogs and cats

Foraging theory is a branch of behavioral ecology that studies the foraging behavior of animals in response to the environment where the animal lives. It is one of the important behaviors to survive or fulfill their role or purpose. Infants of mammalian have to find the way to drink milk from their mothers. Key words used to describe foraging behavior include resources, the elements necessary for survival and reproduction which have a limited supply, predator, any organism that consumes others, and prey, an organism that is eaten in part or whole by another.

Domestic dogs and cats, although both carnivores, therefore originated in different branches of the Carnivora, and have inherited rather different legacies of food preferences and food selection behavior.

(a) Foraging habitats of dogs and cats as predators

Wild dogs and cats can hunt varieties of prey. Wild dog are endangered, social, cursorial hunting carnivores. Cat is an active hunter which hunts the small birds and small sized rodents for example mice and rats. Cats usually approach their prey by stalking it. This involves the cat being in a crouched position, with their head outstretched. Slow movements are used on the initial approach which may speed up to a sprint the closer the cat gets to the prey. As the cat gets to a close enough distance to be able to capture the prey, the cat stops and prepares to spring forward. At this point, you may witness the cat holding itself in a tense position before a brief sprint and springing forward to strike the prey with one or both of their front paws.

(b) Feeding behavior and food selection in domestic dogs and cats

Food for domestic dogs and cats is depend on what is suited them or what their owner can afford. Most of domestic dogs and cats know what they like to eat and this is good for training them by conditioned learning.

The dog is typical of its genus, *Canis*, in its relatively unspecialized dentition, and a taste system that is rather insensitive to salt. The preference of many dogs for large infrequent meals reflects the competitive feeding behavior of its pack-hunting ancestor, the wolf *Canis lupus*.

Morphologically and physiologically domestic cats are highly specialized carnivores, as indicated by their dentition, nutritional requirements, and sense of taste, which is insensitive to both salt and sugars. Their preference for several small meals each day reflects a daily pattern of multiple kills of small prey items in their ancestor, the solitary territorial predator *Felis silvestris*.

2. Communication

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Learning behavior in dogs and cats

Dogs and cats can improve their skills by training or teaching them conditionally. Psychological theories of animal mind insisting that animals have mind because they have emotions and self-awareness (such as pleasure and suffer) that shows through their behaviors.

1. Classical conditioning

Classical conditioning is a kind of learning that associates an unconditioned stimulus that already results in a response (such as a reflex) with a new, conditioned stimulus. As a result, the new stimulus brings about the same response. Classical conditioning is widely observed in the animal kingdom, he demonstrated that conditioning could occur in monkeys, mice and wide variety of invertebrate animals.

The interview shows that most of key informants especially the trainers think that dogs and cats have memory skills, so they can remember familiar people, animals, and places. They would learn and react to trainer's command better than to strangers because they are more willing to do it with familiar people.

2. Social learning

Social learning theory is a theory of learning process and social behavior which proposes that new behaviors can be acquired by observing and imitating others. It states that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement. Dogs seems to be successful at following human cues to solve the object choice task.

This study shows that dogs could be able to present as a model of human cognition from social learning aspect. Dogs can read human signals and behaviors; they mostly do whatever their owners asked for, but they would not obey to other human(strangers).

3. Conditioned tasted aversion

Conditioned tasted aversion can be called "poison-avoidance learning". This is a prototype of adaptively specialized learning ability. Conditioned tasted aversion is a type of learning to protect selves from harmful things. Learning takes place with a delay of hours between experiencing the flavors. If food or drink is identified by exteroceptive stimuli like light or noises, rats learn little or nothing. Conversely, if shock follows immediately after eating it, aversion develops to exteroceptive stimuli but not to flavors. So, we could find this kind of learning process in nature or wild dogs and cats more often than in domestic dogs and cats.

4. Imprinting

Imprinting is a rapid irreversible learning that results from exposure to an object during a specific period. It is the innate ability to recognize one's caregiver in animals. Animals would be being to imprint on the first large moving object they could follow for more than 10

minutes, and this could only occur within a specific time frame. For example, in the wild, animals learn to hunt while watching their parents' hunt. One's true parents are not necessary for learning. When birds are orphaned, they can learn to fly by imprinting on microlight aircraft, which can guide them in the necessary migration patterns. Newborn mammals learn to recognize and follow the object they saw. Lorenz was a scientist who suggested that newly born species had a need to recognize and follow its caregiver to survive. The result from this study which is focusing on the domestic animals shows that some dogs or cats have abilities to learn imprinting, but some are not.

5. Imitation

In domestic animal, dogs and cats would walk follow their owner because they saw the owner first and this is called “imitation learning”. In this study, key informants said that they could not act like the owner or trainer properly somehow because of their physical abilities but feeling that they wanted to.

Discussion

There are psychological theories that can be used to explained animal mind especially in dogs and cats because we have been close to these animals for long time, and we have learnt to communicate with them more than other animals. This study is only analyzed from dogs and cats' owners in Thailand, with no separation or controlling of breeds or ages of animals. If there will be more study about this, there might be clearer in analyzing the results of minimizing the scale of area or animal's breed.

Suggestion

This study is only analyzed from dogs and cats' owners in Thailand, with no separation or controlling of breeds or ages of animals. If there will be more study about this, there might be clearer in analyzing the results of minimizing the scale of area or animal's breed.

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