

Chapter 1 : Stylus/CABI - Domestic Animal Behaviour and Welfare

Effect of human-animal interactions on animal productivity. There is substantial evidence of a negative relationship between underlying fearfulness and productivity in farm animals [4,5]. Because positive interaction can reduce fear of humans, such practice may enhance productivity of farm animals.

Sourcing infectious disease news, alerts, and popular media. We can think of it as a One Health Triad: Andrew Thompson of Murdoch University, Australia, suggests that One Health needs to be revised to account for asynchrony in transmission dynamics between wildlife and humans. Specifically, he criticizes the platform for considering each wildlife, livestock, environmental, and human component with equal weight. Realistically, he argues, human modifications of the landscape are having direct effects on wildlife health and indirect effects on animal stress, magnifying the burden on animal immune systems possibly resulting in greater mortality. That means there are many circumstances where transmission is one-way, from animal to human. Yet, we are not focusing on the impacts of humans on animal health. Transmission dynamics are very complex, so we need to think about them using more complexity. Personally, I think these prescribed asynchronous disease dynamics already exist within the established One Health platform. One must consider the dynamic abiotic and biotic effects of disease transmission within and between wild animals, domestic animals, and humans. In some cases these dynamics are generalizable among different host-pathogen systems, but many are very specific in nature. Speaking from experience, much of my research focuses on wildlife disease reservoirs. Reservoirs are usually considered populations of animals that maintain a parasitic infection with little to no net mortality effects on the population. A reservoir population is considered a source of infection for another susceptible population, be it wildlife, domestic livestock, or in some cases, human. Good reservoirs are usually pretty stable, robust kinds of animals. They can even be considered robust against stress. Mice, for example, are great reservoirs for a suite of pathogens: Lyme disease *Borrelia burgdorferi* ; Hantavirus Sin Nombre Virus ; and many ectoparasites that can carry virulent parasites. But, like many opportunists, mice typically thrive in degraded environments like farms, cities, or resource extraction sites. That means lots of animals, potentially carrying lots of parasites, in high-human density areas. Raccoons, coyotes, skunks are all examples of generalists that may act as disease reservoirs but are generally uninfluenced by stressors in human-dominated environments. Reservoir research is a major part of One Health programme. Perhaps, but I expect this may come with improved communication and consolidation of disease knowledge among scientists. Burgeoning domains such as zoonotic ecology, landscape epidemiology, and agricultural ecology necessarily consider complexity in their analyses are examples of this momentum. Therefore, like so many contemporary perspectives in science, it is the scientific community that must unite to combine results, discuss opinions, and maintain an evolution of the holistic perspective of One Health. In my opinion, One-Healthers are thinking in the right directionâ€ they just need exchange ideas a little more. One health, spillover and human activity. International Journal for Parasitology, A comment on this publication can be found here:

Chapter 2 : Human-domestic animal interactions.

This chapter describes how hand rearing and handling by humans at an early age may affect the behaviour of domestic animals towards their own or to.

Received May 3; Accepted Jul 4. This article has been cited by other articles in PMC. Abstract Humans and animals are in regular and at times close contact in modern intensive farming systems. The quality of human-animal interactions can have a profound impact on the productivity and welfare of farm animals. Interactions by humans may be neutral, positive or negative in nature. Regular pleasant contact with humans may result in desirable alterations in the physiology, behaviour, health and productivity of farm animals. On the contrary, animals that were subjected to aversive human contact were highly fearful of humans and their growth and reproductive performance could be compromised. Farm animals are particularly sensitive to human stimulation that occurs early in life, while many systems of the animals are still developing. This may have long-lasting impact and could possibly modify their genetic potential. The question as to how human contact can have a positive impact on responses to stressors, and productivity is not well understood. Recent work in our laboratory suggested that pleasant human contact may alter ability to tolerate various stressors through enhanced heat shock protein hsp 70 expression. The induction of hsp is often associated with increased tolerance to environmental stressors and disease resistance in animals. Other than attitude and behaviour, technical skills, knowledge, job motivation, commitment and job satisfaction are prerequisites for high job performance. Hence, domestic animals should be adapted to man and captive environment. However, many farm animals still perceive contact with humans as an alarming predatory encounter and sudden changes in their physical and social environment as a frightening experience [2 , 3]. In modern production systems, there are regular periods of contacts between humans and animals such as during feeding and cleaning. Animals may respond to tactile, visual, olfactory, gustatory and auditory stimuli from humans. Even with considerable automation in intensive farming, animals are still subjected to some degree of human contact. Fear for humans is a major source of stress and may result in poor productivity in farm animals. This subject has been extensively reviewed previously [4 - 7]. Regular positive contact with humans is desirable in both mammalian and avian species [8]. On the other hand, farm animals that were handled aversively were highly fearful of humans, distressed and consequently their welfare and productivity will be compromised [5]. There have been considerable reports of attempts to alter the physiology, behaviour and performance pigs, poultry and cattle through regular positive contact with humans at both laboratory and farm levels [6 , 9]. The aim of this paper is to review some of the research that shows impact of human-animal interactions on the productivity and welfare of farm animals. The concept of human-animal interactions According to Estep and Hetts [10], human-animal interactions can be defined as the degree of relatedness or distance between animal and humans. The relationship requires mutual individual recognition. There is the question of whether animals can discriminate one human to another human. Literature regarding the ability of farm animals to recognise individual people is inconsistent. A number of experiments suggested that farm animals respond the same way to different people. Hemsworth [11] compared the response of pigs to two different stockpersons which differed markedly in their nature of contact with pigs. The authors concluded that pigs were unable to differentiate between different people and aversive handling by one person made the animals fearful of all people. Jones [12] indicated that chicks that had been habituated to one person by a regimen of regular handling also showed less fear of similarly dressed but otherwise dissimilar people. On the contrary, other studies showed that pigs [13 , 14], laying hens [15] and sheep [16] were able to recognise individual people. Rybarczyk [17] suggested that dairy cows may recognise people by their faces [17]. The life of a farm animal is constantly challenged by an array of factors that may evoke stress responses. Overcrowding, extreme temperatures, social disruption, unfamiliar sounds, unfamiliar or uncaring handlers, feed and water restriction, injection with antigens, disease are common environmental factors that may disrupt homeostasis. Biological reactions to stress comprise changes in behaviour, neuroendocrine system, autonomic nervous system and immune system [19]. In many stressful events, the first line of defence is behavioural response,

which is biologically economic. When the biological system fails to cope with the stressors and behavioural activity is suppressed, an animal depends on the integrative capacities of nervous and endocrine systems. Regardless of whether the stimulus is threatening or not, two distinct pathways involving interlocking physiological reactions will be evoked. The first pathway comprises the sympathetic adreno-medullary SA system that is responsible for the increase in the synthesis and release of catecholamines adrenaline and noradrenaline. The SA system reaction is manifested by immediate increases in blood pressure, muscle tone, nerve sensibility, respiration rate and blood sugar. Although the system may have dramatic physiological consequences, it is short term. Activation of the hypothalamic-pituitary-adrenal axis is a longer adjustment to environmental fluctuations. Sensory inputs cause the release of corticotrophin-releasing hormone from the hypothalamus. The neurohormone stimulates the anterior pituitary gland to release adrenocorticotrophin hormone that elicits the adrenal cortex to release glucocorticoids cortisol and corticosterone. Glucocorticoids are known to modulate immune response, shift metabolism, influence growth, and alter behaviour [20]. Stress and fear are not synonymous but the latter may contribute to overall stress, particularly if the frightening stimulation is intense, prolonged or inescapable [21 , 22]. According to Jones [8], fear is an emotional psychophysiological response to perceived danger. Gray [23] defined fear as a form of emotional reaction to a stimulus that the animal works to terminate, escape from, or avoid. High levels of fear not only represent a state of suffering but they are also a powerful and potentially damaging stressor. Two of the commonest and potentially frightening events encountered by farm animals are sudden changes in their social or physical environment and their exposure to people [8]. Animals probably perceive a new unfamiliar environment with a degree of uncertainty that acts as a psychological stimulus. In pigs, short-term exposure to a novel environment induced both behavioural and emotional reactions such as increased locomotive activity and escape attempts, vocalization, and as well as hormonal responses [24]. Novel environment is a potent fear- and stress-elicitor in all animals. Translocation of chicks from the hatcher to brooding cages or pens may result in behavioural inhibition and panic [8]. The predominant response of the domestic fowl to humans is thought to be one of fear [27]. Naive chickens may perceive contact with humans as an alarming predatory encounter. It is common for farm animals to display fear-related behaviour in the presence of humans such as withdrawal from or avoidance of humans, immobility such as freezing or crouching [9 , 21]. Fear of humans in farm animals can be measured by home cage avoidance test, box plus experimenter and approaching human test [8]. The approaching human test is useful for commercial poultry flocks raised in floor pens. An experimenter can film the withdrawal responses of chickens as he walks slowly through a chicken house. Orientation away and withdrawal from the approaching human may be equated with fear levels. There is considerable report to suggest that regular positive human contact is a powerful and reliable method to dampen stress and fear reactions in pigs [31], dairy cows [32], goats [33], and poultry [26 , 34 , 35]. The authors found that those chickens had lower HLR, plasma levels of corticosterone CORT , and shorter tonic immobility TI duration than their neglected counterparts following road transportation. However, during transit chickens may be exposed to an array of stressful and fearful stimuli including thermal extremes, acceleration, vibration, motion, impacts, feed and water deprivation, social disruption and noise [36]. Similarly, Lyons [37] reported that early human contact not only influenced behavioural responses to humans but also to novel stimuli. Hence, the findings of Lyons [37], and Al-Aqil et al. There is evidence that poultry are also sensitive to visual contact with humans [26 , 38 , 39]. Jones [38] demonstrated that visual contacts without tactile interaction was more effective in reducing fear of humans than picking up and stroking the birds. Visual contact is obviously more feasible and practical than physical contact in commercial poultry flocks. There is, however, limited documented work on visual contact with humans, on stress and fear responses in non-avian species. One of the earliest studies on the effect of early age stimuli on physiological stress response was by Levine [40] who reported that infantile stimulation through handling elicited long lasting alterations of the adrenocortical function in rodents. When adults, these rats had lower CORT both basally and during recovery, after withdrawal of stressors than those that were not handled, Gross [41] suggested that stimulation which occur early in life while many systems of the animals are still developing may have long lasting impact and could possibly modify expression of their genetic potential. Studies in pigs

demonstrated that early handling during the first eight wk of life increased the approach behaviour of pigs to an experimenter in a standard test from 10 to 24 wk of age [42]. Chickens subjected to visual contact from 3 to 6 wk showed longer TI durations and higher HLR in response to crating than those interacted at other ages. Based on these studies, it appears that early age human contact may have long-term effects. On the other hand, Jones and Waddington [43] reported that fear of humans in day-old chicks was equally reduced irrespective they were handled from 0 to 9, 10 to 18, or 0 to 18 d of age. It is not clear whether the quality of human contact experienced by animals at an early age can be modified by subsequent pleasant or unpleasant interaction with humans. This is critical under commercial setting because there will be variation both between and within stockpersons in their behaviour toward farm animals. Based on HLR and CORT reactions to road transportation, the authors concluded that the benefits of early age positive human contact can be modified by subsequent unpleasant experience with humans. The authors also indicated that chickens which had experienced pleasant human contact early in life may perceive the presence of humans as a signal for continuous positive interaction. Hence, subsequent exposure to unpleasant human contact may result in disappointment with consequent elicitation of the physiological stress response. Effect of human-animal interactions on animal productivity There is substantial evidence of a negative relationship between underlying fearfulness and productivity in farm animals [4 , 5]. Because positive interaction can reduce fear of humans, such practice may enhance productivity of farm animals. Gross and Siegel [44] postulated that positive human contact may reduce the resources otherwise required by animals to respond to their human associates and that resources can be utilised for productivity. In poultry, some authors [44 - 46] reported a significant improvement in weight gain and feed efficiency in positively handled chickens. The enhanced disease resistance and immune response in those studies could be associated with the stress modulating effect of human contact. However, others demonstrated that positive tactile interaction either had negligible [47] or negative effect [48] on growth performance. Nature of the physical contact, breed and age differences may have accounted for the discrepancies. Zulkifli and Siti Nor Azah [26] compared the effects of physical and visual contacts and showed only the former was beneficial in enhancing growth performance. In laying hens, however, Barnett et al. According to Hemsworth and Coleman [26], fear of humans may be considered as one of the major factors for depressed growth and reproductive performance in commercial pigs. The authors noted gilts in the pleasant handling treatment had significantly better weight gain but not feed efficiency than those in the unpleasant handling treatment. Unpleasant physical contact with humans reduced testicle size and delayed co-ordinated mating response in boars when compared to those subjected to positive handling by humans. In the similar study, gilts in the unpleasant treatment showed a lower pregnancy rate than those in the pleasant treatment. Work by Paterson and Pearce [49], and Pearce et al. There is a possibility that pigs raised in large groups may receive psychological protection from members of the group. There have been relatively few human contact and productivity studies in other farm animals.

Chapter 3 : Table of contents for Domestic animal behaviour and welfare

The quality of human-animal interactions will determine whether the influence on an animal's physiology and behaviour is desirable or otherwise. There is the question of whether animals can discriminate one human to another human.

Comparison of three conditions: Increased positive social attention from others and stimulation of social behavior. A relatively large body of research investigated the effect of a friendly animal on the perception of the human in its company and on the stimulation of social behavior. Wells studied the behavior of strangers toward a female experimenter in six different conditions: In the alone condition, the experimenter was ignored more than with the teddy or plant, but got more attention in the company of a dog. The Rottweiler led to more non-responses than the pup or the adult Labrador, which elicited most smiles and verbal responses. Also, in a classroom of first-graders, the presence of a dog was associated with increased attention toward the teacher in comparison to class in the absence of the dog Kotrschal and Ortbauer, Interaction with an animal is per se a form of social behavior. The following research assessed the effect of animal presence on this aspect without further investigating effects in interpersonal behavior. Children with autism interacted most frequently and for the longest periods with a real dog in comparison to objects or a person Prothmann et al. Also children with pervasive developmental disorders including autism were more playful in interaction with a live dog compared to toys, and also more aware of their social environment in the presence of the dog Martin and Farnum, The following studies focused on the facilitation of interpersonal interaction by the presence of an animal, the social catalyst effect. Among children with autism the presence of a dog during occupational therapy was associated with greater use of language and more social interaction Sams et al. Similarly, therapeutic riding enhanced social motivation of children with autism Bass et al. In adult patients with chronic schizophrenia dog-assisted therapy was linked to improvement in social contact, symptoms, and quality of life related to social relationships, but in comparison to a control group without a dog differences were not significant Villalta-Gil et al. In psychiatric inpatients, however, AAT lead to a significant increase in interactions with other patients over the course of 4 weeks in comparison to rehabilitation without animals. This included smiles, sociability, helpfulness toward others, activation and responsiveness Marr et al. Many animal-assisted interventions focus on elderly residents or patients. The presence of an animal positively influenced, e. A comparison of observations of AAT and non-AAT recreational sessions in long-term care facilities showed that the animal involvement was linked to more frequent initiation and longer durations of conversations Bernstein et al. The visit of a person with a live dog as well as a robotic dog led to more social interaction than the person alone. From their reviews on the effects of animals-assisted therapy on patients with dementia, Filan and Llewellyn-Jones and Perkins et al. Several studies assessed changes in social interaction not via direct observation, but rather indirectly. Paul and Serpell found that normal families who obtained a dog, 1 month later engaged in more leisure activities together and their children were more often visited by friends. In a classroom of first-graders, the presence of a dog led to a better social integration among students as documented via indirect psychometric indicators Hergovich et al. Also adults profit from animal contact with regard to social relationships, such as patients with substance abuse in an AAT group program, who rated the therapeutic alliance with the therapist as more positive after 26 sessions than the control group without an animal present Wesley et al. Based on the presented evidence we conclude that contact with companion animals holds the potential to promote social interaction and functioning in children and adults with or without mental health problems. Increased trust and trustworthiness Two studies meeting our criteria assessed whether the presence of a friendly animal would increase trust toward other humans. Schneider and Harley asked college students to rate the trustworthiness of two different psychotherapists, each of them depicted once with a dog present and once without the dog in a video. When the dog was present, participants, particularly those with the least positive attitude toward psychotherapists, reported more general satisfaction with the therapist as well as more willingness to disclose personal information. Gueguen and Cicotti investigated the influence of the presence or absence of a dog on social interaction, helping, and courtship behavior. In four different experiments, experimenters asked strangers for money in the street, young women for their phone numbers in

public or observed whether people would help to pick up coins a male experimenter dropped on the street. The presence of the dog was linked to a higher compliance with the request for the phone number and a higher rate of helping behavior. In particular the compliance with the request for the phone number can be interpreted as an indication for increased trust and maybe also attraction of the strangers toward an unfamiliar man accompanied by a dog, which probably promoted his perception as a trustworthy person. These first findings indicate a sociopositive effect of dogs on trust and prosocial behavior, but clearly, more research is needed.

Effects on empathy Most studies on empathy and animal ownership are designed in a way that they are not conclusive with regards to a direct influence of pet ownership on the development of better empathic skills. For example, Poresky and Hendrix assessed empathy in young children via reports of their mothers and found that the mere presence of a pet in the household was unrelated to empathy, while the bond with the pet was positively related to empathy and social competence. However, as the authors point out, it cannot be deduced from such a survey-design that the effect is due to the animal. This also applies to the studies by Paul or Daly and Morton , , However, Hergovich et al. When compared to a control class, the class with the dogs showed higher scores in field independence and empathy toward animals. Clearly, more research with appropriate designs and measures is needed to provide evidence for an effect of animal contact on empathy.

Reduction of aggression Only few results point to the potential of the presence of a friendly animal to reduce aggression in humans. In two studies, effects of the presence of friendly dogs on aggressive behavior in a classroom of first-graders were investigated via behavior observation and reports of the classroom teacher Hergovich et al. In the presence of the dog, in comparison to its absence, aggressive behavior was decreased.

Reduction of depression and promotion of a positive mood In their meta-analysis Souter and Miller conclude that animal-assisted interventions have the potential to significantly reduce depressive symptoms and also our present survey of the literature meeting our criteria points in this direction. Banks and Banks , showed in two controlled studies with patients in long-term care facilities that animal visitation programs reduced feelings of loneliness. The effect was stronger in individual dog visits than in group settings, probably since persons had more intense interactions with the dogs in an individual setting. This indicates also that animal visits reduce feelings of loneliness per se, instead via facilitating social interactions with the other group members. Elderly residents of an institution experienced a reduction in depression and improvement in quality of life when caring for a canary for a period of 3 months Colombo et al. A companion bird also reduced depression in elderly adults after admission to a skilled rehabilitation unit Jessen et al. Also in children and adults with physical or mental health problems animal contact can improve mood. Children with psychiatric disorders showed better intra-emotional balance after only a single therapy session with a dog Prothmann et al. In hospitalized children, both, AAT and traditional play therapy improved mood, as reported by the parents and children themselves, but only AAT was associated with display of positive affect Kaminski et al.

Anti-stress effects A large body of studies investigated the effect of interacting with animals on stress, operationalizing stress either via endocrinological or cardiovascular parameters. Effects of HAI on cortisol, epinephrine, and norepinephrine HAI has been investigated for its effects on hormonal indicators of stress such as cortisol, and on neurotransmitters such as epinephrine and norepinephrine. First, studies not employing a specific stressor, then studies including a stressor are reported. These studies provide direct evidence that interaction with a friendly companion animal, in particular a dog, positively affects endocrine responses as indicated by changes in the levels of cortisol, epinephrine and norepinephrine, suggesting an attenuation of stress responses via HAI. Before baseline , during and after the interaction or resting, serum cortisol, epinephrine, and norepinephrine as well as salivary cortisol were collected. A significant reduction of serum and salivary cortisol, but no effects on the other parameters, were found in the dog conditions. Odendaal and Odendaal and Meintjes assessed changes in plasma cortisol in dog owners when petting their own, or an unfamiliar dog, or quietly reading a book. The interaction with their own dog, and also with the unfamiliar dog, but not the reading condition led to a significant decrease in the cortisol levels of the humans. A study by Cole et al. Significantly lower epinephrine and norepinephrine levels were measured during and after the dog visits. The effect of social support by a dog in comparison to support by a friendly human during a social stress test on the cortisol levels of children with insecure attachment representations was investigated by Beetz et al. The

support by a friendly dog during the experiment was associated with significantly lower cortisol levels than support by a friendly human. This effect was strongly correlated with the time the children spent in physical contact with the dog during the experiment. Effects on blood pressure, heart rate, and heart rate variability A substantial number of well-designed studies investigated the effect of HAI on blood pressure and heart rate, some also included skin temperature or skin conductance, either in the absence of a specific stressor or during a stress-inducing task. Blood pressure was lower when the dog was present during the entire time than when the animal was just introduced during the second half of the observation time. Grossberg and Alf compared the effect of stroking a dog vs. Blood pressures were significantly lower when stroking a dog than when chatting or reading, however, it was lowest during rest. A positive attitude toward companion animals was associated with lower mean arterial pressure and systolic blood pressure. Vormbrock and Grossberg assessed heart rate and blood pressure while undergraduates interacted with a dog visually, verbally, or tactually. Blood pressure was highest while talking to the experimenter and lowest during stroking the dog. In adults hospitalized with heart failure, a min visit by a person with a dog led to a greater decrease in systolic pulmonary artery pressure during and after the visit when compared to a visit by a person alone Cole et al. While walking the dog, heart rate variability was significantly higher than when walking alone. Generally, higher heart rate variability indicates a relaxed state and an increase of parasympathetic activity. Similarly, Handlin et al. The following studies assessed the effect of interactions with unfamiliar animals on heart rate and blood pressure before, during or after a stressor. In a similar study, Hansen et al. Behavior observation documented less behavioral distress when the dog was present. However, there were no significant differences in the physiological parameters between the two groups. The intervention group had a dog beside them during the procedure, while children in the control group had no dog or a supportive person present. Only children who had stated before the procedure that they were stressed by having to come to the dentist showed a significant attenuation of the stress response, measured as less decrease in skin temperature; the presence of the dog was observed for the time while the children waited for the dentist to arrive. At the group level, the intervention group did not significantly differ from the control group. Demello studied adults while they were recovering from a cognitive stressor under three conditions, with a pet present and only visual contact allowed, or with tactile contact allowed; in the third condition no pet was present. As expected, the cognitive stressor led to an increase in heart rate and blood pressure and these parameters decreased most in the condition where the pet was present but no tactile contact was allowed. Stroking the animal did not affect blood pressure, but resulted in a significant reduction of heart rate. Studies investigating the effect of an aquarium in the room differ from others due to the species and restricted possibilities for contact. In a sample of elderly adults, DeSchrive and Riddick compared the effects of watching an aquarium, a fish videotape, or a control tape on heart rate, skin temperature, and muscle tension. While the group observing the real aquarium showed a trend for lower heart rate and muscle tension as well as for an increase in skin temperature, none of the group comparisons reached statistical significance. Similarly, Barker et al. At home, pulse rate, blood pressure, and skin conductance were lower in the presence of the pet than when alone or with a friend. In the presence of their pets, pet owners showed significantly lower heart rate and blood pressure before the task, less increase in reaction to the stressor and a faster recovery than the non-pet-owning participants who had a friend present. Among pet owners the presence of the pet attenuated the stress response more than the presence of the spouse. Hypertensive patients profit from acquiring and having a pet with regard to stress-related parameters such as heart rate blood pressure and plasma renin activity, an indicator of hypertension. In a study by Allen et al. Then all participants started to take medication for hypertension and half of the group was motivated to acquire a pet. After half a year the stress task was repeated in the homes of the participants. The pet owners had their pet present during the task and showed lower blood pressure than the control group.

Chapter 4 : Interaction With Wild Animals: Good or Bad

Human interactions with microbes include both practical and symbolic uses of microbes, and negative interactions in the form of human, domestic animal, and crop diseases.

Interaction With Wild Animals: I believe it must first be understood that this question falls into the same category as questions such as "is it good or bad to have a gun for protection," or "is religion a good or bad thing for society. The first question to be asked is "Why? Here are a number of constructive reasons for interaction, which I will address individually: Emotional Benefits We humans know that our health and general well being is dependent on a number of factors including proper nutrition, proper medication, exercise, and a positive emotional attitude and outlook. Do we not feel that they would benefit tremendously from a positive mental and emotional outlook? It can be argued that many wild animals have a more highly developed emotional range than humans do and therefore need more attention addressed to this element. I personally have found that there is more difference in personality and characteristics between individuals within a species of big cat than there is between differences among species. We have 68 big cats at the International Exotic Animal Sanctuary, including 21 tigers, 14 lions, and seven leopards. I therefore have had a chance to work with many individuals within a species. They have the same ranges in personality and temperament, as do humans. For example, we have two female Amur Leopards that were raised together, live together, and had almost exactly the same environment while growing up, yet they are as different as any two human sisters might be. I spend a great deal of time with them, and their personality differences are more noticeable than are their similarities. They are placed in an unnatural setting in captivity, and since they of necessity have to have humans around them, they are much more comfortable and relaxed if they view humans positively. As we all know, all the large big cats are solitary in nature, with the exception of lions. Yet my experience is that all species of big cats generally crave and desire positive human attention as much as any other being. In fact, for some reason I find that cougars and leopards-probably the most solitary of cats in nature-are perhaps the most affectionate of cats with humans they trust. We find that our cats benefit in reduced stress level, comfort around volunteers and employees, and even comfort around tour groups, once they develop a positive one-on-one relationship with a human. Now, the phrase "positive one-on-one relationship" is critically important. I work with all wild animals using no discipline and no reward. Only affection, trust and respect. If the purpose in having interaction is to benefit the animal, it must be a completely positive experience for the animal; otherwise there is no purpose under this category or reasons for interaction. That means one must start with the proper experience, knowledge, and motivation. Without all of these qualities, it is a recipe for failure, or worse-injury. One must know which individual would probably benefit. Next, the human must know what activities and interaction will produce positive emotional benefits, and the human must be motivated only for the benefit of the animal involved. If one has any other purpose for the interaction such as ego gratification, desire to dominate, or to show off to others, the animal will probably not respect or trust the human and it will not be a positive activity for either party. In fact, someone with improper motivation will most likely end up seriously injured, and the animal will also suffer as a result. It must also be emphasized that positive interaction does not have to take place in unprotected contact with a wild animal; many of the benefits of emotional bonding and trust can be achieved from protected contact through a fence. I have given tigers and other large cats shots for days, taken urine samples, removed objects jammed in their teeth, removed obstructions around the animals, and checked paws, etc. I have heard of others doing artificial insemination without sedation. We have made a number of moves from habitat to habitat without stress, sedation or obvious discomfort. Safety Issues There is a great benefit to having someone present at any facility that has a positive relationship with each individual animal, from a safety standpoint. Failure to do so frequently has resulted in injury to animals, humans or both. With few exceptions, the presence of someone with whom the animal feels comfortable and trusts can minimize potential for harm to either animals or humans. A caregiver that animals look to as a source of security and support can often lead escaped animals back to their enclosures, since they are frightened once they escape and seek a source of comfort.

Conditioning a dangerous animal to accept humans as caregivers rather than a source of irritation, stress or agitation can be the difference between life and death. I was responsible for the conditioning of one of the tigers. A very experienced friend of mine conditioned the other tiger. Public Education and Conservation This section will undoubtedly be controversial, for my experience is that not one person working with wild animals will agree with everything I say here. Also, I very much doubt that anyone working with wild animals would agree with everything anyone else said on this subject. On the other hand, I and many others that have close relationships with wild animals realize that they are as individual as are humans. For instance, the statement often heard that all wild animals would be better off in the wild than in the best conditions of captivity is too confining. It has been illustrated time and again that we humans only care about preserving those animal species with which we identify in a positive and caring manner. Examples such as dolphins, killer whales, panda bears, koalas, and wolves illustrate the value of human caring. And, even some of those species are having difficulty surviving because of habitat destruction, poaching, commercial activities, and conflict with agricultural and developing interests. While I consider myself an animal activist, I also have a pragmatic understanding that appropriate venues are necessary to enable the public to identify with individuals of species-particularly carnivores and large wild animals such as bears-in order for the public to take an interest in their treatment and survival. Many wrongs have been committed in the attempt to use animals for entertainment, including past inappropriate activities such as: Add to those obvious infractions the following inappropriate, and stressful activities such as: They characterize all these activities as exploitation and inappropriate use of a wild animal. Many of them are. These activities send a wrong message to the public and perpetuate the treatment of animals as objects to be utilized in any manner we choose for entertainment. The appropriate venues that do treat wild animals with respect and utilize natural behavior are cast in the same light, because the majority of uses are the inappropriate ones. Therefore, the opportunity to educate the public about treating wild animals with the respect and dignity to which they are entitled, while getting the public to identify with them, is being questioned, and we have "opportunities lost. The solution by a large number of the zoological community members that realize the mistake has been to decree that they will no longer utilize wild animals in any venue involving human interaction, and therefore the animals will then be treated more as exhibits, not sentient beings. This choice would result in further distancing the public from identification with wild animals and vastly inhibit the ability to marshal sentiment for conservation and protection methods that will be crucial to the survival of most of the larger species of wild animals. I would submit that there are appropriate and proper venues that involve wild animals in a manner that is educational to the public, help the public identify with a particular species of wild animal and is enjoyable or at least not stressful for the animals involved. First, the organization developing the interaction must carefully select individuals within a species that are temperamentally suited to activities involving masses of people. Each animal is an individual, and some wild animals like solitude, while others can enjoy interaction in front of a crowd if they are treated with respect and concern for their welfare and comfort. Next, any interaction should be designed to display the particular species of animal in a venue that allows it to use its natural behavior in a manner that the public enjoys but is also pleasurable for the animal. As far as exotic cats, this would involve a natural setting wherein the cat would chase lures or other objects, perhaps climb trees, and leap from object to object. Properly done with the right cats, this activity can be fun for the cats, if they are treated with the proper respect and concern for their comfort and welfare. In addition, it would educate the public about their playful and sometime affectionate nature, while at the same time showing that any use of a wild animal should involve activities that the animal finds enjoyable as much as the public. For primates, an appropriate activity could be having a grouping of ropes and swings in an area and having the trainers swinging and engaging in natural primate activities with the primates that would be fun for the primates as well as the public. In my opinion, if wild animals are to be used in television shows, there should be conditions present that minimize the stress to the animal while ensuring its safety and security. Only animals that have proven to be comfortable around groups of people should be used, and the particular television show should show appropriate respect and consideration for the animals and not ridicule their behavior or nature. Also, there should always be a message about the need to respect and to preserve our natural world. Otherwise there is no educational value, rather the

message given is that it is okay to exploit and utilize animals in any manner we choose for our entertainment. Rather, all public uses of wild animals should emphasize that it is wrong and improper to enjoy seeing an animal in stress or discomfort in any manner. Nor should an enlightened public get pleasure out of seeing an animal made to engage in unnatural behavior. In summation, well-planned and well-executed interaction between human and animal can be a constructive and positive activity for a variety of reasons. Not the least of which is that hopefully future generations will grow to accept that all higher beings on this planet are entitled to some rights and concerns for their emotional needs and rights. Half a century ago humans were guilty of classing other humans in a subordinate classification and treating them as something to be separated and treated differently. Our state of enlightenment in the 21st Century can hardly realize how that activity came to be and was accepted for so long. Only dedicated individuals embarking on a lifelong journey to learn about the animals on their terms and with respect of their instincts and needs can bring that recognition about. Necessarily, it will take interaction and understanding to achieve those results. Mistakes will be made. People will be injured. Has any achievement-including the struggle to establish equal treatment of all humans-taken place without those very same sacrifices?

Chapter 5 : Human interactions with microbes - Wikipedia

Humans have a natural interest in animals; through a long history of domestication, they have become tools, a food source and even friends. Behaviour is a significant indicator of animal health and well-being, and understanding this behaviour is therefore the key to good management.

Broom and Andrew F. Bibliographic record and links to related information available from the Library of Congress catalog. Contents data are machine generated based on pre-publication provided by the publisher. Contents may have variations from the printed book or be incomplete or contain other coding. Contents Preface Acknowledgements Introduction, concepts and methods 1. Describing, recording and measuring behaviour Fundamental processes 3. Experience, learning and behaviour development 4. Welfare assessment Organisation of behaviour 7. Behaviour towards predators and social attackers 8. Locomotion, space occupied Rest and sleep Social and reproductive behaviour General social behaviour Human-domestic animal interactions Seasonal and reproductive behaviour Sexual behaviour Early and parental behaviour Foetal and parturient behaviour Maternal and neonatal behaviour Juvenile and play behaviour Welfare topics Handling, transport and humane control of domestic animals Welfare and behaviour in relation to disease Welfare of cattle Welfare of pigs Welfare of poultry Welfare of farmed and pet fish Welfare of animals kept for fur production Welfare of horses Welfare of farmed and pet rabbits Welfare of dogs Domestic animals -- Behavior.

Chapter 6 : Human-Animal Interaction Studies

H AIS is an interdisciplinary collaborative project that seeks to highlight the strengths of Colorado State University faculty and programs in relation to the cultural study of animals and human-animal interactions.

Chapter 7 : Fidisoa Rasambainarivo “ Conservation Medicine and wildlife health, Madagascar

Explore humans interactions with animals through the extraordinary lives of animal handlers, explorers and protectors.

Chapter 8 : OPINION: DO WE NEED TO INDUCE STRESS in the ONE-HEALTH PARADIGM? | THE OUT

An investigation of human-animal interactions and empathy as related to pet preference, The facilitation of social interactions by domestic dogs.

Chapter 9 : Domestic Animal Behaviour and Welfare

Managing the Problem of Parasite Spread. As we recently discussed for the prevention of flea spillover between domestic animals and wildlife, we propose that control measures that minimise the interactions of humans and domestic animals with wildlife are necessary if we want to reduce the risk of parasite spillover.