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1997 International Society of Anthrozoology Conference
Thursday, July 24, 1997
PROGRAM

Plenary Address:

Pets as Moderators of Blood Pressure and Heart Rate: The Buffering Hypothesis and the Main Effect of Social Support.

Dr. Karen Allen - State University of NY, Buffalo

Scientific Session: Animals and Human Health

Pets in the Family: Predictive Well-being in Community-based Military

Drs. Cindy C. Wilson & Sandy L. Triebenbacher, USUHS

Life Events and the Elderly: Do Pets Play a Role?

Dr. Marie-Jose Enders-Slegers, Utrecht University

Attachment to Cats and its Relationship with Emotional Support: A Cross-cultural Study

Drs. John Bradshaw & Jennifer Limond, University of Southampton

Poster:

Cardiac and Behavioral Responses to Humans in an Adult Female Japanese Macaque (*M. fuscata*)

Drs. Naoko Koda, Shoji Machida, Shunji Goto, Masayuki Nakamichi, Naosuke Itoigawa & Tetsuhiro Minami, Osaka & Kyoto Universities

Plenary Address:

Novel Approaches to the Relationship Between Humans and Other Species

Dr. Marion Copeland, Holyoke Community College, MA

Scientific Session: Animal Behavior and Human Interactions

What People Say to Dogs When They are Playing with Them 40475

Drs. Robert W. Mitchell and Elizabeth Edmunson, E. Kentucky University

Gaze and Mutual Gaze: It's Importance in Cat/Human and Cat/Cat Interactions

Drs. Deborah Goodwin and John Bradshaw, University of Southampton

Behavioral and Physiological Responses of Horses to Initial Training: The Comparison between Pasture versus Stalled Horses

Drs. E. Rivera, S. Benjamin, B.D. Nielsen, J.E. Shelle and A.J. Zanella, Michigan State University

Adolescent Volunteers in Wildlife Education

Drs. Robert Kidd and Aline Kidd, Walnut Creek, CA

Friday, July 25, 1997

PROGRAM

Plenary Address:

Links Between Animal and Human Abuse

Dr. Arnold Arluke, Northeastern University

Scientific Session: Human-Animal Issues

Optimism and Attitudes of Animal Rights Demonstrators

Drs. Harold Herzog and Shelly Galvin, Western Carolina University

Learning the Scientist's Role: Animal Dissection in Middle School

Drs. Dorian Solot and Arnold Arluke, Northeastern University

Food for Thought? Some Reflections on the Impact of Intensive Livestock Production

Dr. Jo Swabe, University of Amsterdam

Cultural Effects of the Introduction to Japan of Fly-Fishing

Drs. Erick Laurent and Ken Ono, Kyoto

Seminar:

Not a Wolf, Not a Tiger, Not a Furry Humanoid:

**Domestic Animal Behavior as it may Affect the
Treatment of Medical and Behavioral Problems, Pet
Placement, and the Therapeutic Use of Dogs and Cats.**

Dr. Myrna Milani, Charlestown, New Hampshire

Plenary Session:

Animals As Symbols: The Convergence of Nature and Culture

*Dr. Elizabeth A. Lawrence, Tufts University School of Veterinary
Medicine*

Scientific Session: Human-Animal Interactions

Changing Traditions of Mahouts with Asian Elephants

Dr. Lynette A. Hart, University of California, Davis

Pet Ownership Across Generations

Aline Kidd and Robert Kidd, Walnut Creek, CA

Pet care Practices and Attitudes to Stray Dogs and Cats on Guam

*Drs. Rebecca Diaz, R. Lee Zasloff, & Lynette A. Hart, University of
California, Davis*

Interactions with Animals as predictors of Empathy in Children

Drs. Deborah Sezon and Ronald Baenninger, Temple University

A Study of the Epidemiology of Animal Abuse in Massachusetts

*Ms. Lori Donley and Dr. Gary Patronek, Center for Animals, Tufts
University School of Veterinary Medicine*

Concluding Remarks:

International Activities of IAHAIO in 1997 and 1998 (Prague)

Dr. Dennis Turner, IAHAIO

PLENARY ADDRESS

Pets As Moderators Of Blood Pressure And Heart Rate: The Buffering Hypothesis And The Main Effect Of Social Support

THURSDAY, JULY 24, 1997

PETS AS MODERATORS OF BLOOD PRESSURE AND HEART RATE: THE BUFFERING HYPOTHESIS AND THE MAIN EFFECT MODEL OF SOCIAL SUPPORT

Karen Allen, Ph.D. School of Medicine, SUNY at Buffalo

In recent years health psychologists have focused considerable attention on whether positive relationships between social support and health occur because support enhances health and well-being *regardless* of stress level (the direct or main effect hypothesis) or because support protects individuals from the pathogenic effects of acute, stressful events (the buffering hypothesis). This presentation will consider three social psychology studies (described below) that were designed to explore various conditions under which the social support of pets can moderate blood pressure and heart rate. Results of these investigations suggest that the support of pets can provide *both* direct and buffering effects on cardiovascular health. The degree to which the support provided by pets is adequately characterized by existing social support assessment instruments will be addressed.

Study 1: Presence of Human Friends and Pet Dogs as Moderators of Autonomic Responses to Stress in Women. In this study heart rate, blood pressure, and skin conductance response were measured while 45 adult women performed a standard experimental stress task in the presence of a female friend, pet dog, or neither. Results demonstrated that autonomic reactivity was moderated by the presence of a companion, the nature of whom was critical to the size and direction of the effect. Participants in the friend condition exhibited higher physiological reactivity and poorer performance than participants in the control and pet conditions. Participants in the pet condition (with their own dogs) showed lower physiological reactivity during stress than individuals in the other conditions. Results are interpreted in terms of the degree to which friends and pets are perceived as evaluative.

Study 2: Anger and Hostility Among Married Couples: Pet dogs as Moderators of Cardiovascular Reactivity to Stress. Previous research suggests that cynical, hostile attitudes may undermine the stress buffering potential of interpersonal support. This study extends research in study 1 (above) and includes a comparison of the support provided by dogs, spouses, and friends.

Participants were 240 couples (half of whom owned dogs), and the stressors were mental arithmetic, cold pressor, and giving a speech. Relative to other experimental conditions, participants had the highest reactivity and the worst task performance ($p < 0.01$) in the presence of their spouses. Next highest reactivity was in the alone condition, followed by the condition that included a spouse together with either a dog or human friend. Lowest of all reactivity ($p < 0.01$) was the condition with the dog only. These findings apply across all tasks, and were even more pronounced in individuals who were high in cynical hostility and low in social support.

Study 3: Social Support and Resting Blood Pressure Among Young and Elderly Women: The Moderating Role of Pet Dogs and Cats. Past research has documented that aging is generally associated with increases in resting blood pressure, and that social support factors may moderate age-related differences in cardiovascular function. The current study explored the importance of *type* of social support (human vs. pet animal) among young and elderly women who live alone. Participants were 100 women (50 women in their 20s and 50 women in their 70s). Half of the women in each age group had pets (cats or dogs). The study included 4 blood pressure measurements over a six month period. Findings indicate that elderly women reporting low social support and *no* pet had average resting blood pressures that were significantly higher than their counterparts *with* pets. In fact, the blood pressures of the socially isolated elderly women with pets were quite similar to those of young women.

GOD-PLAYERS, BEST FRIENDS, AND FACILITATORS: HOW THE ROLE ASSUMED BY THE CARE-GIVER OR THERAPIST CAN AFFECT ANIMAL AND HUMAN ALIKE

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Introduction:

Although most professionals don't realize it, they may assume a god-player, best friend, or facilitator role when working with others. Unfortunately, professionals often adopt a role because it makes them feel comfortable, a view their clients and patients may not share. This presentation describes the basic characteristics of each approach and how it may enhance or undermine quality interactions with humans and animals.

- I. The God-Player represents the traditional approach espoused by academia and most professional texts.
 - A. Advantages and disadvantages for human clients/patients
 - B. Advantages and disadvantages for animals
 - C. Advantages and disadvantages for clinicians
- II. The Best Friend approach has its roots in the so-called "nurturing ethic," and may occur as a reaction to the god-player orientation.
 - A. Advantages and disadvantages for human clients/patients
 - B. Advantages and disadvantages for animals
 - C. Advantages and disadvantages for clinicians
- III. The Facilitator attempts to be all things to all humans and animals, with more or less success depending on the situation.
 - A. Advantages and disadvantages for human clients/patients
 - B. Advantages and disadvantages for animals
 - C. Advantages and disadvantages for clinicians

Conclusion:

Because the professional's role inevitably will affect the response of all of those involved in a human-animal interaction, selecting that role which will yield the most benefits on a per case basis produces the most consistent, positive results

SCIENTIFIC SESSION I

Animals And Human Health

PETS IN THE FAMILY: PREDICTIVE WELL-BEING IN COMMUNITY- BASED MILITARY

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Introduction and objective: Previous research has evaluated the human animal bond in military communities at times of transfer. There has also been some attempt to determine sociological and psychological factors which influence quality of life in the mobile military member and family. Previous studies have not, however, specifically examined the roles, functions, and contributions of companion animals within the context of the military family unit. Family Development Theory is an appropriate theoretical framework to examine the interrelated components of family functioning with this population. This research examines reasons why community-based military have or do not have companion animals and seeks to determine if there are sets of variables that can predict pet benefit on the basis of life course influencing variables and current circumstances as one ages.

Subjects: A nonprobability sample was drawn from five (5) military Family Practice clerkship sites and included 199 nonowners and 258 owners for a total sample of 457 respondents between the ages of 14 and 80 years (200 males, 256 females, and 1 respondent did not indicate gender).

Research Design: A survey method utilizing self-administered questionnaires was used. Respondents completed the following: Pet Attitude Inventory, Pet Attachment Scale, demographic and health (physical and social well-being) questionnaire.

Results: (1) Elderly pet owners who were highly attached to childhood pets had higher levels of attachment to current pets than elderly pet owners who did not have high levels of attachment in childhood ($\chi^2=18.84$, $df=3$, $p<.001$); (2) among retirees, type of pet could be predicted on the basis of childhood ownership; (3) attachment to a pet relates positively to self-reported health; (4) positive relationship between single family housing type and ownership (beta weight = 2.269, $p<.0011$); (5) current levels of attachment were related to

childhood level of attachment ($\chi^2 = 65.67, df=4, p<.001$) and current attitudes toward pets ($\chi^2 = 72.75, df=4, p<.001$); (6) four significant predictors of ownership emerged: hassles vs. pleasure of owning a pet (beta coefficient = $-.737, p<.001$), family visits (beta coefficient = $-.220, p<.001$), military rank (beta coefficient = $-.469, p<.01$), housing (beta coefficient = $-2.269, p<.05$).

Discussion / Conclusions: Pets appear to serve important roles within the context of the family unit as 68.2% of the respondents considered pets to be family members and 60.5% stated that they were very attached to their pet. While some parallels exist between community-based military and the normal population, results are discussed in relation to the unique and specific nuances characteristic of military family units.

LIFE EVENTS AND THE ELDERLY: DO PETS PLAY A ROLE?

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Faculty of Social Sciences, Utrecht University, The Netherlands*

There is considerable evidence to indicate an increased prevalence of life stressors among the elderly (Bieliauskas et al., 1995).

Fuller and Larson (1980) suggest that stressful life events account for 20% of the variance in functional health of elderly people. Social support is often mentioned to play an important role in mediating the negative effects of stressful life events (Dunkel-Schetter, Folkman & Lazarus, 1987). Research has focused almost exclusively on humans as providers of social support in times of stress. However, evidence was found that pets can also provide support, reduce psychological distress and enhance physical well-being (Enders-Slegers, 1996). Within the framework of our main research project into the meaning of companion animals for the quality of life of the elderly, we hypothesized, in line with Siegel (1990), that companion animals add to the well-being and reduce distress in times of stress for the elderly.

Our sample included 78 participants, owners and non-owners of companion animals, in the age of 70-80 years.

The participants were visited twice, with an interval of two years. A 'baseline' of quality-of-life measures was established at the first measurement. Two years later the life-events were counted, and rated according to the Social Readjustment Scale by Holmes and Rahe (1967) and 'quality of life' was measured a second time.

The life-events were dichotomized as either positive or negative according to Bieliauskas, Counte en Glandon (1995). The participants reported 139 negative life-events (e.g. death of a spouse, close friend) and 53 positive life-events (e.g. birth of grandchild, celebration).

With SPSSpc we analysed our quantitative data (demographic variables, subjective and objective 'quality-of-life' measures, life-events).

With Kwalitan we analysed the interviews, in which the participants discussed the role of their pet during stressful periods. The puzzling results of this investigation will be presented and discussed.

ATTACHMENT TO CATS AND ITS RELATIONSHIP WITH EMOTIONAL SUPPORT: A CROSS-CULTURAL STUDY

Bradshaw, John, BA, PhD

Limond, Jennifer, Bsc

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Recently, the concept of attachment of owners to their pets has come under scrutiny; some authors have questioned its validity, while others have attempted to refine it. We suggest that it may be useful to consider attachment to a pet as separate from the degree of emotional support that the pet provides; for example, it seems reasonable that some people could express a strong attachment to a pet without gaining any emotional support from it, and therefore the two concepts may not be as tightly linked as they are sometimes assumed to be.

We have assessed owners' perceptions of their cats, and the degree of emotional support they obtain from the cat, through a questionnaire containing 52 Semantic Differentials describing the cat and its relationship to the owner, and ratings of how much the owner might turn to the cat in nine situations. This was administered to 100 cat owners in England (UK), 100 in the Netherlands (NL) and 100 in California (CA) (209 females, 91 males; 88 18-29 years, 72 30-39 years, 78 40-49 years, 38 50-59 years, 24 60+years; gender and age balanced between countries).

After Principal Factor Analysis with varimax rotation, the Semantic Differentials reduced to eleven interpretable factors. Eight of the Factors appeared to reflect aspects of the cat's personality as perceived by its owner, and will not be discussed further. Three of the factors primarily described the relationship between owner and cat, and may reflect different aspects of "attachment". We have termed these Companionability (driven by items such as "comforting, gives you support, calming, good for your health, a companion, reassuring, lovable, a friend, makes you happy"), Congeniality ("amusing, entertaining, interesting, gives you pleasure") and Owner-orientation ("affectionate, attentionseeking, sociable, friendly to you, trusting, predictable, loyal"). Correlations between these three factors were zero (a result of the type of rotation used) across all countries and did not

exceed +0.25 for any one country. In all three countries, the averages for Companionability ($F_{1,271}=8.45$, $P<0.01$) and Owner-orientation ($F_{1,271}=5.22$, $P<0.05$) were significantly higher in women than in men, and the same trend was apparent in Congeniality. No significant effects of the age of the respondent were detected.

Factor analysis of the ratings of emotional support indicated a single underlying dimension, and therefore the nine ratings were averaged. Comparing the three countries, this Emotional Support variable was rated highest in CA, and lowest in NL ($F_{2,271}=5.81$, $P<0.01$), but the average values spanned less than 10% of the whole scale. A slightly larger difference (12%) separated the average for women from the average for men, with women scoring higher ($F_{1,271}=14.8$, $P<0.001$). Emotional Support correlated positively with Companionability in both women ($\rho=0.495$, $P<0.001$) and men ($\rho=0.514$, $P<0.001$). Partial correlation between Emotional Support and all three attachment variables indicated that Congeniality also contributes to Emotional Support in women ($r=0.287$) but not in men ($r=0.053$), no contribution from Owner-orientation could be detected. We conclude that attachment to pets should be regarded as a multidimensional concept, only some aspects of which are directly related to the perceived level of emotional comfort received from the pet, and therefore that "attachment" and "emotional support" should not be used interchangeably.

CARDIAC AND BEHAVIORAL RESPONSES TO HUMANS IN AN ADULT FEMALE JAPANESE MONKEY (*MACACA FUSCATA*)

Naoko KODA¹⁾, Shodi MACHIDA¹⁾, Shunji GOTO²⁾, Masayuki NAKAMICHI¹⁾, Naosuke ITOIGAWA¹⁾ and Tetsuhiro MINAMI¹⁾

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This study was conducted to elucidate the physiological and behavioral effects of humans toward a 9year-old, female Japanese monkey. We examined mean arterial blood pressure (BP) and behaviors of the monkey, and showed whether the monkey discriminated between men and women, and between caretakers and strangers.

Five male and 6 female caretakers, and 5 male and 6 female strangers (age range; 21-40 years old) were introduced to a female monkey. The caretakers had taken care of the monkey for one or more years. The strangers were unfamiliar with the monkey. Each human, wearing white lab coat, sat quietly approximately 110 cm apart from the cage. The BP was recorded every 10-second (1 time block) with an unrestrained telemetry system. Behaviors of the monkey were recorded by a VTR camera and BP was measured for 10 minutes before a human sat in front of the monkey (the preappearance stage) and for 10 minutes during a human sat at it (the appearance stage). To examine the effects of a human on BP, we used the increased value which was the highest value of BP just after a human appeared at the appearance stage minus an average value of BP at the pre-appearance stage, and the number of time blocks which the value of BP was continuously higher than the average value of BP at the pre-appearance stage.

The level of BP and the frequency of alert behaviors, such as looking at the humans and standing up with hinder legs immediately after a human appeared at the appearance stage, increased. The increased value and the number of time blocks when men were in front of the monkey were significantly greater than those of women (the increased value; $F[1, 18]=6.67$, $p<0.05$. the number of time blocks; $F[1, 16]=7.03$, $p<0.05$). At the increased value and the number of time blocks, differences between the caretakers and the strangers were not significant (the increased value ; $F[1, 18]=1.31$, $p>0.05$. the number of time blocks; $F[1, 16]=0.29$, $p>0.05$). The effects of interaction

between sex of human and familiarity were not significant (the increased value; $F[1, 18]=0.01, p>0.05$. the number of time blocks; $F[1, 16]=0.37, p>0.05$). The duration of the alert behaviors just after the appearance of men was longer than that of women ($F[1, 181]=6.73, p<0.05$). The duration of the alert behaviors just after the appearance of strangers was also longer than that of caretakers ($F[1, 181]=4.54, p<0.05$). The effect of interaction between sex of human and familiarity was not significant ($F[1, 18]=0.24, p>0.05$).

These findings indicate that the appearance of the humans influences the Japanese monkey physiologically and behaviorally, and suggest that the monkey discriminates between men and women, and between caretakers and strangers.

This study was supported by a Japanese Government Grant.

PLENARY ADDRESS

**Novel Approaches To The
Relationship Between
Humans And Other
Species**

NOVEL APPROACHES TO THE RELATIONSHIP BETWEEN HUMANS AND OTHER SPECIES

Copeland,
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It will come as no surprise that animal characters enliven the written and oral stories of every human culture. It is also commonly accepted knowledge that in European and Euro-American written literatures animal characters occupy center stage far more frequently in works -- particularly in prose works -- intended for children than in those aimed at either a young adult or an adult audience. That division has seldom been examined in terms of the anthropocentric bias of the adult reader in our culture. My suspicion is that such assumption tell us more about the culture's prevailing attitudes toward the animal or the child than they do about works of literature and that many literary works, read without that bias, take the reader back to the nonhuman origins of our species which somehow seem so obvious in the soil of childhood and elusive in the concrete world of the adult. I will reexamine several canonical characters to test this hypothesis and go on to suggest that the "animistic" novel, rightly read, taught, or critiqued, can play a significant role in the metamorphosis of the relationship between humans and other species currently underway.

SCIENTIFIC SESSION II

Animal Behavior And Human Interactions

WHAT PEOPLE SAY TO DOGS WHEN THEY ARE PLAYING WITH THEM

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When people interact with animals, they commonly talk to them as if they are people. We examined videotapes of play by 32 dog-human pairs for people's talk to the dogs. Sixteen of the pairs were familiar with each other, the other half were not. The mean age of the humans was 30 years (range 15-60 years), and the mean age of the dogs was 6 years (range 8 months to 14 years). Videotapes were transcribed by the second author, and checked by the first. We came up with a total of 2,149 utterances. Six dominant themes of "conversation" were observed, in decreasing order of frequency: directing the dog's behavior (the most frequent type of utterance, at 61%), getting the dog's attention, asking the dog for information, reassuring or praising the dog, describing what the person is doing, and describing or evaluating what could happen or is happening. People appear to talk to dogs for many of the same reasons they talk to infants: because they want to influence their behavior, because the communicative recipient (dog or infant) is so responsive to their activities, and because talking to the recipient gives them the feeling of effective communication and connection.

GAZE AND MUTUAL GAZE: ITS IMPORTANCE IN CAT/HUMAN AND CAT/CAT INTERACTIONS

Deborah Goodwin and John W.S. Bradshaw. Anthrozoology Institute, University of Southampton, Southampton, UK.

Direction of gaze has been shown to be an important factor in many studies of human behaviour and communication. Although it is often asserted that cats use eye contact to communicate with people and other cats, there has been little systematic study of the effects of gaze on their behaviour. We are, therefore, exploring the importance of eye contact in cat/human and cat/cat interactions.

Preliminary trials had shown that the cats' behaviour was largely unaltered if the human subject was familiar or female. Therefore, in this cat/human trial eight cats (6 female, 2 male, all neutered, 8-9 years) were introduced one at a time, for one minute into a familiar room containing one of eight seated unfamiliar human males. Each person met every cat in one day, but each cat only met one person per day, in an order determined by a Latin Square design. The people were asked to behave in one of the following ways; [i] look at the cat until eye contact was made (or 20 seconds if less) and then turn the head away, [ii] look directly at the cat for the full minute, eye contact to be broken only by the cat. Sessions were recorded on videotape, observed using the Observer 3.0; and analysed using Statgraphics v5.

Human eye contact was found to significantly affect several aspects of the cats' behavior. If the men looked away after initial eye contact, the cats looked at them more frequently ($F=7.9$, $P<0.05$) and for longer per bout ($F=6.2$, $P<0.05$), they also sat facing them more frequently ($F=13.4$, $P<0.01$). When stared at, the majority of the cats hid behind the sofa more frequently ($F=15.1$, $P<0.01$) and for longer ($F=9.9$, $P<0.05$), though a minority approached the person and some jumped on their lap. Principal components analysis revealed that the cats adopted one of two main strategies when stared at; some hid behind the sofa, and others avoided their gaze by not facing or looking at the person. Of the latter group, some also used the "tail up" signal longer ($F=7.6$, $P<0.05$) possibly as an appeasement signal.

Cat/cat interactions were observed using the same eight cats (3 male, 5 female) introduced in pairs to the same familiar room for a period of 4 minutes. Each cat met every other cat twice, but individual cats only met one other cat per day. Markov chain analysis of the sequences of behaviour patterns revealed that the most common transition was Look followed by Look Away ($N=273$, $P<0.001$), which suggests that it is important to monitor the position of the other cat in the dyad. Look Away was most likely to be followed by Sniff Object ($N=107$, $P<0.001$) or Groom Self ($N=45$, $P<0.001$), both possibly displacement activities. Look Away also, but less frequently, lead to Tail Down ($N=27$, $P<0.001$) or Avoid ($N=20$, $P<0.01$) which probably indicate an unwillingness to interact. Look was also a precursor to Mutual Gaze ($N=89$, $P<0.001$), and this then lead to a group of affiliative behaviours; Sit Facing, Approach and Sniff Cat ($N=9-11$, $P<0.001$). This may explain why in the cat/human interaction trials some cats responded to a direct gaze by approaching the person and, in some cases, jumping on to their laps, while other cats responded to a direct human gaze by acting defensively.

BEHAVIORAL AND PHYSIOLOGICAL RESPONSES OF HORSES TO INITIAL TRAINING, THE COMPARISON BETWEEN PASTURE VERSUS STALLED HORSES

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Introduction:

There are evidences, for several species, that learning ability may be impaired in animals housed in social isolation or barren environment. Interaction between humans and horses is affected by the environment which the animal is housed. Pasture kept horses have the ability to interact socially and are exposed to a more rich environment but less contact with humans. Horses kept in stalls are exposed to human contact but often have lack of social contact and are exposed to barren environment. Response to initial training may be affected by housing conditions.

Animals material and methods:

Behavioral and physiological responses are being monitored in 16, 2 years old Arabian horses subjected to a standardized "training procedure" (n= 12) carried out by the same trainer or selected as control (C) (n=4). The horses were kept in pasture (P) (n=8) or in individual stalls (S) (n=8) for three months prior to this experiment. Twelve horses, (6p & 6s) were subjected to training and 4 horses (2p & 2s) were used as control. Training consisted of releasing the animal into an empty round pen and its movement by body postures of the trainer. Circa of ten minutes post-release, the horse approached the trainer and a halter was used to handle the horse. After handling the animal a saddle was placed on the animal's back and the horse was released in the round pen. After that the trainer mounted the horse and taught some basic commands to the horses. The training session lasted an average of 30 minutes. Control horses were released into the round pen and left to explore the environment for 30 minutes. Behavioral observation assessing the interactions between the trainer and the horse in training were collected using video recorder. Measures of plasma cortisol were monitored by radioimmunoassay in bloodsamples collected by jugular puncture in training days 1, 7, 21 and 28. Samples were collected prior to training (basal),

immediately post-training (pt), 15 minutes post training (pt15) and 60 minutes post-training (pt60).

Results:

After 20 minutes of handling the trainer was able to mount and ride the horse and minimal behavioral responses were observed. There was no difference in basal cortisol levels among the three groups studied prior to training ($p=181.2 \pm 20.9$; $s=194.30 \pm 57.7$ and $c=182.8 \pm 32.1$; $p=.97$). Plasma cortisol levels showed significant changes after training or exposure to a novel environment in the three groups for day 1 (P: $F=\text{test } 3.59$, $p=0.03$; S: $F=\text{test } 6.22$, $p=0.003$ and C: $F=3.5$, $p=0.04$). Differences between basal cortisol levels and post-training levels were not evident for control horses in days 7, 21 and 28 post-training although they could be observed in trained horses.

Conclusions:

Effective training may be accomplished in rather short time using humane techniques. Housing conditions seems to have no significant effect on cortisol release during initial training in horses. These results may generate recommendations that could be given to horse owners on which training technique and housing conditions that would maximize success of training procedures.

ADOLESCENT VOLUNTEERS IN WILDLIFE EDUCATION

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Although the mass media currently reports negatively on all adolescents, many unreported teenagers are actually making positive voluntary contributions to the preservation of wildlife and environments. Knowledge of the characteristics motivating such teenage volunteers can suggest ways to encourage other adolescents to concern themselves with benefiting people, animals, and themselves.

A group of 12 to 16-yr-old volunteers in the Interpretive Guides Program at the Lindsay Wildlife Museum in Walnut Creek, California, is learning how to teach the importance of wildlife and animal care to people of all ages, how to lead Museum tours and make educational presentations, and how to care for injured wildlife which cannot be returned to their normal wild estate.

All 63 of these Interpretive Guides (20 boys, 43 girls) responded to a telephone survey. In addition to demographic questions, each was asked about experiences with pets and with wildlife, about possible influences on their interest in animals by family, peers, or school programs, about which parts of the program and the reasons they liked most and least, and about any future career plans involving wildlife and environment.

A higher percentage of these volunteers (95%) owned pets than did the average teenager (59%). A higher percentage of girls (68%) than boys (32%) were volunteers. Significantly more boys liked the Walk Throughs ($Z=5.20, p<.01$), preferred working the larger birds and animals ($Z=2.37, p<.05$), and enjoyed handling all the various species ($Z=4.28, p<.01$), but significantly more girls preferred all the activities except the Walk Throughs ($Z=2.10, p<.05$) and preferred working and talking with the younger visitors ($Z=2.10, p<.05$). Most of these volunteers reported becoming interested in animals and wildlife during early childhood through camping trip, zoo and museum experiences provided by parents, grandparents, or other family members.

Additionally, these adolescents had friends who shared their interests, adults serving as role models, the rewards of staff and visitors' approval, and the

interest of instructors and peers all contributing to their positive attitude toward wildlife and their continuing volunteer work.

These volunteers were all from suburban homes. Inner city teenagers have fewer pets, fewer friends interested in wildlife, and fewer programs for which they can volunteer. To create continuing concern for wildlife and to increase the survival of wildlife and the environment, childhood experiences with pets and wildlife, adults acting as role models, and concerned interest for animals in all segments of society are necessary.

PLENARY ADDRESS

Links Between Animal And Human Abuse

FRIDAY, JULY 25, 1997

SCIENTIFIC SESSION I

Human-Animal Issues

OPTIMISM AND ATTITUDES OF ANIMAL RIGHTS DEMONSTRATORS

*Harold A. Herzog and Shelly Galvin
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The animal rights movement has had a significant impact on public attitudes toward the use of animals. A study of activists attending the 1990 March for the Animals found that demonstrators tended to be disproportionately female, middle and upper middle class, politically liberal, and well-educated. They were also more likely than college students to have a personal moral philosophy characterized by belief in absolute moral principles. The purpose of the present research was to assess psychological optimism among animal rights activists attending the 1996 March for the Animals and assess their beliefs about the relative importance of movement goals, the likelihood of achieving these goals, and the perceived effectiveness of various tactics aimed at effecting social change.

Methods: We distributed 750 surveys to the approximately 3000 animal activists attending the 1996 March for the Animals. There were four parts to the questionnaire: (a) demographics; (b) a list of nine movement goals -- respondents rated the importance of each goal and the likelihood of its being achieved within 15 years; (c) a list of eight movement tactics -- respondents rated each in terms of past and future importance; and (d) the Life Orientation Test, a measure of psychological optimism. The activists were asked to fill out the questionnaires after the demonstration and return them via a prepaid envelope. We received 198 questionnaires from individuals who labeled themselves animal activists.

Results and Discussion: The most important goals were the elimination of animal research, the elimination of animal testing of consumer products, and an end to the use of animals for fur. The least important were the elimination of pet-keeping and the wearing of leather. The goals deemed most likely to be achieved were an end to animal testing of consumer products and an end to the use of animals for dissection in public schools. The goals seen as least likely to be achieved were the elimination of pet keeping, meat eating, and hunting. The strategy viewed as most important in achieving movement goals in the future was education of public school

students. The tactics seen as having the least future value were harassment of animal researchers and the liberation of laboratory animals. We predicted that there would be a significant positive correlation between psychological optimism as measured by the LOT and the mean estimate of likelihood of success of reaching the eight movement goals. This hypothesis was verified though the correlation was modest ($r = .205$, $P < .01$). The respondents had significantly higher LOT scores than a comparison group of college students.

LEARNING THE SCIENTIST'S ROLE: ANIMAL DISSECTION IN MIDDLE SCHOOL

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Introduction and Major Results: Based on fieldwork in sixth-grade science classes, this article looks at how students managed the dissection of fetal pigs. Although most students were initially ambivalent and squeamish about dissecting, they learned to transform their contact with the animal and the situation into one that was not only neutral but positive. By transforming their contact with the fetal pigs, accentuating the positive, avoiding part or all of the dissection, becoming macho, and using light-hearted humor, the students could regard the animals as mere specimens and not feel ethically or emotionally uneasy.

Subjects and Method: Twenty-nine white upper-middle class students (sixteen boys and thirteen girls) were directly observed in two sixth grade science classes at a private urban middle school. Dissection was studied from start to finish in two class periods for each class, a six hour process that lasted two days. In addition to the notes compiled in the field, lengthy, semi-structured interviews were conducted with fifteen students, three teachers, three parents, and two administrators. As is conventional, the interviews and field observations were used together to refine and expand analytic "hunches" generated in the course of each.

Major Conclusions: It is argued that this transformation serves as a rite of passage into the scientific community. Middle school biology dissection socializes young students into the scientific community by fostering a new understanding of what "science" encompasses and validates. However, it may be harmful to continue teaching dissection as it is now taught. Our findings suggest that the activity risks imparting to students a callous attitude toward animals, nature, and the natural world, and it may dissuade some students, especially girls, from pursuing any type of science.

FOOD FOR THOUGHT? SOME REFLECTIONS ON THE IMPACT OF INTENSIVE LIVESTOCK PRODUCTION

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The twentieth century has borne witness to the most radical and rapid transformation of livestock production methods in agricultural history. During the post-war period the traditional face of agriculture changed almost irrevocably as new systems of animal management were developed allowing large numbers of animals to be kept and maintained with the minimum of labour (costs). Rapid population growth, a reduction in manpower in rural areas, technological and pharmaceutical advancement, the development of the animal feed industry and governmental and corporate subsidy have all contributed to the intensification of livestock production within western society. But most importantly, it is the ever-increasing consumer demand for a constant supply of affordable animal produce of a standard quality that seems to have rendered the intensive farming of animals a virtual necessity in the modern age.

Throughout the past few decades, production and breeding methods have become increasingly extreme as livestock producers have sought to increase milk yields, egg and meat production and profit by all possible means. The repercussions of intensive farming methods for animal welfare have been well-documented and the modern livestock industry consequently vilified for its cruelty and inhumanity. However, it is becoming increasingly evident that societal concern for the practices of intensive livestock production should extend beyond the issues of animal welfare and ethics. This paper will therefore consider some of the broader implications of the increased exploitation of food-producing animals for human society by examining the impact of intensive livestock production upon public health. Moreover, it will reflect upon the question of whether society's increasing desire for a cheap and reliable supply of animal produce and the production methods deemed necessary to satiate it are now beginning to backfire upon us.

In this respect, it will be argued that the current methods of intensive livestock production do not only threaten the 'integrity' of animals but also their and our own physical - and economic - health. To illustrate this, two

recent controversies concerning livestock production practices and public health will be discussed: firstly, the emergence of bovine spongiform encephalopathy (BSE) and the use of animal-derived feed supplements; and secondly, the widespread use of growth-promoting antibiotics in livestock feed and the claim that this practice may possibly encourage the development of antibiotic-resistant bacteria which could threaten human health.

CULTURAL EFFECTS OF THE INTRODUCTION TO JAPAN OF FLY-FISHING

Erick L. LAURENT, Ken ONO (Gifu Keizai University, Ogaki, Japan)

In today's Japan we can witness a "fly-fishing boom", with space given to videos, books, magazines, and television programs devoted to the subject. This paper analyzes the ways in which the introduction from the Occident of fly-fishing, and its expansion from the early 1970's, has played a part in changing traditional Japanese perspectives on fish as game and food, and in changing Japanese people's interactions with animals and nature in general.

The methods take two forms: analyze of the content of several magazines and videos on fly-fishing; and participant observation and interviews in the field. The sites for fieldwork are Gifu city and Takayama city, both in Gifu prefecture (central Japan), which is famous for its rivers, and an area where one can find traditional fishing methods such as tenkara and tomozuri being used alongside fly-fishing. 30 fishermen served as informants, as well as the director of the Nagaragawa fishing cooperative.

Two main points emerge. The first is that, in contrast to the treatment of fish caught with traditional methods, which are nearly always eaten, with fly-fishing have come the concept and practice of "catch and release" (sometimes abbreviated to "C&R", both terms adopted phonetically without a gloss, like most of the vocabulary linked to fly-fishing). This connects to the idea of fishing as a sport or pastime in itself (hence something that could also be of interest to women), and to a conception of fish as something other than mere food. The targets of fly-fishing are species of fish not considered delicacies, as opposed to species taken with traditional methods. Secondly, fly-fishing emphasizes the importance of observing the environment both before and during fishing. This is often stressed in magazines and by *fly-fishers* themselves.

While the environment was unconsciously either internalized or ignored before, with fly-fishing one must learn the features of several biotopes, choosing or making flies to imitate the corresponding species of insects,

which will lure corresponding species of fish. Now the environment has to be objectified and put into a concrete form.

As often seen in poetry as well as in everyday life in Japan, a particular vision of nature and sense of season will provide an indispensable key to cultural meaning.

With the introduction of a new technique of fishing, this complex traditional relationship between human and certain species of animals has been disrupted. We see a similar disruption with the recent movement to protect fireflies. In both cases, one consequence is the loss of Japanese cultural characteristics in the way of dealing with animals.

SEMINAR

NOT A WOLF, NOT A TIGER, NOT A FURRY HUMANOID: DOMESTIC ANIMAL BEHAVIOR AS IT MAY AFFECT THE TREATMENT OF MEDICAL AND BEHAVIORAL PROBLEMS, PET PLACEMENT, AND THE THERAPEUTIC USE OF DOGS AND CATS

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Introduction:

Many times owner noncompliance in the treatment of medical and behavior problems, and the mismatching of humans and animals by shelter workers or therapists may be traced to misconceptions about what constitutes normal domestic canine and feline behavior.

- I. Not a Wolf: A view of dogs as wolves in poodle suits may profoundly effect how humans relate to domestic canines.
 - A. Lorenz's "male utopian vision" of dominance and submission.
 - B. The kinder/gentler backlash
 - C. The inverse relationship between canine aggression and human leadership
 - D. The mark(s) of a true leader
- II. Not a Tiger: The doggedly persistent view of domestic cats as social animals probably undermines the health and behavior of more cats than any other factor.
 - A. The difference between solitary and antisocial
 - B. The specific behaviors that make cats unique from all other domestic animals
 - C. The feline need for personal space
 - D. The multiple cat dilemma

Conclusion:

Animal lovers who lack knowledge of canine and feline behavior often view these animals anthropomorphically by default, claiming that doing so "elevates" both them and the animals to a higher plane. Nothing could be further from the truth, however, because such an approach denies these animals their unique identities, as well a life that meets their own needs in addition to any human ones.

PLENARY SESSION

Animals As Symbols: The Convergence Of Nature And Culture

ANIMALS AS SYMBOLS: THE CONVERGENCE OF NATURE AND CULTURE

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The human propensity for metaphoric communication frequently finds fulfillment through reference to the animal kingdom, for few other realms provide such vivid and potent vehicles of expression. Calling attention to the preeminent role of animals in human cognition, the famous dictum of Claude Levi-Strauss that animals are good to think as well as good to eat holds true not only for preindustrial cultures but also for modern Western societies. Whenever a human being confronts a living creature, whether in actuality or by reflection, the real life animal is accompanied by an inseparable image of that animal's essence that is made up of, or influenced by, preexisting individual or societal perceptions. Thus nature, as represented by the actual biological and behavioral traits of a particular animal, becomes transformed into a cultural construct that may or not reflect the empirical reality concerning that animal but generally involves much embellishment. A new entity is created that originates from the characteristics of a certain animal but incorporates the elaborations of the nature-to-culture transition.

Studying the biology and ethology of a species is only the first step and is not sufficient in itself to ensure the animal's well-being and continued survival. To understand human-animal interactions, one must also learn how animals are symbolized because that process has a vital impact on societal attitudes toward and treatment of various species. The particular symbolism attributed to various animals often determines whether people will cherish and protect certain species or devalue and/or destroy them.

SCIENTIFIC SESSION II

Human-Animal Interactions

CHANGING TRADITIONS OF MAHOUTS WITH ASIAN ELEPHANTS

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In the 1970s the ancient Hindu practice in India of capturing wild Asian elephants to domesticate them for work was modified, but some elements of the traditions of domestication, care, and training were not eliminated. Until the establishment of India's democratic state of Karnataka in 1973, the maharajah's elephants participated in hunting, the army, and royal festival processions. Thereupon, the government assumed ownership of the elephants. The practice of corralling wild elephants in large keddah operations as a method of acquiring them was terminated. Hindu and Muslim mahouts who had resided with palace staff were relocated to national forests with the elephants. The mahouts became employees of the forest department. Legislation was passed to protect forests and wildlife and establish national parks, even to the exclusion of resident honey-gathering tribes (locally referred to as tribals). Some jobs, including mahouts, became available for tribals.

This study assessed the stability of family traditions among Hindu, Muslim, and tribal mahouts. Mahouts (elephant drivers) living within Nagarahole National Park were interviewed with the assistance of a local translator during April 1996. Eleven mahouts were interviewed at a logging camp, and another five mahouts were interviewed at a riding camp of female elephants. In addition, two tribal boys who assisted with elephants were interviewed in each location. The mahouts interviewed included three Hindus, three Muslims, and ten tribals. The Hindus had been introduced to elephants by a mahout father or grandfather, or both; each had a son who expected to be a mahout. The Muslims mentioned either a father/grandfather, an uncle, or a co-brother (wife's sister's husband) who was also a mahout. Only one tribal mahout was not introduced by either a father or uncle. Only he and one other tribal reported that they would not allow their sons to become mahouts. Other mahouts appeared to favor their sons becoming mahouts, although availability of jobs appeared to be a concern. Mahouts provided accounts of nine mahouts in their village who had been seriously injured by elephants. One mahout had been killed by a village elephant and another by a wild

elephant. Two villagers had been killed by one of the logging camp elephants. Unexpectedly, no examples of injuries to children were mentioned, even though young boys assume major responsibilities for managing the female elephants.

Among these mahouts in India, family tradition continues to play a major role in the decision to work with elephants. Within 25 years, the tribal people have acquired traditions and practices of training and managing elephants similar to the historic Hindu traditions and practices. This contrasts, surprisingly, to an earlier study which found that elephant drivers in Nepal no longer view working with elephants as a lifelong job or a family tradition. Effective management of domesticated Asian elephants may be dictated by their behavior and their natural appeal to humans.

PET OWNERSHIP ACROSS GENERATIONS

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Although increasing urbanization over the past century has reduced experiences with farm animals but increased concern for domestic pets, the average family's beliefs and practices still strongly influence individual feelings and beliefs about pet ownership. To evaluate attitudes toward domestic animals and pet ownership that grandparents and parents have passed on to their children, 100 male and 100 female adults with a mean age of 58.8 yr. (SD=13.3) were individually interviewed and classified as either Never- owned pets, Always-owned pets, Owned-in-childhood-only, or Owned-in-adulthood- only. Subjects were asked about their own past and present feelings about pets and pet ownership, and about the ownership and behavior toward pets of their grandparents and parents.

Significantly more grandparents ($\chi^2=3.93$, $p < .05$) and parents ($\chi^2=4.63$, $p < .05$) owned pets in the Always-owned and Childhood-only groups than in the Adulthood-only and Never-owned groups. However, 60% of the Childhood-only subjects, but only 5% of all the other subjects reported having had unpleasant experiences with pets ($\chi^2=7.86$, $p < .01$). In the Always-owned group, 76% of the subjects own pets, and 64% of their parents, and 62% of their grandparents had owned pets, which suggests transmission of positive attitudes across generations. Although none of the Never-owned subjects own pets, 3% of their parents and 5% of their grandparents had owned pets, which suggests transmission of negative attitudes across generations. And though none of the Childhood-only subjects own pets, 61% of their parents and 50% of their grandparents had owned pets. However, as noted earlier, having had unpleasant, negative experiences with pets during childhood, the subjects chose not to own pets. Although 76% of the Adulthood-only subjects own pets, 4% of their parents and 40% of their grandparents had owned pets, thus supporting the idea that family attitudes and experiences with animals are both important in affecting current adult ownership.

The data suggests that in a changing culture, positive or negative experiences with pets and family histories of ownership are two extremely important variables in present attitudes toward animals and pet ownership.

PET CARE PRACTICES AND ATTITUDES TO STRAY DOGS AND CATS ON GUAM

*Rebecca Diaz and *R. Lee Zasloff, and Lynette A. Hart, Center for Animals in Society, School of Veterinary Medicine, University of California, Davis, CA 95616*

The island of Guam has a population of 140,000 representing an unusual blend of cultures. Caucasians, Chamorros (natives of Guam), Filipinos, and Micronesian Islanders comprise 85% of the population. According to the Guam Department of Public Health, approximately 30,000 stray dogs and an equal number of stray cats also populate the island. To learn about the attitudes and pet-keeping practices that might be related to the island's problem of free-roaming animals, individuals were interviewed at major retail stores and other public locations. A structured questionnaire was developed to obtain data about practices concerning owned dogs and cats and interactions with unowned animals.

Among the 315 adults interviewed during June, July, and August, 1996, there were 38% Chamorros, 17% Filipinos, 14% Micronesian Islanders, and 23% Caucasians. Overall, 48.1% of respondents owned pets with only 26% of Micronesian Islanders reporting owned pets. More than half of all dogs were kept exclusively outdoors, 30% were free to roam, and 46.2% were tied with a rope or chain with a mean length of 10 feet. Keeping the dog solely for protection was reported by 55.5% of Micronesian Islanders, 46% of Filipinos, and 30% of Chamorros but by no Caucasians. Regarding cats, 60% of Caucasians kept their cats indoors only while among both Chamorros and Micronesian Islanders indoor/outdoor status differed based on whether the cat was purebred or mixed breed. Among all cat owners, 87% kept the cat for companionship and 13% kept the cat for snake and rodent management. Overall, only 18.2% of interviewees spayed or neutered their dogs compared with 68.5% who sterilized their cats. Altogether, 80.6% of respondents reported having free-roaming animals, both owned and unowned, around their homes or workplaces. The numbers of loose owned dogs and cats were 466 and 254, respectively, while 645 unowned dogs and 684 unowned cats were reported. Although many believed that the stray animals create health and traffic hazards and that the dogs especially are a danger to children, 40 to 70% reported that they feed the animals.

These results strongly indicate the need for concerted public education efforts to improve both the welfare of these animals and the health and safety of the people of Guam.

INTERACTIONS WITH ANIMALS AS PREDICTORS OF EMPATHY IN CHILDREN

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The relationship between cruelty to animals and antisocial behavior has been well established. The DSM-IV lists cruelty to animals as one criterion for a diagnosis of Conduct Disorder. If harming animals is a sign of a personality disorder then positive social interactions with animals may indicate the presence of prosocial activities such as empathy and social skills in children. We hypothesized that animal-related predictors of empathy and social skills could be found. To test this hypothesis, we studied children in five preschools in urban Philadelphia and its suburbs. Of the 54 children included in the study 32 were male and 22 were female. All were between 27 and 60 months old with the majority between 36 and 60 months old.

In the first phase of the procedure, a videotape of young animals in their natural settings was shown to the children. During phase 2, each child was individually introduced to us and some background information was obtained. Then each child was asked if he or she wanted to see a live rabbit. If a child wanted to see the rabbit, we began phase 3, which was a period of interaction with the rabbit, the length of which was determined by the child. The length of time each child spent with the rabbit, how long he or she looked at it, and how frequently he or she petted the rabbit was recorded. These data were used to calculate a focus score and a petting score.

If a child did not want to see the rabbit or had completed phase 3, the final phase, administration of the Young Children's Empathy Measure was begun. This instrument measures cognitive and affective empathy for other children and cognitive and affective empathy for a pet dog. Our other measure, the Social Skills Inventory, which measures social skills and problem behavior, was completed by each child's primary teacher.

Results showed that stated desire to see the rabbit was a predictor of all measured types of empathy in the children. Out of the 40 children who completed the empathy measure, eight did not wish to see the rabbit. These children scored lower on the empathy measure than those who wanted to see the rabbit. Point-biserial correlations were computed for all four measured

types of empathy and desire to see the rabbit. All were significant at the .05 level. The results also showed that the focus score, obtained during interaction with the rabbit (computed as the percentage of the total time a child, in the presence of the rabbit, looked directly at it) was a significant predictor of cognitive empathy for the dog ($r = .41$, $p < .05$) and affective empathy for the dog ($r = .39$, $p < .05$) but not for cognitive or affective empathy toward children.

These results suggest that children's desire to interact with animals may be a good predictor of their empathy for animals and other children. The amount of time they focus on an animal while petting it may also be positively related to their empathy for the animal. Results of this exploratory study indicate that further research exploring the relationship between positive interactions of children with animals and empathy may be fruitful.

A STUDY OF THE EPIDEMIOLOGY OF ANIMAL ABUSE IN MASSACHUSETTS

Ms. Lori Donley and Dr. Gary Patronek, Tufts Center for Animals and Public Policy, Tufts University School of Veterinary Medicine, 200 Westboro Rd, N. Grafton, Grafton, MA 01536.

This study analyzed 200 reports of animal abuse or neglect randomly selected from the files of 1996 complaints filed with the Massachusetts SPCA Law Enforcement Office. In 1996, there were a total of 4,942 complaints or 2.2 complaints per 1,000 households in Massachusetts. The majority of the cases involved dogs (69.5%) and another 21.5% involved cats. Most of the complaints involved either husbandry-related neglect (58%) medical neglect (26.5%). Twenty-two complaints (11%) involved deliberate abuse, but only 5 of these could be substantiated to some extent, and 17 complaints involved abandonment, of which 7 were clearly intentional. Thus, 12 of 200 complaints could be demonstrated to involve some intentional human act.

INTERNATIONAL ACTIVITIES OF IAHAIO IN 1997 AND 1998

Dennis C. Turner, President of IAHAIO, Renton, WA, USA and Director, Institute for applied Ethology and Animal Psychology, 8816 Hirzel, Switzerland

The International Association of Human-Animal Interaction Organizations, IAHAIO, of which ISAZ is an associate member, is conducting and planning various activities over the next two years which will interest many ISAZ members and be explained in this presentation:

The projects committee under vice president Anne Docherty of SCAS is currently collecting information from the member organizations on guidelines and codes of practice and ethics for animal-assisted activities and therapy with the goal of developing a set of international standards for approval at the 1998 international conference. Member organizations are working to implement the five resolutions of the IAHAIO Geneva Declaration in their respective countries. IAHAIO is currently developing a joint program with WHO to promote *responsible* pet ownership as one means of curbing the feral dog and cat problem—especially in emerging nations. Both the IAHAIO Distinguished Scholar Award and the Pets in Cities Award are expected to be presented at the 1998 conference with some modifications in nomination procedures.

The 8th international conference on human-animal interactions will be held September 10 - 12, 1998, in Prague, Czech Republic. The theme of the conference: The Changing Roles of Animals in Society. Plenary talks will stress change in our relationships with animals and the roles they play in our lives looking at the past, the present and the future—especially barriers and challenges to future change. Contributed papers (oral and poster) are expected to examine historical, cultural, cross-cultural, demographic, public health, veterinary, therapeutic, psychological, sociological and ethological aspects of our relationships with animals. Honorary conference chairman is Zdenek Matejcek of AOVZ; program chairman is Dennis C. Turner with co-chairs James Serpell (Research) and Nienke Endenburg (Applications/Programs). Tristan Follin of AFIRAC is chairman of the organizing committee. The Call for Papers and further information are available from: AFIRAC, 7 rue du Pasteur Wagner, F-75011 Paris, France.