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To Whom It May Concern:

My name is Margaret Whittaker and because of my extensive experience working with, assessing, and caring for captive animals, especially elephants, I've been asked to view videos and provide a report summarizing the training and handling of the elephants at the Hannover Zoo in Germany. I have reviewed 19 videos that show various aspects of the elephants' enclosure spaces, training methodologies with calves and adult females, and some aspects of the animals' daily care including feeding, training, public presentations, and bathing, which are described below. Please see below for my experiences and how I evaluate welfare and assess the situation as seen through these videos.

I'm an animal behavior consultant and animal manager with over 30 years' experience caring for wild animals in captivity. I have worked with over 170 elephants as a zookeeper, supervisor, elephant manager, behavioral consultant, and director at zoos across the globe including zoos in Asia, SE Asia, India, Mexico, South America, Europe, and, Association of Zoos and Aquariums (AZA) accredited zoos in North America, Global Federation of Animal Sanctuaries (GFAS) accredited sanctuaries, and have taught workshops and provide consultation for elephant training, care, husbandry, and management all over the world. The methods I teach and use rely on positive reinforcement training (PRT) and environmental enrichment (EE) to create environments that promote psychological and physical wellness. I also work with architects and contractors to design and modify elephant facilities so they will better facilitate and promote natural behavior and provide for the animals' comprehensive care and welfare. I have been directly involved training elephants to transition from traditional or free contact (FC) management to the more progressive and humane way of caring for elephants known as protected contact (PC); have developed PC husbandry and care protocols and trained staff, have managed diverse herds of Asian and African elephants in breeding and non-breeding groups, have been involved with births and calf management, geriatric (including end of life) care and management, medical management, care, and treatment of acutely sick, chronically ill, and injured elephants of all ages, and have been involved in over 20 transports of elephants, including by plane and truck (in crates and specialized elephant transport trailers), from one location to another (both in the USA and internationally) including Africans, Asians, bulls and cows, some of which were infirmed, arthritic or otherwise compromised, and I've

managed social groups and conducted introductions as individuals are introduced to each other to form new or larger groups. I have inspected and assessed numerous elephants for various municipal animal control and inspection agencies, provided reports on elephant care, quality of life and welfare, and provided expert testimonial on all of the above topics both in oral testimony and written letters.

Whenever assessing an animal's captive condition, there are a number of factors that contribute to an individual animal's overall quality of life, state of wellness, well-being or welfare, and assessing these requires a broad approach. However, the scientific community generally recognizes measureable parameters as indicators of good or poor welfare which cumulatively constitute quality of life. As an animal behaviorist, I rely on the animal's behavior including: 1) presence or absence of abnormal behaviors; 2) the opportunity to express and the actual expression/performance of a full range of species-appropriate behaviors (e.g. locomotion, socialization, foraging and feeding); 3) interactions with staff; 4) behavioral flexibility and confidence; and 5) the opportunity to exert a measure of control over the environment resulting from the animal's behavioral choices. Physical aspects of the environment, and how the individual animal interacts with them, must be considered as well; abnormal behavioral outcomes and behavioral pathologies result from an inappropriate animal-environment interaction. Therefore, the environment must provide for the physical needs of the animals, including: an appropriate climate, an enclosure that offers the space and complexity to allow for physical fitness, muscular development, and cardiovascular health. Additionally, the physical environment must provide for the animal's psychological health and security by offering safe zones, the appropriate social atmosphere, and be dynamic and challenging to maintain mental acuity and problem solving.

I reviewed the 19 videos of the Hannover Zoo elephants, totaling nearly 6 hours of time, representing the end of September 2016 through early October 2016. The videos include footage of various aspects of the elephant's daily lives, including feeding, cleaning, bathing, enclosure set up, training sessions (with particular emphasis on the calves), and clearly illustrate the relationship between the keepers and the elephants.

The elephants at the Hannover Zoo are managed through traditional methods, known as Free Contact (FC) elephant management. Free contact involves the keepers and elephants sharing the same unrestricted space; elephant positioning and behavior are modified through the use of negative reinforcement, punishment, and dominance. The tool used in FC is called an ankus, bullhook, hook or ankush; the ankus is a rod or stick, typically with 2 metal points, one on the tip and the other on the curved pointed hook tip (see image).



It is important to understand why this small tool can be effective on a large animal. The ankus is meaningless to a naïve elephant, therefore the elephant is first given the experience of the pain the sharp tips can deliver, then taught to fear this pain and discomfort, and therefore learn to move away from it. Establishing

the guide as an aversive stimulus is done by repeatedly prodding or poking the elephant with it, sometimes lacerating the skin; this is often done on sensitive parts of the elephant's body such as the mouth, ears, chin, cuticles or anus. The elephant learns to associate the ankus, or the site of it with pain and therefore fears the threat of the pain it can deliver.

Many elephant trainers will claim that they rarely 'use' the ankus, meaning they rarely touch the elephant with the ankus, and others will claim that even if they do touch them, the point is dull and therefore doesn't hurt the elephant's skin. Despite these claims of how little it's used, they always carry it. This can easily be seen in the videos; the Hannover keepers have it in the 'ready position' most of the time they are in the yards with the elephants. It's critical to understand that carrying it does equal using it! Because it has been established as something which can deliver pain and discomfort, it is to be feared and this fear is deeply engrained in the elephant's memory. Elephants are known for their superb memories (e.g. females remember the location of watering holes they'd not visited in decades; and individuals recognize others they've not seen in 30 years), and therefore it's reasonable that they possess a keen awareness and recollection of what that ankus represents, and it's this strong memory that allows keepers to "appear to use it less". A prime example of this is with the Hannover elephants – The adult females are hooked less often than the youngsters, but clearly both are fearful and responsive to the hook's presence and position. The fact that it appears to be 'used less often' indicates that it was firmly established such that the memory of the pain and discomfort remains at the forefront of the elephant's mind to the degree that even the sight of it prompts compliance and affords trainers control over the elephants. The elephants see it hanging on the trainer's belt, they see the trainer subtly reach for it, and they see when they are threatened with it as the trainer reaches it towards them. The fact that the trainers don't touch or cut the elephant's skin, yet the elephants continue to respond to this tool is a clear indicator of how harshly it was established. Fear is a negative experience that has deep rooted and resilient control over one's behavior. Forming the association of fear (through pain) with the ankus is a necessary and unavoidable step to teach the elephant the proper response to this tool. Without this step, the elephant would lack the motivation (fear) to respond to this otherwise meaningless tool. In addition to the ankus, the keepers at the Hannover Zoo also use whips as a negative reinforcer to move elephants to a particular location (e.g. pool), or maintain a position or distance from a location (e.g. pool, feeder balls). The whips are used by popping the whip towards the elephants; it isn't clear if contact is made with the whip in the videos, but the elephants' behavior strongly suggests they have been hit in the past and have learned to keep a distance from the whip tip as it's popped.

Although the keepers at the Hannover Zoo do use some food rewards with the elephants, this is not the same and does not equate to positive reinforcement training. Even though food rewards are occasionally used, the foundation of the elephants' learning process isn't positive-reinforcement or reward-based. This is clearly evident in the videos, which I'll describe throughout this report.

In addition to the use of negative reinforcement as a method to modify and train behaviors, positive punishment and social dominance are also used to provide further and greater control over the elephants. The ankus and whip are used to mete out positive punishment; elephants are struck or threatened with these tools when they've done something wrong, not reacted to a keeper's cue, or not performed a behavior to criteria (19<sup>th</sup> video 1:31). Social dominance is established and maintained via aversive training methodologies and the associated intimidation when the ankus and whip are used. Additionally, in FC elephant management, Elephants are kept under stringent control by the trainer with absolute compliance required. If an elephant steps out of line, even a little bit, that elephant will be physically punished. The implications for FC management to diminish animal welfare are supported by current scientific literature with innumerable references illustrating the detrimental effects of negative reinforcement and physical punishment training practices with many species, including elephants. Elephants may appear cooperative and compliant, but subjects of fear-based training can reach a state called "learned helplessness" wherein they cease attempting to affect any change to a situation. In this state, an individual's welfare is severely compromised and they are stripped of autonomy.

When I watch the videos, several aspects of the elephants' lives caused deep concern, including: 1) the training methodologies in use at the zoo, 2) the elephants' lack of control over their daily lives, the resultant loss of autonomy, and diminished animal welfare, 3) the types of behaviors the elephants are taught to do for public presentations, and 4) the overwhelming strict control the keepers maintain at all times with the elephants. Throughout this report, videos will be referenced to highlight concerns, but do not represent the totality of times each particular concern occurs. Videos are referenced by order seen (1-19) and the time point on the video is designated using the format (XX:XX) for easier reference.

### Training Methodologies

The Hannover Zoo uses FC management (described above), including use the ankus and whip as tools of negative reinforcement; these tools are used to teach, cue and control behaviors, and in one video (3<sup>rd</sup> video, 8:00), the keeper pulls an object from his pocket (key?) and pokes the elephant to drive him back, demonstrating that once the aversive stimulus is established through pain and discomfort, psychological control and dominance can be maintained by almost any object, even one as seemingly harmless as a key. The above described implications and consequences associated with diminished wellness and these techniques can be seen in the videos, and particularly with regard to the fear the animals experience during training sessions or even when

the keepers enter the exhibit to feed or clean (5<sup>th</sup> video, 6:00, 6:39; 2<sup>nd</sup> video, 3:02, 3:46, 7:28). Elephants exhibit a constellation of behaviors when they are threatened or fearful which may include: curling trunk under, raising the chin, raised tail, wide eyes, rapid ear flapping or pinned ears held high. This is illustrated by the animals backing and running away from the keepers in an unnatural manner. Their movements are exaggerated, faster, and more erratic than would normally be seen, and are associated with fearful behaviors (e.g. 2<sup>nd</sup> video, 12:10; 4<sup>th</sup> video, 4:50; 6<sup>th</sup> video, 3:29; 12<sup>th</sup> video, 3:07; 16<sup>th</sup> video, 12:06 and 13:30, 18<sup>th</sup> video, 1:20). In nearly all the videos, it can be seen that each time a trainer interacts with an elephant, the elephant is tense, on high alert, and ready to react as if escaping a threat (4<sup>th</sup> video, 13:34; 12<sup>th</sup> video, 7:30). It is also very apparent that the adult females are on alert; they follow the calves during training, stand by the door separating them (4<sup>th</sup> video, 00:05), or when the calf is worked in the main exhibit, the females stay back but orient towards the calf with their ears out (6<sup>th</sup> video, 13:40). On the 4<sup>th</sup> video, minute 25:00-25:30, the group's behavior is very interesting in response to the keepers. The staff enter the exhibit, focusing on one calf, with one keeper chasing the calf towards another trainer; the females surround them as if responding to a threat. The keeper then walks the calf from the female group, and as he turns his back to the females, one throws her trunk towards him, which is an aggressive behavior. The females are responding with subtle behaviors that indicate they feel threatened, but no doubt are too fearful to react to protect the calf due to fear of consequences. The fear and abnormal movement patterns the elephants exhibit, and keepers' use of the ankus and whip are apparent throughout the videos.

The physical scars of the training techniques are apparent on the adult females and the calves – the small raised bumps and scratches on their skin most likely result from the use of the ankus (1<sup>st</sup> video, 6:52; 2<sup>nd</sup> video, 3:20). The psychological scars of this type of training are much harder to identify but can be seen as the animals duck their heads, squint their eyes, and move quickly away from the staff in anticipation of the punishing effects of the whip and ankus (1<sup>st</sup> video, 2:10; 2<sup>nd</sup> video, 1:58; 6<sup>th</sup> video, 00:05; 10<sup>th</sup> video, 12:50); the level of fear and avoidance is highly conspicuous each time the staff chase the elephants into the pool (1<sup>st</sup> video, 1:35; 12<sup>th</sup> video, 12:15; 16<sup>th</sup> video :03, 13:01), and can be seen in most videos.

The trainers' approach to working with the elephants appears aggressive, controlling, excessively redundant, routine and monotonous, particularly with the calves, who are in the process of learning some behaviors shown in the videos. Trainers use the ankus freely and frequently, and often 'hook' the elephants quite hard, causing pain (1<sup>st</sup> video, 7:29; 4<sup>th</sup> video, 4:48; 5<sup>th</sup> video, 14:31, 1:07:27; 11<sup>th</sup> video, 11:50; 12<sup>th</sup> video, 12:30, 12:38, 13:14, 14:32, 20:20); they can be seen hooking the elephants on sensitive parts of their bodies such as in the ear, on the thin skin around the ear, on the trunk tip, and under the chin (4<sup>th</sup> video, 17:00; 5<sup>th</sup> video, 23:55; 9<sup>th</sup> video, 00:07; 12<sup>th</sup> video, 12:30 and 13:14; 13<sup>th</sup> video, 9:28; 17<sup>th</sup> video, 00:48). This pain, or the threat of the pain, and associated fear are evident when watching the calves' react to the presentation of the ankus, when the keepers move the ankus, when the ankus is raised towards the elephant, or when the keepers move towards the calves (4<sup>th</sup> video, 17:13; 9<sup>th</sup> video,

8:15; 10<sup>th</sup> video, 12:50). The calves are punished by hitting with the ankus; in one video, (4<sup>th</sup> video, 16:00) the trainer hits the calf's sensitive trunk tip multiple times. While the hits do not appear to be very hard, the elephant's trunk is an exquisitely sensitive and highly specialized organ with the prehensile finger or tip being the most sensitive and tactile part of the trunk; the trainer focuses on part of the elephant's trunk. Due to sensitivity of the trunk, hitting it hard isn't needed for the elephant to respond. This highly complex and sensitive organ has over 150,000 muscles, numerous tactile and Pacinian (detect pressure and vibration) corpuscles, tactile hairs implanted in the dermis, nervomuscular endorgans known only in elephants, and the three types of nerve endings found in the finger of the trunk are the most sensitive. Another method of control and punishment includes having animal repeat a behavior many times (10<sup>th</sup> video calf does hind leg stand and sit up at least 15 times during one session), and can involve excessive use of the ankus (1<sup>st</sup> video, 7:29; 5<sup>th</sup> video, 24:06; 10<sup>th</sup> video, 8:16; 19<sup>th</sup> video, 1:30). This training approach is disturbing to watch with any animal, but is especially offensive when watching baby elephants manipulated by the techniques of negative reinforcement, dominance and punishment as they are subjected to painful and frightening stimuli (ankus and whip). In the wild, these babies would be nurtured by their mothers, aunts, siblings and cousins as they learn 'to be an elephant'.

### Loss of Autonomy

In addition to the physical and psychological scarring caused to the animals, the videos reveal little to no time when the elephants are afforded the opportunity for normal, uninterrupted elephant behavior, including socializing, natural foraging and feeding activity, rest, and locomotion. When viewing each of the videos, I was immediately cognizant of the high level of control the trainers exert each time they are around the elephants. They always have the ankus ready to use (1<sup>st</sup> video, 7:52; 16<sup>th</sup> video, 10:35), and therefore it remains an ever-present and inescapable threat. When viewing any of the videos, it's clearly apparent that the elephants are on alert to the staff's movements and activity. The elephants appear 'well-behaved' and attentive to their trainers, but the reality is that they are fearful and lack confidence and autonomy, which are crucial to any animal's welfare. The females feel compelled to maintain lengthy periods of vigilance, (e.g. mothers watching young or an elephant in training watching the ankus) and appear agitated and unable to relax (females pacing and observing calves in training Video 2, 7:30, 8:40; video 6, 13:46, 20:03; video 10, 3:40, 14:21) when keepers are around and during training sessions. Fear, lack of confidence, and an inability to relax has resulted in a disruption to normal, species-appropriate elephant behavior, and lead to hyper-vigilance and other abnormal behavioral patterns because the animals are unable to affect changes (cope) with the situation (due to the threat of punishment). Therefore, they have, for all practical purposes, given up trying, resulting in a state of learned helplessness.

### Types of Behaviors Trained

Modern, progressive facilities keeping elephants in captivity do so for educational, conservation, retirement/rescue, and research purposes. These facilities are committed to providing optimal welfare by ensuring the highest level of veterinary and husbandry care through the careful application of PC management. Elephants are trained to voluntarily participate in all aspects of their care and husbandry, including routine practices such as movement among enclosures, foot care and treatments, skin care, and non-routine and invasive veterinary procedures such as blood sampling, administration of oral and rectal medications, reproductive assessments, semen collection, and the treatment of conditions such as osteoarthritis, foot abscess, and pressure sores. Elephants can also be trained for presentations to the public; these presentations typically feature the elephants demonstrating behaviors or activities that highlight their natural abilities and attributes through respectful messaging and by selecting behaviors for the elephants to do that are not circus-style tricks.

The Hannover Zoo appears to focus elephant training primarily on circus-style performances and logging type work as illustrated by behaviors such as hind leg stands, ground and tub/log sits, 360 turns, crossing back and front legs, excessively high leg lifts, head stands, balance beam work (2<sup>nd</sup> video, 8:33, 14:50, 15:02, 15:27, 24:11; 4<sup>th</sup> video, 27:51, 28:25, 5<sup>th</sup> video, 14:31; 6<sup>th</sup> video 9:12-9:43; 10<sup>th</sup> video, 10:08); logging behaviors include carry, push and pull logs with head, trunk and feet (6<sup>th</sup> video 6:23-9:01; 11<sup>th</sup> video, 8:32) , and additionally, the elephants wear neck chains and ropes much as they would in range country log camps (11<sup>th</sup> video, 00:45, 8:09). These behaviors do not present elephants in a respectful manner, do not educate the public about the plight and conservation needs of wild elephants, do not provide information about wild elephant behavioral biology and natural history, but instead these promote and perpetuate the notion that elephants are for entertainment, and in the servitude of humans. Additionally, some of these behaviors cause physical damage to the elephants; hind leg stands put unnatural and harmful stress, pressure, and strain on areas of the elephant's body not designed to repeatedly support this activity, and have been associated with numerous physical maladies including: herniation below the tail resulting in prolapse of the bladder, pelvic floor muscle collapse or separation resulting in the inability to carry a pregnancy to term. In the 10<sup>th</sup> video, 10:08, one of the calves is made to repeat the hind leg stand and sit up behaviors more than 15 times within less than 3 minutes' time. The elephant does not benefit, and in fact is harmed when forced to perform these behaviors.

In the videos, the elephants were asked to do some behaviors needed for husbandry and veterinary care but no actual husbandry or veterinary care was observed. The observed behaviors that facilitate care include lateral and sternal recumbency (see additional comments), lifting the ear (see additional comments), lifting the feet (see additional comments). Elephants should be trained for behaviors that facilitate husbandry and veterinary care which typically include: lifting all 4 feet, presentation of sides, front/head and posterior, open mouth, present tusks/tushes, ears, and allow tactile examination of these body parts.

Although behaviors such as sternal and lateral recumbency, or 'stretch' and 'down', can be helpful when examining the elephant's back or belly, these behaviors should be used with careful consideration. The first reason for caution is due to concern of the wear and possible damage to the elephant's toenails when getting into or up from either position. As the elephant moves through these positions, the back nails may have abnormal pressure put on them (especially when moving from standing directly to a 'stretch' position – see 6<sup>th</sup> video, 9:04), or be worn thin when rocking the legs to get up from a 'down'. These problems are exacerbated when the elephant performs these behaviors on an abrasive surface. The center toenails receive the most stress during the 'stretch' behavior, and the lateral nails can become over worn during the 'down' behavior. The second cause for concern regarding these behaviors relates to the implications for psychological stress. Elephants are highly vulnerable when recumbent. When we train these behaviors in PC, elephants must feel confident and secure in order to willingly and voluntarily assume these positions. In some FC programs, elephants will be put in either of these positions for procedures such as blood collection and injections because these positions enhance safety and make it easier to control the elephant's behavior (i.e. it's hard for the elephant to grab a person standing behind the head when down, and secondly, takes time for elephant to get up to behave aggressively or run away). These positions are also used (for the same reasons mentioned previously) when an elephant is physically punished; the elephant is put in the 'down' and whipped or hit. A FC trainer knows that when an elephant submits to his commands and will lie down reliably, he has fully established dominance over the elephant. Therefore, caution should be taken to measure the elephant's comfort level and security during these behaviors, assess if the elephant will lie down without cuing from the ankus, and is aptly rewarded for these behaviors. Recognition of the physical challenges and potential risks, and the implications for psychological stress resulting from the repeated performance of lateral and sternal recumbency cannot be dismissed. The Hannover Zoo elephants are asked to repeat these behaviors with considerable frequency, a practice which deserves close examination.

Captive elephants typically require regular foot care which may involve the elephant standing for an extended period of time with a foot lifted and typically resting on a platform or stand. In order for the elephant to comfortably maintain this position while foot care is conducted, the feet shouldn't be lifted so high that the elephant significantly alters his/her normal stance to present the foot. As seen in many of the videos, the elephants at the Hannover Zoo are forced to lift their feet so high that they need to shift their weight and alter their stance considerably – this is not a position conducive to foot care sessions, and therefore cannot be considered 'necessary for husbandry'.

Regarding the ear presentation behavior, commonly used when taking a blood sample, in the videos, the elephants can be seen to lifting their ears when in a 'down' or lateral recumbency position, but the trainers do not practice any other aspects associated with the blood draw/collection behavior, so any real value in asking for the 'ear' is lost when additional steps aren't practiced. In all the videos I watched, I didn't observe any husbandry or veterinary care with the elephants, therefore, it seems a

reasonable assumption based on this information, that the keepers spend little time engaged in these activities.

The overwhelming majority of behaviors the elephants are asked to, or are learning to do appear to be for circus-style or for logging demonstrations. Modern zoos, with progressive values and a mission based in science and animal welfare, typically do not choose to highlight these types of themes and messaging as features for public education and presentation. Modern zoos focus public demonstrations on conservation-based educational messaging, highlight the species natural history and behavioral biology, and appeal to visitors in a manner that engenders empathy and action to preserve the natural world.

### Strict Level of Control

As mentioned previously, I was immediately struck by the extreme level of control the staff exerts over the elephants at all times. Although this high level of control is apparent during all interactions with the elephants, there are some instances that are particularly disturbing from an animal welfare perspective because they truly strip the elephants of choice and control. These include: the way the elephants enter and leave the exhibit, chasing to the pool, feeding routine, 'trunk up' position each time keeper interacts or walks elephant, and use of the neck rope/chain.

The elephants enter and leave the enclosures in a 'tail up' position where they are in single file line with each elephant holding the tail of the one immediately in front. This behavior is used by circuses to move elephants between spaces (to and from the performance, moving from train cars to holding areas, etc.). This position affords little to no freedom since all elephants must move at the speed dictated by the lead trainer controlling the lead elephant, requires close proximity and touch, and is typically done in the same order so elephants are forced to remain in only one position relative to other elephants (7<sup>th</sup> video, 00:08; 9<sup>th</sup> video, 00:08). This antiquated method of moving elephants between spaces strips them of the ability to move freely at their own pace, to move with whom they choose, and ultimately removes a single but important choice the elephants should be allowed to make. In much the same vein, forcing the elephants to go to the pool and to remain in the pool, eliminates biologically-based self or auto-maintenance behaviors. Self-maintenance behaviors for elephants most often involve skin care in the form of bathing, dusting, mudding, scratching on each other, trees, or with a branch. Most elephants will immediately cover their bodies with mud and dirt after a bath, which protects their skin from insects and sun. Even in the absence of insects and intense sun, elephants will continue to engage in these natural behaviors. The level of control associated with the forced bathing routine, and the denial of mudding (no mud hole visible in exhibit), and dusting opportunities immediately following some baths results in elephants not having the opportunity to engage in fundamental and basic natural behaviors.

The feeding routine I observed in the videos is one of the most controlled I've ever seen. It seems the elephants have no opportunity to feely forage (search, acquire, process, and consume) for their food. The bulk of the food appears to be provided in one

location (close to the public viewing) and there are several balls that have small food items in them. When the group of elephants was offered hay or grasses, it was always done with extreme control (i.e. the elephants were not allowed to freely approach and investigate the food, but were forced to wait until released by the keepers). In a number of instances, the elephants were 'tailed up' and paraded around the area where the food was laid out, but not allowed to eat it. They were made to go through a series of behaviors that included circling the area, sitting up or sitting on a log prior to being released to the food. Had this been an 'every once in a while' situation, it might be more acceptable, but when watching the videos, it's easy to see that this is the 'routine' (6<sup>th</sup> video, 3:29; 8<sup>th</sup> video 3:50; 14<sup>th</sup> video, 12:30; 15<sup>th</sup>, 39:45). Of these videos, the 15<sup>th</sup> @ 39:45, is the most disturbing as the elephants are paraded around their food, made to stand directly in front of the food, paraded again, made to sit, and finally released to eat. The public are gathered in front of the elephant exhibit observing this 'show' – One cannot help but wonder what sort of message the public take away from seeing this. Regardless of what the public learn and why the keepers do this, ultimately the elephants lose choice and control surrounding a basic freedom and behavioral need. Equally, if not more disturbing, is a tactic that can only be assumed to reinforce dominance and human control over the elephant – this is seen when one of the calves is separated from the group for a training session. The keeper places food on the ground, but denies the calf access to the food. Instead, he has the elephant work all around the food, then allows access for a few seconds, calls him away as the calf is eating, and uses the ankus with excessive force to get him away from the food (12<sup>th</sup> video, 12:03, 12:20, 14:15).

The elephant's trunk is a uniquely specialized organ with over 150,000 muscles, is highly innervated, and arguably the most recognizable feature of elephant anatomy. Elephants have an exquisite sense of smell and perceive much of their world through olfaction. They rely on their trunks for positive social interactions (e.g. touching, caressing) and for responding to threats (e.g. throw trunk towards, hitting). The position and how they hold the trunk is a critical part of their body language, and the trunk is used to produce sounds for audible communication. The trunk is essential for food acquisition and processing, is used as a vessel to hold and transport water to the mouth, and is used for body maintenance behaviors such as bathing, dusting and mudding. Elephants can be quite protective of their trunks, and based on my experience with many elephants, will voluntarily and willingly allow a person to hold their trunk if there's trust. Of course, in FC management, elephants must allow manipulation of their trunk or face the consequences. In FC training, elephants must submit to the trainer's dominance, and one sign of compliance is when the trainer manipulates the trunk, holds the trunk tip (sometimes occluding the airways as a method of control), or forces the elephant to keep the trunk still. The elephants at the Hannover Zoo appear to have experienced these trunk control elements as can be seen in the videos. The elephants must keep their trunks held up against their foreheads (1<sup>st</sup> video, 00:13, 5:32; 2<sup>nd</sup> video 8:40, 9:38; 4<sup>th</sup> video 22:14, 39:18; 5<sup>th</sup> video 00:01; 6<sup>th</sup> video 8:26; 7<sup>th</sup> video 00:29; 9<sup>th</sup> video 00:36, 1:17, 1:42; 10<sup>th</sup> video 3:07, 19:23; 11<sup>th</sup> video 1:04, 3:20; 12<sup>th</sup> video 4:38; 13<sup>th</sup> video 00:15, 00:44; 14<sup>th</sup> video 12:45, 22:34; 16<sup>th</sup> video 4:25, 6:40; 17<sup>th</sup> video 00:06, 00:20; 18<sup>th</sup> video 00:03, 9:25; 19<sup>th</sup> video 12:36, 19:44). In contrast to the way the elephants

move with their trunks up, see 15<sup>th</sup> video @ 40:58 to see a more relaxed walking pattern even when 'tailed up'.

The use of the neck rope and chain on the elephants is associated with psychological dominance and is used to remind an elephant of the human's authority, position of power, and ability to mete out punishment. When working with mahouts in range countries, I have found that they will often keep these ropes on a "well-behaved" elephant because they help remind the elephant who is the boss and the elephants behave better when wearing the rope. In the zoological setting, there seems to be no reason or excuse for subjecting an elephant to this sort of psychological torment. As evidenced by the constant placement of the hook (18<sup>th</sup> video, 8:08), the elephants do not choose to wear the ropes and chains, but rather are forced.

### Conclusion

When assessing elephants' welfare and the overall captive condition, it must be taken into account how all aspects of the animals' experiences culminate over time to yield a good or poor quality of life. Management choices, training methodologies, enclosure design, social opportunities, and enrichment promote or diminish an individual's welfare. Also for consideration are what we know to be key characteristics of elephant natural history and behavioral biology, which include: 1) highly social nature, living in a fission-fusion society; 2) evolved to walk many miles per day; and 3) spend 18 of the 24 hour period engaged in activity, often feeding and foraging behaviors. These key characteristics can serve as a good starting point to assess the captive condition.

While it's true that upon first glance, it seems the Hannover Zoo's cow-calf group is consistent with the first key characteristic. However, upon further reflection, consider that the cow-calf social group is not afforded much free time to socialize without interruption from the keepers. For example, staff dictates the following: how they go on and off exhibit, when and how they go to the pool, how they access their food, when they can socialize, what types of enrichment they can access, and how much time they have 'to be elephants'. These management choices directly compromise the benefits of this diverse social group. The frequent separations of mothers and calves, and calves from each other, is highly disruptive and interferes with normal behavioral development and socialization. To rectify the current practices that diminish elephants' welfare, they should be given near-continuous access to each other; the majority of the calves' training sessions should occur whilst calves remain in the social group, and separations should involve the use of positive reinforcement for both the calf being separated AND the rest of the group for remaining calm during separations.

The second key characteristic of elephants involves the distances they walk daily. Of course this will vary based on resource availability, but even in times of plenty, elephants are active and on the move. The videos demonstrate that the elephants are walked by the keepers multiple times per day, are forced to move quickly to the pool, and calves are paraded in circles around the training yard. Although this can be defended as 'exercise', and while it is true the elephants are walking, it's crucial to consider the physical and psychological costs to the elephants. They are forced or

made to do these activities via negative reinforcement, have no choice in whether or not to participate, and the pace and path they travel is dictated by humans. Presumably, the elephants are inside a barn at night (since they are lead out each morning and in each afternoon), which is a practice that may further diminish their opportunity for natural activity patterns.

The third key characteristic, elephants' activity patterns, can be linked to the second with regard to solutions. We know that elephants are active for a significant portion of a 24 hour period, and we know that management of captive elephants has historically limited and altered natural activity patterns. Therefore, solutions to enhance the elephants' activity, both in terms of types of activity and percentage of the 24 hour period in which they are engaged, should focus on management practices that can encourage natural feeding and foraging behaviors and socialization, which will yield elephants with more appropriate behaviors. Some simple changes could include how the how and when food is offered. The food can readily be used to encourage the elephants to go to pool. Feeding behaviors and time spent foraging can be expanded by distributing and spreading the food all over the enclosure, providing food in ways that encourage a diversity of behaviors such as presenting food off the ground (hanging feeders, etc.) and burying the food in substrate. These simple changes will encourage more movement (currently elephants receive food on concrete slab in front of public and in several feeder balls that appear to remain in the same location) and promote species appropriate feeding and foraging behaviors. Expanding the amount of time the elephants are active, diversifying how they receive their food, and allowing natural social interactions to take place, would significantly help return some level of choice, which results in meaningful outcomes, back to the elephants.

FC training and management, because of the tools and tenets used, strips elephants of autonomy, subjects them to punishment, and uses pain and the associated fear of that pain to control the elephant's behavior. The FC training approach is antiquated and should be replaced with the more humane method known as Protected Contact management. PC has two equally important objectives: protect and promote elephant welfare, and protect human safety (many people are killed or injured every year by captive elephants). The videos clearly and repeatedly illustrate how FC subjects elephants to aversive stimuli that result in fearful behavior, disrupted natural behaviors, reduced behavioral diversity, loss of autonomy, and ultimately contributes to diminished welfare.

With some facility modifications and staff training in the theory and techniques of PC, the Hannover Zoo could adopt a more humane management approach for the elephants. PC has garnered much global support; zoos all over the world now use PC management. Many facilities may be initially reluctant to move from FC to PC because of perceived difficulties like the cost of facility changes or because they fear loss of behavioral control over the elephants. To address concerns regarding facility enhancements, phasing a transition from FC to PC is one approach often used if facility modifications prevent a total conversion. Regarding the perception of loss of control, both elephants and staff must transition and learn new training methods. With

patience and a thorough understanding of the tools and tenets of PC, and proper coaching in the practical applications of PC, the staff will find they have full access to the elephants, can provide all husbandry and veterinary care needs, can develop public presentations, and ultimately should come to see the elephants develop a greater repertoire of species appropriate behavior, socialize and interact with each other, and the keepers will discover a trusting relationship with the elephants based in positive reinforcement and not reliant on aversive techniques. Switching from FC to PC would be the single most effective means to expand the behavioral repertoire and diversity, to enhance enrichment opportunities, to promote autonomy and encourage natural social behavior, and ultimately and unequivocally result in an improved quality of life for the elephants at the Hannover Zoo.

This report is respectfully submitted and I welcome any questions or comments.

Margaret Whittaker

A handwritten signature in black ink, appearing to read 'Margaret Whittaker', is centered on a light yellow rectangular background.

Animal Behavioral Consultant