

It seems important to me to be very honest and factual when addressing this question, otherwise you can lose credibility and get labeled as a vivisectionist or an animal rights activist.

- I have always been frank about what I do at work with people I know very well; with strangers I tend to be reserved, more cautious. I learned that the hard way on a flight to Sacramento to attend an AZA [American Zoo and Aquarium Association] course on Enrichment & Training, when I struck up a conversation with the lady seated next to me. We started discussing what we did and I was a bit evasive until she said she was a pharmaceutical representative; I thought, “hey, a comrade, why not tell her more of what I do for a living?” She freaked, and I was shocked; how can a pharma rep be against animal/drug testing?! In the end, we decided not to speak anymore and then had to sit next to one another for two more hours, very tense.

Fortunately, this was an exception; most people I talk to about what I do are very understanding. I find very few people who haven't had their lives touched by cancer or other diseases we are all working really hard to treat. I think, once people get over the “ick” factor and hear how regulated the field is and how much we all care for our animals, they calm down.

- All of us have probably found ourselves in sticky situations, from time to time, when it comes to our work. Yes, we're all very passionate about what we do, and care deeply about the animals we work with on a daily basis; but there are other persons/organizations out there that feel very differently than we do.

I am very open to speaking about what I do even though I've had an active hand in several of the more ugly things that occur in this line of work. No, I'm not about to wear a t-shirt prominently displaying a head-capped monkey, but if I'm asked what I do, I tell the truth. What I try to remember is that there are several views about this field out there and that what we do isn't for everyone. Thus, if some people feel strongly against what I do, I allow them to voice their opinions, and then try my best to make it very clear that we do more than experimentation. I explain that we have government animal welfare regulations [that negate the status of “animals” to the great majority of animals found in research labs] as well as voluntary regulations that we use along with everything in our power to ensure that the animals we are working with are not only healthy but also happy. If the subject of euthanasia presents itself, I let people know why terminal work is sometimes necessary, that we utilize the most painless and peaceful method of euthanasia possible, and that it's hard on us as well. Once people hear this, and find that a majority of folks in biomedical research are indeed *animal people*, it usually lessens the tension.

job interview

Imagine, I am applying for a position at your Animal Care unit. What qualifications would give me the best chance to be hired by you? As part of the job interview would you give me a tour through the animal quarters?



- I would want someone who can communicate well with others, is able to work independently, has pride in a job well done, likes animals, has an open mind about research, and has a good level of patience. I would only take you on a tour if you passed the first level of interviews, and I would watch you during the tour to see how you react to the animals and how the animals react to you.
- Rather than focusing on diplomas, I check if the job applicant has a positive connection with animals. For this purpose, I do make the necessary arrangements so that I can take the candidate on a tour of the animal holding areas.
- Job applicants should be calm and not afraid of animals; this should, in my opinion, be a basic condition for considering a candidate to work with animals.
- If I have any doubt about an applicant's relationship with animals, I take her or him to a rabbit room and keep asking questions about his/her background. If the rabbits stampede or thump, the person does not get the job. The animals are the best judges of a good or bad team player and animal welfare enthusiast.

- Rabbits may stomp when any unfamiliar person enters their territory, so I am not sure I would hold it against an applicant initially.
- It seems important to me not to take the animals' initial reaction to the presence of a strange accompanying person, but wait and see how quickly they settle down and how they react when the person tries to communicate with them. I take it as:
 - (a) a good sign when monkeys come to the front of the cage to get a better view of the stranger, and the stranger can look at the monkeys without scaring them away, and
 - (b) a bad sign when monkeys kind of freeze in the back of their cage while the stranger talks to them.
- When I interviewed potential candidates, I first spoke with them on the phone and then brought them in; I needed to see them around some animals. I actually had

them walk rounds with me; it helped a lot! Especially when you are dealing with primates, many people think they really want to work with them until they come face to face with them in the laboratory setting and reality sets in. It is very frustrating when people look so good on paper and in person, and then you get them around the animals and notice that something is missing—you don't see that sparkle in their eyes that says "WOW! This is awesome, when can I start?"

- What is true for monkeys holds true also for any other animal species found in the research lab. If a person applies to work with rodents, rabbits, dogs, cats, frogs, fishes, birds or farm animals, she has to convey her fascination with these animals in some spontaneous manner, otherwise there is a risk that she regards animals as *things* and will interact with them accordingly.

role on the animal care committee

How many of you on this forum serve on the Institutional Animal Care and Use Committee (IACUC) at your particular facility?

- I am a behavior technician and serve as the chairperson of our IACUC. It is important for me to be actively involved in meetings so that I can present and discuss ideas, techniques and protocols that best address the physical and behavioral needs of the animals and the needs of the research scientists.
- As part of our post-doctoral training, we rotate on the IACUC as a veterinarian for six months and then serve as ad-hoc members for the remaining time in the program. During my rotation, I performed designated reviews and site visits. I learned a great deal and feel I made a significant contribution during my rotation; I still attend as many of the meetings as possible.
- My title is Enrichment Specialist; my duties include the management of our enrichment program and the behavioral health of our animals. I am an ad-hoc, nonvoting member of our IACUC, and serve to keep the rest of the Committee informed of the state of our enrichment program. I review all protocols involving nonhuman primates and exemptions from any aspect of our enrichment program for all animal species during the approval process.
- Your situation is a fair compromise, even though it is my personal opinion that a qualified animal caregiver or animal technician should be a voting member of any Animal Care and Use Committee. This person would quasi-represent the animals who, after all, are in most cases at the mercy of people who have very little understanding of their research subjects' biological needs.

It is my experience that most animal caretakers and most animal technicians are better qualified to assess "their" animals' needs to be free of stress and distress prior to and during experiments/ tests than principal investigators and chief veterinarians.

- I think your idea makes a lot of sense since we, the animal care technicians, are the ones who are in direct contact with *our* animals every day. I could tell you specific behavior/personality traits of each monkey in my room and in a lot of the other rooms I work in.
- I feel the same; no one knows these animals like the folks who care for them daily but, sadly, in many places they are not yet recognized for the important jobs they perform. They often feel overlooked and insignificant in the big picture.
- The question then is, how do we get the scientists, veterinarians and administrators to bend down and acknowledge that practical animal care-experience is at least as valuable as academic degrees when it comes to deciding how to control husbandry-related and handling-related variables that may skew scientific data collected from the animals? A professor who knows his/her animals only as computer data is certainly in a much less qualified position to assess the impact of the housing conditions and the actual data-collection procedure on the animals' well-being and stress status than the caregiver and technician who work with the animals on a daily basis and collect the data directly from them.
- One way to convince scientists of their dependency on animal care staff to produce reliable scientific data is for the people who do the hands-on work with research animals to take the time—even free time—to publish their refinement ideas in the professional literature.
- Here in Canada, the Animal Care Committee (ACC) is similar to the IACUC in the United States. I am the lab animal technician who looks after all animals listed in our research protocols. I review the protocols prior to the ACC meetings and discuss any issues that I may have with the committee members before they vote. I am a non-voting member but like to attend the ACC meetings, as it gives me a chance to find out what's going on with the protocols under review and get first-hand knowledge of anything that could be an animal welfare concern.
- In the United Kingdom, it is a standard protocol to have appointed animal technicians serve as full, voting members on the ethical committees—the equivalent to the IACUCs in America.
- The situation is similar in Switzerland where lab technicians, dealing with the animals on a daily basis, are full members of the IACUC.

killing animals

When you work with individual animals or with a group of animals—be it mice, cats, monkeys, or any other species—for an extended period of time, chances are that you develop personal relationships with them; that means you get attached. Once you get attached to an animal or a group of animals in the research lab setting, you may find it sad or painful when the time comes to kill them or have them killed. If this is an issue for you, how do you deal with it?



- This is an important and difficult subject. I have been present at the final moment of some dogs who, I feared, would be frightened with strange people. It was hard and there was of course some crying, but I felt relief in the fact that I could offer these animals, who were so close to me, some comfort; it was worth the tears!
- I would worry if I ever found that I wasn't disturbed by the thought of having to kill any creature, but it is much more difficult when you've become friends with an animal, and this happens to me quite often even though the animals in our lab are with us only for a short term. After 40 years in the business, I still find it difficult. Yet, I do get involved in the killing process because I strongly believe that it provides some comfort to the individual animal to have someone familiar present who maintains kind and gentle vocal contact up to the very end.

- I am currently a second year PhD student working with feed-restricted broiler breeders. I had no previous experience in this sort of setting/environment. Before that I was a vet nurse for circa eight years so I was used to assisting with and performing euthanasia.

When I had my interview with my funding committee, one of the first questions I was asked was how I feel about euthanizing my chickens at the end of the study. My reply at the time was that it was evil to kill, but a necessary evil and the lesser of two evils. At that point I had made my peace with this issue. However, it does come at some cost as I am now constantly being reminded—by myself!—that I personally am responsible for the deaths of my birds; there is no distancing myself from this fact. I often feel that there is some kind of cognitive dissonance going on in my head. Almost my whole life has been spent trying to help the individual animal and now I am sacrificing individuals for the greater good and, while I find it easy to rationalize this at a distance, it is definitely much harder when you work closely with these individuals day in and day out. Before starting, I had rationalized this at the level of the individual animal: these birds are constantly hungry so what sort of life would they have if I kept them alive? But when you then spend time with them and realize that there is so much more to these birds than simply an unrequited desire for food, it does become difficult—very difficult. Knowing an individual's personality makes

it so hard. My chickens weren't/aren't just hungry birds to me anymore—they are characters for which hunger is only a shaping force. I am not sure that I will ever get over this hurdle and, to be honest, I am not convinced that I want to. I always said that I would get out of nursing if I ever got to the point where I just didn't care anymore, and I think the same applies here. If I wouldn't feel for these birds, I would have lost all compassion.



How do I cope? Firstly, I take full responsibility for the manner in which my birds are dying. I euthanize them myself, and it is important to me that I do this. On the one occasion when I haven't done so I got greatly upset. For me, I need to know that they have died peacefully, been given the best possible death (unpalatable

phrase) that I could give them. This includes them being handled by somebody they are familiar with and are comfortable being handled by. I also have created a ritual specifically for my birds. They are generally feed restricted so, on the last day, I give them a last supper in which they can eat freely; I euthanize them only once they are satisfied and stop eating. I mentally switch off and try to treat this all as any other routine event, focusing my mind on other issues. Anybody observing me would probably think that I just don't really care and that I am not emotionally affected by euthanizing my birds. To be honest, I do care but I am not affected emotionally as *there is a great big wall around me* that protects me from getting overwhelmed by what I am actually doing! It generally hits me a few days later when I feel tearful but, as my housemate would testify, I am generally grumpy and bad tempered that night and just want to be alone.

I find that spending time with my pet dogs afterwards helps; I will usually go and have a play session with them or give them a special treat or something like that. I probably compensate for feeling bad by being overly good with other animals, to remind myself that I am an animal lover.

Talking to others definitely doesn't help me; I get irritated if people come out with trite phrases that they think will help. Finally, I remind myself of why I am doing the PhD and focus on the perceived animal welfare benefits.

- When you love animals, you are bound to develop a close relationship with them; this makes it very hard to put an animal down. I was very close to all the marmosets of our colony as I trained them during many, many sessions and worked with them over a period of four years. There were several marmosets who had serious health problems; we tried very hard to turn their conditions around, in some cases for as long as six months, but it was finally decided to relieve them from their pain and suffering.



I ended up placing the femoral needle that would deliver the euthanasia solution. During the procedure I focused on proper needle placement, trying to avoid any extra stress or distress to that animal. I preferred to let the vet actually deliver the lethal dose; this is probably my coping strategy, it makes me feel a little bit better. After euthanasia of one of my animals I was always very sad for several days.

To put down an animal, for whatever reason, has always been the toughest part of my job; no question. I wish the animal rights groups would understand just how much we really care and love the animals that we all work with.

- I get terribly upset when it comes time to euthanize one of our macaques. I am the one who takes care of them day in and day out, feeds them, medicates them, grooms them if they ask for it, and euthanizes them. It is very difficult because I know the animals so well and, unavoidably, get attached to each one of them.

I don't feel like there is anyone here to talk to about this dilemma, so I deal with it on my own. I have cats and a bunny at home; they are my therapists so to speak. I do my best to be professional at work but it does show on my face that I am very upset. Everyone is usually very good in giving me space and allowing me to deal with it in my own way.

I am lucky that not only do we not euthanize often, but some of our investigators are moving towards retirement rather than euthanasia. My dream is to open a retirement center for macaques who are no longer needed for research.

- I have almost left my job a few times in my 24-year career while working with dogs in chronic studies. It can be very hard when an animal is euthanized with whom you have worked for quite some time and for whom you have developed affection and compassion. It helps me to share my feelings with others who have similar experiences, and to know that I am not alone but that it is okay to feel very sad and frustrated. I firmly believe that the feelings and emotions we carry for these little critters help us to make their lives as good as possible while they are in our care!
- It can be tough, very tough at times to deal with the realities that animals are facing, by the millions, daily in research labs. I worked in this environment for 25 years. After a few months, I got so disillusioned that I vowed to myself never again to kill an animal for scientific reasons. I kept this vow, missed job opportunities but kept ease of mind and heart.

death and dying

Could it be that animals are aware of their mortality and afraid of dying when they face a life-threatening situation, for example, monkeys who are forcefully restrained by the human predator during a painful procedure?

- It is probably more an issue of survival instinct than fear of death.
- The idea of death and dying may not exist for animals. Unlike humans, animals do not give the impression that they identify with the body, hence there is nobody there to actually experience anxiety at the prospect of the body's decay. The survival instinct takes care of the body; it's an unconscious process. At the sight of an unexpected danger—for example a fast approaching car—the survival instinct takes over also in humans, and you do exactly what needs to be done to protect the body—no thoughts, no fear, no anxiety, just right action. Under normal circumstances, however, humans rely on the mind for taking care of the body; this consciously taking care of a vulnerable, complex organism that is constantly exposed to a rather dangerous environment leads to incessant restlessness, fear and anxiety which, I think, animals don't suffer from.

Humans tend to have a feeling of insecurity most of the time, as neither the body nor the external environment are, ultimately, under their control. Animals probably don't have this problem. This is perhaps one reason why being with animals can have such a healing effect on the human psyche.

- I think that an animal who tries to escape from a predator has some feeling of being in peril. Even though the animal has probably no abstract notion of ceasing to exist, I would call that feeling fear of death.
- It seems to me that animals have an instinct for living, and thereby preserving the species. An animal probably avoids a situation, such as being captured or receiving an injection that is remembered as threatening his or her life in the past. Even the memory of such a situation inflicts suffering if the animal is facing the same situation again.



- This implies that animals in laboratories are often suffering intense fear when an investigator or technician enters the room to subject one of them to a procedure that was experienced as life-threatening in the past. Most of the common procedures are life-threatening for animals, just as they would be for humans: the subject is first captured by a predator, then immobilized by the predator and finally forced to hold still while being handled by the predator. This must be quite a terrible experience, so animals in research laboratories are, therefore, likely to live in terror much of their lives.

self-awareness

I wonder, do monkeys have a sense of self and identify with their bodies?

- When a monkey looks in a mirror, he or she probably thinks that the reflection is another monkey. This would suggest that the monkey does not have a sense of self.
- Doesn't the fact that macaques develop stable dominance-subordinance relationships imply that the individual group member must have a feeling of self, *I* versus *you*. I would even go one step further and argue that macaques—similar to humans—also have a sense of *us*. This identification with a group is the basic driving force of xenophobia in nonhuman primates, and war in human primates.
- I regularly see macaques threaten or lip smack their mirrors as if they are communicating with another monkey, but I have also made many observations of macaques using mirrors to look at and clean their own head implants. Does this not suggest that there is some recognition of self?
- Having worked with macaques for around 14 years, I strongly believe they do have a feeling of self. I have one monkey who demonstrates this quite clearly: he actually grooms his little face while looking at his reflection in the mirror. If he wouldn't

identify with the image in the mirror, he would probably touch/groom the mirror but not himself; after all he cannot possibly see himself directly.

- Your observation is very similar to mine of Annie, a cynomolgus female, who looked in the mirror and examined her own teeth. She used her fingers to pull her lip down to get a better look at the teeth, with her face close to the mirror. She noticed a small piece of raisin stuck to her tooth and used the mirror to direct her fingers to remove it. Annie didn't reach to the raisin image in the mirror; she reached to the raisin piece stuck to her tooth as she looked in the mirror, and removed it. Recently we put a red dot on Annie's forehead while she was under for medical procedures, and then later took her to the mirror. She put her



face very close to the mirror and looked at the dot for some time. Then she reached up to the dot on her forehead with her fingers, as she continued looking at it in the mirror, and tried to groom it off (Schultz, 2006).

- I have also seen monks who use the mirror to groom themselves, indicating that they are aware that they are looking at themselves.

- Anyone who has worked with a large number of macaques in any close relationship can attest that some have very apparent self-awareness, while others do not. With respect to mirrors, I think young animals cannot recognize the image as self, but many adults do seem to understand the reflection.
- Formal studies using the mirror test in chimpanzees have shown that certain individuals seem to recognize themselves in the mirror and other individuals don't [Gallup, 1970; Lethmate & Dücker, 1973].
- This is one of the complications of research on animal cognition. If one animal can perform the required task, does that mean all members of that species have the same cognitive ability? Or, do several/all animals tested have to perform to criterion for statistical significance to indicate that the species has that capacity? A colleague once had some extremely interesting results on cognition in pigs rejected for publication because only one of the six pigs performed the task. What if the other five pigs were just being lazy, distracted or did not perform the task for some other reason?

- Do we know for sure that each and every psychologically healthy adult human identifies with the reflection she or he sees in the mirror? I am not quite so sure. Have you ever looked into the mirror and seriously asked yourself "Who is that?" and then pondered about an answer that makes sense?



- Even though the question of self-awareness is not really relevant on this forum, it is interesting because we humans have the tendency to try very hard to find human-specific characteristics that distinguish *us* from *them*—the animals. I remember when people had a hard time coming to grips with the fact that nonhuman primates not only fabricate and use tools, but that they can also learn a sign language and then kind of talk with you if you also know sign language.

There is no good reason to believe that only humans have a sense of self.

humor

Do animals have a sense of humor?



- When I see how our cat enjoys it when he can make our dog run without even getting up, I have no doubt that he has a sense of humor.
- When I paired aged rhesus macaques with surplus infants from a breeding colony, I noticed several infants who got a kick out of quickly touching their *opas* or *omas* as if inviting them to play, and then jumping up on the high perch out of reach of the seniors who, with the frequent repetition of this game, got a bit annoyed; but what could they do? When enticing their partners, the kids showed the typical play face, which includes laughing, and they sure gave the impression of having fun. Jack, a 33-year-old male got a bit distressed by his little companion's constant teasing, so I finally exchanged the kid with another *oma*, who did not try to play with the old guy but groomed him at length to his great delight.



- I remember the tale told by Miriam Rothschild about her parrot who called the dog's name and whistled; the dog dutifully turned up, and then the parrot laughed. It seems to me that this parrot did have a sense of humor.
- As for parrots with a sense of humor, I would say absolutely yes! I had a greenwing macaw whom I used to bring to work with me. One of Sam's favorite things to do was walk into a dark office and make ghost sounds to anyone walking by. He would poke his head out and laugh at anyone that he was able to make scream. Of course he also loved to quasi-ask for scratches, only to bite and laugh at the person who obliged.
- We have a fairly tame garden robin at home who teases our cat by persistently sitting in the tree a few feet above the cat's head:
 - Cat starts climbing the tree stalking Robin until she's a few feet away, when Robin moves up a bough;
 - Cat repeats process and so does Robin.
 - When neither of them can get any higher,

Robin flies down to the bottom and helps himself to cat food;
 Cat ponderously works her way down the tree—she's 19 years old and should know better!
 Robin flies up into the tree;
 Cat collapses from exhaustion;
 Robin comes back down and pulls hair from Cat's coat;
 Cat has no teeth, so Robin is in no real danger.

I should add that at no time is Robin any more than one branch ahead of Cat and that he never tries this game with any of the younger, more agile neighbor cats who pass through the garden from time to time. I suspect that I am endowing Robin with more credit than perhaps nature intended but it's fascinating to watch. I end up removing our cat to the safety of the house, as I'm worried that she'll die from frustration.

- Your observations make me recall a scene that once unfolded in our yard.

A turtle was making her way across the lawn toward the cranberry bogs when a very young squirrel discovered what,



I'm sure, seemed like a moving rock. The squirrel would tap the top of the shell, causing the turtle to pull her arms and legs in. After a few minutes the turtle would slowly extend her limbs out and start walking again, whereby the little squirrel—who had patiently waited during this interim—bopped on the shell again and caused the turtle to pull herself into the shell again. This happened several times during the course of an hour, so I can only imagine that the young squirrel found this interaction very interesting and fun. The whole thing was surreal to watch; it was like a peek into a real-life Gary Larson cartoon.

- Many years ago, when I managed a pet store, I had a scarlet macaw who would always wait until I had swept the floor and then proceeded to scoop with his beak the seeds out of his bowl and fling it across the floor. When the bowl was empty, he would stick his head upside down in it and laugh as loud as he could—he liked the echo of the bowl—until I swept it all up. I would wait a while, refill his bowl and the whole scenario would start over again. That bird sure had me trained.
- I had an Amazon parrot who liked to sing *You are My Sunshine* whenever I had the vacuum cleaner on. One day, I went to answer the phone and, after a moment, heard the vacuum on and the bird singing. I first thought a coworker was cleaning, but then quickly remembered that everybody was at lunch. When I went to investigate, I found that the bird had unlocked her cage, turned on the vacuum and was sitting on top singing her little heart out. Was it an expression of humor? I don't really care to know but it was fascinating to witness this funny scene.
- My friend had a parrot named Baby who would act very sweet and try to get you to pet his head through the cage bars. When you did, he would bite you very hard and scream "bad Baby!" Obviously, this is what people had previously said whenever he had behaved in this manner. It's hard to say whether this was just a learned response, or had an element of humor or amusement in it. But he seemed to get a kick out of it!

- Even if animals—and for that matter also humans—*learn* to respond to a certain situation in order to trigger a predictable, albeit futile reaction in another partner, this does not exclude the possibility that the learned response is an expression of humor/amusement/fun. There is no convincing reason to believe that animals do not have a sense of humor and derive amusement and fun from a certain situation, just as humans do.
- I believe many animals have a sense of humor. It is my experience with pigs that they sometimes exhibit behaviors that serve no purpose other than getting people to react.

My favorite example is from almost 17 years ago. In our lab we used to exercise the pigs in the afternoons in the dirty hallway. The pigs would run up and down the hallway and greet anyone who exited an animal room with a big slobbery tug on their clothes.

There was an understanding that you did not bring visitors to the facility after 2 p.m. without an appointment because the pigs would be out—and therefore some feces was likely to be in the corridor; not a good image for a guest.

I got a new boss during a group shift. He was a scientist who had never supervised an animal group. I explained the need for an appointment for afternoon visits which he said he understood. About a month later at 3 p.m. one afternoon, I hear two of our pig ladies hauling down the hallway, oinking and grunting gleefully. Then I hear the commotion of several voices. I turn the corner and my new boss in his suit and several suited visitors are standing kind of stuck against the wall with two 125 lb piggies tugging on their suits leaving drool marks, brushing up against them and grunting. The pigs had very happy looks on their faces while the visitors were not amused. I refrained from laughing and called the two ladies off with a treat. The visitors in their slobbered, smelly suits walked gingerly down the hallway, I gave them the rest of the tour and they left. My boss never came down again without an appointment. I think those two pigs laughed about that for weeks! They were very amused.



- Jo, one of our breeder rhesus amuses himself by peeing on you while you are bending down under his upper-row cage to check another animal in the bottom row. I don't think it's funny but he probably does. You have to watch out for him: he will sit on his perch up front and casually put his hand in the urine stream, directing it right on you. You will feel sprinkles on your head and on your scrub pants, and when you get up and give Jo a piece of your mind, he will just look at you like an innocent baby; but I know, deep inside he laughs and already waits for the next opportunity to get you. I would call that a sense of humor.
- I had a most memorable experience a while back when I worked with young chimpanzees. One female would often take a blanket and put it over her head, like a little ghost. She would then chase the other chimps around who would run away, screaming and smiling. The little "ghost" would then suddenly pull the blanket off, and the other chimps would laugh and laugh. It looked like a human game of tag, and they definitely seemed to enjoy it. I am always thankful for the time I had with them; they were amazing.

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