

Karolina: I'm sitting here with my dear friend Eva Bertilsson, who is about to finish her master's on... what, Eva, would you like to tell us?

Eva: Well, it's on separation-related behavior problems in dogs. When I'm finished, it's going to be a literature paper, just reviewing the subject, and I've also done an experiment on this subject.

Karolina: Oh wow, could you give us just a little bit of background, for people who are not dog owners, what is this type of problem, and how prevalent is it? Could you tell us a bit about that?

Eva: What we see when dogs are left alone at home, or just placed in an enclosed area; the owner might be closing the door behind them, and they might still be at home. We have a lot of dogs that will be barking, whining, howling, digging, scratching, chewing. Sometimes you can see stereotypical, repetitive behavior, like spinning. Quite often it's also physiological responses, such as drooling or trembling, shivering. Stuff like that. I was surprised to see the reports on how often ... How frequently seen those problems are. It's estimated that up to 50 percent of the family dog population does suffer from separation-related problem at least at some time during their lives. Again, living with dogs, yeah, I can see that. Because it's also a matter of how do you define a problem? I put a lot of work into organizing the environment for my dogs to prevent that type of behavior to occur.

Karolina: Do you see any patterns? Is it more prevalent in old dogs? Young dogs? Females? Males? Specific breeds?

Eva: There are quite a few investigations done trying to answer that type of question. There seems to be a higher prevalence in old dogs, but other than that, results are very contradicting, which probably means that there are other factors that are way more important than those more distant background factors.

Karolina: Are there any specific triggers, or events, that might trigger these types of behaviors?

Eva: This is one of the questions that we would like to be able to answer, but where proper scientific investigations are lacking. Because there is this idea, and I would believe that it is true, but it hasn't really been properly investigated. There is this general idea that, for some dogs, it's the separation from a specific person, or from significant people that is the trigger, in itself.

Eva: Then, for other dogs, the behavior might be triggered by outside events. Since the definition of separation-related problems is that it's occurring more frequently when the dog is alone, then you'd start to wonder why would the dog be, say, barking at bypassers? Why would he be doing that more when he's alone, rather than when you're at home?

Eva: Then you would speculate maybe that's not the barking at bypassers that's the key factor here. Then again, you could speculate that if you're at home, you're sort of there

to help your dog, to guide him through events that might be occurring. It might be people passing by. It might also be events like loud noise, thunderstorms. The dog might respond more intensely in your absence. Might be longer duration of his responses in your absence, rather than in your presence. But these are still just speculations.

Karolina: These problematic behaviors, are they only seen in dogs that are the only dog of the household? What if there's two dogs?

Eva: Doesn't seem to matter much.

Karolina: So, two dogs together could very well start doing these types of behaviors?

Eva: Yep. Yep. It is sometimes seen that if you have had two dogs, and then say one of your dog dies, that could trigger the onset of problems in the dog that's left behind. Or the contrast, if you have one dog and he's already got problems, it seems not to help to get him company by another dog.

Karolina: Once this has become established as a problem... Has there been any successes in treating this condition?

Eva: Yeah, definitely. In the scientific literature, there are several different treatments that have been tried and tested and shown to work. The problem is when it comes to behavioral interventions, the treatment packages vary quite a lot. That makes it difficult to know exactly what component is it that is the active ingredients, so to speak. What component is it that's working? What component that definitely seems to be working, and that professionals also agree upon would be systematic desensitization to triggers that occur before departure.

Eva: Say, if the dog starts pacing when you go out to grab your coat, or you pick up your keys or things like that, to start working with those triggers. Pick up your keys, but you don't leave. Grab your coat and put it back away.

Eva: Also, lots of systematic increase of the time the dog is left alone. Starting with just stepping outside the door and going back in.

Eva: This is the equivalent of the treatment that is often used with humans that have separation anxiety. Systematic desensitization combined with a relaxation protocol. For a few months, you'd have a relaxation protocol that might include you saying things to yourself, or how you breathe. With the dogs, the equivalent could be providing your dog with food. Bone to chew on as you leave. It's also about the program including that you make sure that your dog is actually calm and relaxed for the entire time before you increase the duration.

Karolina: Yeah, so staying below threshold, as it were, and gradually increasing the exposure of this aversion?

Eva: Yeah.

- Karolina: Also, I'm thinking that what you're describing is something that somebody who would be an experienced animal trainer might be able to do without any problems. How do people follow through when they have this type of task?
- Eva: That's another issue with the scientific investigations that are done. Is that since the implementation is done by the owners, it's often quite unclear how precise they are in following the protocols. It's also been shown that owners are much more likely to follow the easier parts of the protocols, which might include things like give your dog a long-lasting treat before you leave. Or, as is often part of the protocols, stop all punishment when you come home.
- Eva: Often, people have been scolding their dogs for tearing the house apart, and just stop doing that is often part of the package, and that's something that people seem to readily comply with. When it comes to the more elaborate aspects, such as the ones I just mentioned with decoupling the departure cues, and with the systematic increase in time, that's difficult. It's giving you more problems in your everyday life, right. Because you can't just go and leave your dog.
- Karolina: Yeah, and you need to understand a little bit about how this process works, that it's really important to keep repeating the procedure at one step before you go on to the next.
- Eva: Yeah, I think this is one of the causes why we often also see medication being used. Because it's quite common to use medication in the treatment of separation-related problems. I would believe that it's said that that is for the most severe courses. Most severe cases. Then again, if we can regulate the time when the dog is at home, so that he's not exposed to the home-alone situation, then we can regulate this problem.
- Eva: I would be guessing that part of the problem is that we wanna be able to leave the dogs for longer than our training currently allows. Then medication might aid in that. Then there are discussions about possible negative side effects, and there are also discussions, there is some research indicating that what happens with the medication is that the general level of activity goes down. Also, the general cuddliness of the dog goes down. He's not staying as close to the person when you're at home.
- Eva: There is not necessarily much effect on the behavior - that is when compared to a good behavioral protocol. Without the behavioral protocol, there is probably much more difference. If you compare a good behavior protocol with placebo, and a good behavioral protocol with medication. There are different results. Some researchers see added bonus with their medication, but some do not.
- Karolina: Alright, interesting. I was wondering also: can you make changes to the environment to reduce some of these ... I mean if dogs are barking at bypassers, would setting up, arranging the environment, solve some of the problems?
- Eva: Yeah. That is where it becomes important to really observe the behavior and try to figure out what are the triggers. What are the specific triggers, and what are the

reinforcers for the behavior in the individual dog. If barking is triggered by a bypasser, then it would help to put curtains up. If barking is reinforced by the owner coming back, then putting up curtains to prevent the dog from seeing bypassers is probably not gonna help much.

Karolina: Yeah, sure.

Eva: The more specifically we can understand the situation where the behavior occurs, and the reinforcer that maybe comes - the more precise we could be in designing the environment.

Eva: Then there has been discussion about well, what about if you limit the space that your dog has? Some will use a crate, saying oh, the dog is much calmer when he is in his crate. The data that is out there seems to indicate that it's more about the dog not being able to destroy so much, or not being able to move around, but you see similar stress responses anyway.

Karolina: It's not aggravated by a crate?

Eva: Hard to tell. Since the dog is not moving as much. It's also the research is still so sparse. The measurement, what to measure is still not uniform. I will be interested in ... I mean I would like to know about the dog's preference here. What would the dog prefer? Would the dog have a preference for being in a crate over being outside, or vice versa. The preference tests in this domain are rarely done.

Karolina: Interesting. I have some questions here written down. We haven't talked, really, about the why. The hypotheses or theories about why ... I've been reading up a lot on the emotional systems that are involved in the attachment and bonding interactions between relevant individuals in an animal's life. I was just curious as to whether the weaning age of the dog could have any influence on the development of this type of behavior.

Eva: Hmm. It's not a question that we don't know too much about. It doesn't seem so at the time. The origins of the behavior, of course, are often discussed in terms of the similar behavior pattern as the one you see with infants. The separation distress seen in infants of so many different species. Of course, there is this discussion what about if we habituate puppies early on to separation? What about if we don't? What about if we make sure the puppy has constant contact with his family, which will be the human will be the equivalent of the family, as that puppy moves to his new family life.

Karolina: Yeah, that was sort of my hypothesis, that puppies move too early from a very cuddly environment, including mom and siblings, and is moved into a home with just unknown people who are absolutely dedicated and love the dog and spend as much time as they can with it, but just can't really fulfill that need in the same way as the mom and siblings did.

- Eva: Since there are a lot of dogs that do not develop separation-related problems, it doesn't seem as if that would be a key factor. Then again, we don't know. Because the majority of dogs do leave their litters somewhere between the age 7 and 12 weeks. And also since that is such a critical period for other parts of puppy's development. We want the puppy to go out into the world where he can live his life during that period. It's gonna be hard to test. Even if it was found that puppies develop less separation anxiety if they are with their litter longer, there are so many other negative side effects coming with that.
- Eva: I guess also, since it seems as though the puppy really does tie affectionate bond quickly with its new family, it would be, I guess, more relevant to investigate what's the difference if the puppy's with you 24/7 the first period, versus if you introduce brief alone times early. General recommendation is to do that. To introduce short alone times early on.
- Karolina: Okay. Has that been found to have any preventative value?
- Eva: It's not really investigated enough. Also, big problem here is since the behaviors vary, so do the symptoms, so to speak. What you see as a problem in the dog varies. What we think causes them varies between dogs, and there might also be multiple origins for the behavior within one dog. Within one dog there might be several different reasons why you see, and there might be different reasons for different behaviors, or different reasons for the same behavior.
- Eva: He might be doing some barking because it has been reinforced with you coming back. He might be doing some barking because he sees a cat outside. There are still so many things that are not properly investigated and observed that it becomes very difficult to set up, or to find good research. Because also the research that's done on the factors that might predict separation-related problems, they are all done by comparing groups.
- Eva: You have one group with dogs that do have some kind of separation-related problem, and one group that doesn't. Problem is that the group that does have separation-related problems, they can have problems at all times, and all types, and often with different possible causes.
- Karolina: I'm assuming that some of it is just boredom, and some of it is loneliness, if you see the difference..?
- Eva: Yeah. Differentiating those, you could fairly easily do that through an experimental design where you test it. That is done when testing for boredom in animal welfare research; you can use the same principles here. That would be the same principles that we would be using as behavior analyst, doing a functional analysis of the maintaining reinforcer of the behavior.
- Eva: If we talk about boredom, that would probably indicate that we say it's the activity as such that is the reinforcer. That would also mean that providing more activities would reduce the behavior. If we say it's boredom, it would also be likely to assume that after a long period of time, the problem behavior would increase. That's typically not what

we see. In many of those cases, we see increase in the behavior early on. It peaks early on, and that's one of the reasons why it's often assumed to be directly related to the separation.

Karolina: If you leave for four hours, the animal will be most active in the first, what, half hour or hour or so?

Eva: Yeah, within the first half hour. One of the diagnostic criteria for separation anxiety, at least in some veterinary communities, is that you see the behavior within the first half hour. Some even say within the first 15 minutes. If it comes way after that, the argument is that then not related to the separation from the person, but rather triggered by something else.

Eva: Then again, we're making a lot of assumptions on triggers and on reinforcers, without really having tested them experimentally.

Karolina: Yeah, I think this really brings us onto the next topic, which is your experiment that you've been doing.

Eva: Yeah.

Karolina: Would you like to share with us a little bit what type of experiment it is that you've been up to?

Eva: This is a systematic replication of an investigation done by Eric Eferabasher who looked at, first, does access to a person function as a reinforcer? Basically, what I've done is I borrowed three dogs, and I played around with them one at a time. They got to go with me into a building, and I let the dog into a room, closed the door, and the dog had access to a button. When he pressed the button, I opened the door, let him out for one minute so that he could hang out with me, and I would be talking and petting if he wanted that and so on. After a minute, I'd let him into the room again.

Karolina: These were dogs that knew you? You were friends?

Eva: Yeah.

Karolina: Okay, and did they work to get access to you?

Eva: Definitely. I could train the response totally through access to me. My company was the only reinforcer when teaching this.

Karolina: Okay, so no treats, or petting ... Or, I guess, petting is part of what you did..?

Eva: Yeah, yeah.

Karolina: How did you behave to be a reinforcer?

Eva: I would be there. My mere presence would be there. I would be talking intermittently. I would be intermittently gazing at the dog, and I would be touching the dog if the dog came up within arm's or elbow reach, so to speak.

Karolina: Okay, so normal interaction, as you would?

Eva: Yeah, trying to do normal interaction.

Karolina: The dogs learned to work to get out of a room that they were locked into, and get access to you.

Eva: Yes.

Karolina: Okay.

Eva: Then, just to make sure that it was my wonderful company they were after, and not the room, per se, I also ran a phase where I enter the room with the dogs. Now they can still press the button. If they press the button, they get to get out of the room, and get away from me.

Karolina: Okay, so you didn't follow them out of the room in that condition?

Eva: No.

Karolina: Did they do that?

Eva: On occasion, but not much. Once or twice in a session, but no more than that.

Karolina: How long were the sessions?

Eva: Fifteen minutes. That gives room for maximum of 13 or 14 responses.

Karolina: Okay, and you didn't see any decline in behavior over that time? During a session, they would still want to hang out with you the 13th or 14th time?

Eva: Yes. Definitely. Then we also wanted to test is there anything we could do that would reduce my value, so to speak. We tried with adding toys into room, and we tried with adding various food items into the room. One condition with toys just laying on the floor. One condition with an automatic treat dispenser, set on really dense schedules. Every seven seconds the dog would get a kibble.

Karolina: Wow.

Eva: Yeah.

Karolina: During 15 minutes, minus the time that he was out with you?

Eva: Yep.

Karolina: Wow.

Eva: We had that set so that it would fit the diet of the dogs, of course. If I had smaller dogs in the experiment, I would have to have it set up differently so the dogs wouldn't over-eat. Then we also had one condition with stuffed rubber toys, stuffed with frozen, raw meat.

Karolina: Okay so two food conditions, and then one toy condition. Were these familiar toys?

Eva: Yeah.

Karolina: Favorite toys?

Eva: As much as we could, we added ... Me and the dog owners together selected the toys so that all the dogs had access to the same toys, but they included all the different favorites.

Karolina: Okay, of everybody.

Eva: Of every dog. Yeah.

Karolina: What did you find?

Eva: Well, food, yes. Toys, not so much. With the food, in the food conditions, the dogs would stay in the room and enjoy the food, basically.

Karolina: So they wouldn't ask to get out and hang out with you?

Eva: No.

Karolina: They would rather stay in the room, having the food..?

Eva: Yeah.

Karolina: Wow. Isn't that quite good..?

Eva: Which is really nice..!

Karolina: Yeah!

Eva: In this context, that is very nice. It's very promising. For me, that opens up whole new possibilities. As you know, I'm really striving to implement choice and control in all the training. If we can add that to the home-alone training, which is typically not very much choice and control for dogs, that would be absolutely lovely.



Eva: I mean, of course, for test conditions like this, it's very interesting for me to see that ... I mean these were dogs that don't have separation-related problems to begin with. Still we could show, in the beginning, that they still would very much prefer to have my company, and they would behave to get my company.

Karolina: Yeah. The next step perhaps would be to see if you would get the same types of difference between the non-food and the food conditions, if the dog actually dislikes being alone.

Eva: Yeah. We would expect not to. From so many of the observations of dogs that have various types of separation-related problems, we also see that "not eating" is one of the behaviors that occurs. The dogs have food, they would often not eat.

Eva: Then again, food is a typical part of the treatment protocols. We can still use the eating, and we can still figure out ways to ... When we combine it with other interventions. Like systematic desensitization to the home-alone situation. I do believe that enrichment of various types ... We shouldn't limit this to just food. I used two very simple food schedules in this experiment. One was just a fixed schedule, really dense, you get kibble, and here are stuffed toys. Go ahead and eat them.

Eva: What we see when we work on the enrichment in other contexts, you do much more elaborate things than that. You can do much better than just provide easy food, right? We're talking about enrichment, and we're talking about the various ways to use it.

Karolina: Yes, that's right.

Eva: It's that it's not just about the dog choosing food over me. It's not that simple. We can teach various behaviors with various reinforcement contingencies. If I can get my dog eating, and me coming back while my dog is busy eating, or at least while my dog is busy doing other things, I can also use my coming back as a reinforcer for engaging in other activities.

Karolina: I was thinking, part of the ... If you have a dog and you want to prevent it from ever developing these type of problems, would you then work with this systematic desensitization to all the leaving triggers, and setting up the environment with all these enrichment devices and stuff, to keep the animal busy. What would you do to prevent this?

Eva: Good question. Let me start with just referring to what you just said, what I wouldn't necessarily do. That would be desensitization to the triggers. Because if my dog doesn't have a problem yet, he's gonna figure out when I'm about to leave, somehow. That's more like a treatment if I already have some problems, I think.

Eva: What I would do, however, is to make sure that my dog gets a lot of experience in being alone. Being without me in various circumstances, without stressing about it. Without stressing about it for me, is both that I don't see a lot of overt behavior problems such

as barking or whining, and also all the other... Dilated pupils or the dogs shedding or other stress responses.

Eva: Me, personally, I wanna see my dog engaging in reinforcing activities or finding positive reinforcement in the situation where she is. I think so often, the whole plan with leaving dogs alone is oh, you wanted to become a teddy bear and lay on the sofa. Be passive until you return. To me, it makes less and less sense, I think.

Eva: It makes practical sense. It's very practical, for me as a dog owner, if I can leave my dog, and when I go, he just goes pfff, like a balloon without air, and he doesn't inflate until I come back. That doesn't really make sense, since it's living animals we're working with. From a welfare perspective it doesn't really make sense.

Eva: I wanna think in the same way as I do if I'm designing an enclosure of where an animal's going to live its life. I wanna provide an environment where there are a lot of different possibilities available. It's just I'm not there, but a lot of other possibilities are available. That could also include working with your dog when you are at home so that other things than you are reinforcing him. So that he doesn't rely on you for providing all reinforcers.

Eva: I love having a dog that comes up to me with his chewy bone and wanna hang out together, but that's a bit counterproductive if I'm thinking separation. If I'm thinking separation, I want my dog to be able to engage in reinforcing activities without me. Just be as happy about that. It's the balance between tying a really tight bond with my dog and doing everything together, and for my dog to learn to have some ...

Karolina: Have a life without you.

Eva: Yeah. Some private time without me, and still enjoying it. We want to be able to have both.

Karolina: Uhuh.

Eva: Interestingly enough, I'm happy to end with that, but one of the preventive factors that have been found is to give the dog experience with a lot of different environments, with a lot of different people at a fairly young age. I think between 5 and 10 months, somebody had noted that dogs that had a lot of exposure to various environments and good socialization as a young dog, that seems to be a preventive factor, which I find very interesting.

Karolina: Oh wow. Well, thank you so much for this very interesting talk. Just giving us a very brief overview of both where we stand today, what we know about separation anxiety in dogs, the separation-relate behavior, I should say.

Eva: Yeah.

Karolina: Also, this very interesting experiment that you've been running. With this, I want to thank you for today. Good luck with writing up your Master's!

Eva: Well, thank you, we'll definitely keep coming back to the subject.

Karolina: Yeah.

Eva: Great talking to you, as always.