

The Influence of the Experimenter's Expectancy in the Results of the Assessment of Appeasing Pheromones in Stress of Police Dogs (*Canis familiaris*) during Training

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Introduction

The purpose of this preliminary study was determine whether the use of use of dog appeasing pheromones (DAP), from a continuous release collar, would reduce the stress of police dogs during a training course.

After a family life with their owner (a member of the police force) and basic education for one and a half years, police dogs are separated from their families and brought, with their owners, to a dog training center to undergo two intensive training courses of 7 and 8 weeks' duration, with a 3 to 6 week break between training courses. At the end of these training courses, they are tested to determine their future career. Several dogs may come back for more specialized training sessions. The dogs stay in kennels at the training center during the week and go back to their families during the weekends.

Observations of dozens of previous training courses have indicated that this is stressful for the dogs, as witnessed by symptoms such as barking at night, insomnia, weight loss, diarrhea, salivation, loss of concentration, exhaustion and poor performance. The experience is also very stressful for the police staff owners who are trained with their dog and whose dog will be judged for their suitability to continue as police dogs. The experience was stressful enough to trigger the Ministry of Interior Affairs and the Police Corp to request this preliminary experiment.

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Materials and Methods

The experiment was devised as a double blind placebo-controlled 4 week study of nine police dogs undertaking the training course. Five dogs wore DAP collars and 4 dogs wore placebo collars (Schroll and Dehasse, 2005). As indicators of stress levels, weight, (salivary) cortisol and different physiological and psychological parameters were evaluated at the beginning, during and at the end of the trial.

The Ministry, Police officials and dog owners were informed of the experimenters' expectations of reducing stress, and were educated on stress indicators.

Results

Data were analyzed with the Mann-Whitney, the Wilcoxon and the Fisher-Yates tests, using the SPSS program. Nearly significant results were found for the weight loss in the placebo group ($p = 0,069$ $n = 4$) and significant results for the difference of saliva cortisol level between placebo and DAP groups in the second week ($p = 0,016$), the placebo dogs showing an elevation in cortisol but not the DAP dogs. Several nights, one dog in each group barked 10 minutes, and one placebo dog was found panting several mornings, but overall the dogs slept amazingly peacefully, contrary to expectations. There was no significant difference in sleep quality and (lack of) vocalization between placebo and DAP dogs.

Discussion

The sleep quality and lack of nocturnal vocalizing caught our attention. A reduction of barking and insomnia at night was somewhat expected in DAP dogs, but not at all in the placebo dogs. And a high quality of sleep was not expected at all and never documented in the 15 years this facility has been run, with two to three training sessions a year. They report there has always been always sleep problems linked to barking at night and the trainers have even had to use anti-barking collars to reduce the problem. One dog was at the facility for the third time and was well known as a relentless barker.

The tranquility of (placebo and DAP) dogs at night is not easily explained. It made us think of the Hawthorne, Pygmalion and Experimenter effects. These effects can be measured in experimental designs but the rationale behind them is still speculative.

The Hawthorne effect is defined by Draper as "an experimental effect in the direction expected but not for the reason expected; i.e. a significant positive effect that turns out to have no causal basis in the theoretical motivation for the intervention, but is apparently due to the effect on the participants of knowing themselves to be studied in connection with the outcomes measured". Owners and trainers were under observation and may have been subjected to the Hawthorne effect. The problem with the Hawthorne effect is that it is unpredictable and only observed a poste-

riori. "So as a methodological heuristic, it is useful, but as an exact predictor of effects, it is not: often there is no Hawthorne effect of any kind." (Draper, 2005).

The Pygmalion (or Teacher) effect is a change in the performance of subjects in experimentation in the direction expected by the experimenter. Typically, said Draper (2005), "if teachers were led to expect enhanced performance from some children, then they did indeed show that enhancement". While not scientifically documented in animals, dogs might be influenced by the Pygmalion effect by their owners and trainers.

The experimenter's effects are positive or negative effects linked to expectations acquired consciously or unconsciously from the researcher and is particularly seen in behavioural research. Prophecying an effect might create this effect or its opposite. Talking about the experimenters' expectations to the police officials, dog owners and trainers may have influenced the outcome of the training results and the well being of the dogs. But nobody ever expected the effects to be better than the prophecy, as in this case.

Another possible effect could be related to a distant healing effect researched by Sicher and Targ (1998) in a triple-blind 6 month trial on human patients with end-stage AIDS that showed that having a focused intention for a patient to heal and be well had significant effects on the patient's well-being. In this study, healers from different philosophies and religions such as Christian, Lakota Sioux shaman, Qi Gong Master, Jewish Cabbalist, Buddhist, were asked to hold an intention for the health and well-being of the patient for an hour a day, six days a week, for ten weeks (with alternate weeks off for rest), without the patient being aware he was submitted to this intention. Significant differences were found in favour of the treated group. They were healthier in every parameter, such as days of hospitalization, development of new AIDS-defining illnesses and improved mood.

We are not trying to explain how focused intentions might work, just that they might have an effect on the health of a patient and that we should take this effect into consideration in experimental trials and, also, in therapy. This "Intention effect" may be part of the placebo effect. In scientific research, we might not be interested in analysing the different components of the placebo effect and we may be just satisfied with the difference between the treatment group and the placebo group. But in clinical practice, if the placebo effect is part of the benefits the patient gets from the treatment we may therefore have better results when we intend a patient to heal than when we do not believe in its healing. We still do not know how much of the therapeutic effect is due to the counsellor or to the conviction of the owner that the animal will improve, but we are now conscious it has an effect.

Conclusions

In conclusion, we cannot exclude the hypothesis that the beliefs of the experimenter may affect the results of experimentation and, by extrapolation, that in a clinical

therapeutic setting, we hypothesize that the beliefs of the counsellor and of the owner might affect the results of the treatments.

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DAP, healing, intention, pheromone, stress

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