Aversive conditioning

Aversive conditioning is a manufactured negative response to certain things, much like the operant conditioning developed by Skinner. The contingent behavior is behavior that, when performed, results in the delivery of specific consequences or reinforcers. This article described the measures taken to make coyotes stop wanting to kill lambs for food. The authors contention is that it may be possible to reconcile the desires of both ranchers and conservationists. The latter group wishes to enable the coyote and, perhaps other predators, to survive in the open range, as they have for millions of years. Species that kill farm animals include others: mountain lions, bears, bobcats, and red wolves as well as coyotes. This paper on aversive conditioning mainly addresses whether behavior of coyotes can be altered without affecting their survival in the wild. The question Mssrs.

Gustavson and Garcia attempt to address is whether coyotes can be conditioned to kill animals such as mice, rabbits, gophers, and squirrels- species of no economic value in the western United States- while leaving sheep alone. Clearly, sheep have tremendous economic value in terms of meat and wool production, and ranchers as well as the general meat-consuming public have a vested interest in the survival and success of the ranching industry. Just as clearly, environmentalist and conservationists have an interest in seeing that certain species are enabled to survive in their native habitat, and not simply confined in zoos

under whatever terms humans dictate.

To see if they could make coyotes stop killing lambs, the authors first took a sample population of coyotes from different regions of Montana where coyotes were notorious for killing shepherds flocks. They captured seven coyotes, five from the wild and two from captivity. Presumably all of them loved to eat lamb meat. They fed them tainted lamb, wrapped in fresh lamb hide. The meat itself was not toxic to the long-term health of the coyotes that devoured it. Instead, it was laced with lithium chloride, which causes vomiting. One assumption made was that the lithium did not actually affect the taste of the meat. Therefore, the coyotes actually did consume the meat, and uniformly became sick after eating the lamb. As a result of associating the meat with vomiting the coyotes didnt want to eat lamb anymore. On the contrary, they ran away and hid from the lambs after having eaten the bad lamb meat. Only weeks afterward did they begin to approach lambs as prey when given the chance, and they didnt devour their food as they usually did. They tested their food one bite at a time, waiting between bites to see if they got sick.

In fact, during an earlier experiment with hamburger tainted with lithium the coyotes all became ill. After the coyotes associated the hamburger with emesis, they didnt even taste hamburger offered to them. Instead, the coyotes urinated on the meat, turned over their meat dish, or actually buried it. The experiment with

lithium-laced lamb was a temporarily successful one in that the coyotes were weaned off of lamb meat.

Despite this apparent success, other problems could arise which this experiment did not address. For example, coyotes might not have any other source of food other than lamb. There may or may not be enough other edible things available to enable coyotes to survive. Lamb is a staple food for coyotes in Montana, and other food sources might not replenish that lost by having lamb removed from the coyotes diet. It is noted that coyotes feed on mice, squirrels, rabbits, and even grasshoppers. Yet it is by no means certain that these small animals alone would enable coyotes to survive in the wild. Neither author claimed that coyotes kill sheep to drive ranchers out of business, they kill sheep to survive.

Furthermore, wrapping lamb meat in sheep skin, which is how the authors attracted the coyotes, to bait the lithium capsules may not exactly mimic the taste of lamb " on the hoof". It is very possible that the meat wrapped as bait tastes different in qualitative ways from that of a live or freshly killed lamb.
Moreover, the number of animals used in these experiments was extremely small- fewer than ten for all experiments run. It is unclear from the reading of this article whether it would be either possible or feasible for every coyote living near sheep ranchers in Montana could be captured, imprisoned for a period of time, and subjected

to this kind of aversion therapy. The authors suggest that coyote pups might be conditioned to learn to like the types of food that their mothers do- to learn eating habits in the den from parents rather than only from people. If this were so, then aversion therapy would be self-perpetuating. Yet they advance no evidence that this could be the case. In fact, it is unclear that the coyotes retain a dislike for food for any length of time. For example, three coyotes, which the authors conditioned not to eat rabbit meat, actually learned to eat them again. One such coyote killed and ate a rabbit within one week, albeit cautiously. Therefore, although it may be deemed a success to be able to state that a certain coyote is well on his/her way to hating lamb, it may be that these coyotes need repeated aversion therapy towards sheep, or towards other livestock which other ranchers might raise.

Finally, even if aversion therapy turns out to be effective, or whether it must be repeated to be effective, there is reason to think that this behavior will not be self-perpetuating. There is no evidence produced that a coyote will avoid sheep simply because its mother does. Aversion to lamb meat is obviously a learned habit, not a genetic one. If all coyotes need to be captured, and perhaps tagged and periodically recaptured, in order persistently avoid or hate lamb meat, the conservationists are defeating their own purpose. For their plan to work, all coyotes will have to be captured and " domesticated" in some way. It would appear that, if

this turns out to be the case, truly wild coyotes will have become a thing of the past, and they will not be allowed to roam free in their feral state in any real sense after all.