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ROGER W. GRAY

AGRICULTURAL ECONOMICS: AN ORIENTATION FOR THE 70s*

The United States Bureau of Sport Fisheries and Wildlife, in the Department of the Interior, has been torn in recent years over a classic case of bureaucratic schizophrenia. It is their announced policy to protect species of "rare or endangered" animals from extinction. The bureau also contains a large division whose primary function is the killing of a number of animal species thought to be injurious to agriculture, forestry, livestock, or the general welfare. The killing division, in behalf of the Forest Service, or in cooperation with state agencies and private land owners, poisons countless prairie dogs (*Cynomys ludovicianus*). Living exclusively among prairie dogs, and depending upon them for food and shelter, are the black-footed ferrets (*Mustela nigripes*). The black-footed ferret is high on the Bureau's list of animals in imminent peril of extinction; yet each time a prairie dog town is poisoned (and this goes on more or less relentlessly) the last of the black-footed ferrets may be either starved out or, more likely, vicariously poisoned—since eating the poisoned carrion of a prairie dog is itself lethal. Sightings of black-footed ferrets are rare occasions indeed—not more than half a dozen exist in museums, whereas the five that performed in Walt Disney's 1953 movie "The Vanishing Prairie" quickly died or were lost sight of, and presumably have founded no viable movie colony. The Bureau's predicament is ironical enough—giving rise to classic doubletalk—but it is the prairie dogs' predicament that commands the attention of the true tragedian.

My attention having been commanded, I undertook to investigate not the paradox, which is what we see, but the impasse, which is what the prairie dog sees. How does it feel to know that you are going to be poisoned, or that if you are not poisoned it is because you are to be eaten?

I obtained a grant from the Volkswagen Foundation and moved my interdisciplinary multilingual research team to the Oglala Sioux reservation, west of White River, South Dakota. Our first task was to establish rapport with the prairie dogs, which proved to be a remarkably congenial aspect of the work. Prairie dogs are loquacious to the point of garrulousness, and their well-known gregariousness knows no boundary. We were comfortably ensconced in one of their hospitality burrows, which contained a photograph of a prairie dog bearing

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With apologies to Faith McNulty, author of "The Prairie Dog and the Black-Footed Ferret," *The New Yorker*, June 13, 1970.

a remarkable resemblance to Conrad Hilton and had fine elevator service to the mounds above us. As one of my assistants put it, "these were really great digs." One would never have suspected that these affable creatures were, as we had reason to believe, double-doomed. My past research experiences had taught me, however, that even the most delicate questions must be broached, at no matter what risk to etiquette. It was, then, with the Breimeyer objectivity credo emblazoned upon my escutcheon, that I finally announced the purpose of our mission.

"I have led my team here," said I, "neither to socialize nor to reap lucrative consulting fees, but in the true spirit of scientific inquiry and mindful of the public weal, to probe into the consequences of conflicting policy goals; namely, the methodical reduction of a population on the one hand and the conservation of its parasites on the other. This being a process in which you are deeply involved, I seek your cooperation."

You can imagine my consternation when the leading spokesman for the prairie dog council responded jovially that they would not merely lend their full cooperation, but would involve us with their research team which had been working on this problem for years. I could scarcely believe my ears when he continued expansively to say that they had been working for some decades toward the systematic reduction of the "prairie dog population" while at the same time searching for means to avert the extinction of the "black-footed ferret." Surely, I thought, this is the sanguinary madness of a species bent upon a lemming-like suicide. I was soon to discover the anthropocentric fallacy in my interpretation, however—an error which could have been avoided altogether had I but grown more quickly accustomed to the prairie dog dialect. For I had earlier observed, without taking particular note of it, that the word in their language by which they referred to *themselves* was "farmer," and now I was able to recall that they had also used the term "agricultural economist." My lightning-like mind began adding two and two with its usual celerity. Since they call themselves farmers, I reasoned, then the little parasite which preys in their midst must be what they mean by "agricultural economist." Now it all fell into place—in their delightful little idiom the "prairie dog" is a farmer and the "black-footed ferret" is an agricultural economist. I had already observed that their language was commutative, such that if prairie dog means farmer then farmer means prairie dog, and if black-footed ferret means agricultural economist then agricultural economist means black-footed ferret. I could now approach their research team on even terms as one concerned with self-preservation rather than self-destruction. Their project had obviously to do with the systematic reduction of what *we* would call the *farm* population and the simultaneous preservation of what we would call "agricultural economists." It requires a bit of getting used to, but I must ask you in reading the remainder of my report to bear it constantly in mind that "prairie dog" means what you have been calling "farmer"; and that "black-footed ferret" means what you have been calling "agricultural economist."

On the following day, I met with the leaders of their research team, Dr. Nosegay, a heavy-set, graying, well-groomed animal who seemed accustomed to authority, and his assistant, Dr. Baldsnatch, a slightly built and rather distracted beast, with sparse and matted fur, who seemed accustomed to Nosegay's authority. Nosegay spoke at length and ebulliently of their efforts, which he had

guided for almost two decades, ever since his predecessor had been eaten (while off duty) by an agricultural economist. Indeed, Nosegay admitted that their efforts had been almost too successful—so successful in fact that they had begun questioning their own statistics and some of their earlier preconceptions. He claimed that since 1930 the number of prairie dogs had been reduced by more than half; whereas the black-footed ferret population was not only being conserved but was clearly on the increase—in the past decade the net annual increment to the black-footed ferret population had been at least one hundred and fifty. The success of their dual and seemingly conflicting programs seemed almost too good to be true.

Nosegay again acknowledged the anomaly of their overly successful efforts, and spoke candidly of their uneasiness. Apart from his inbred scientific skepticism, which alone would require careful double-checking and painstaking re-examination, there was always the threat that a too-successful program would be phased out, conceivably even before he reached retirement age. "A boon-doggle would afford me greater personal security than this prairie doggle," he quipped, to the appreciative chuckle of the ever-alert Baldsnatch.

Resuming his normally serious demeanor as if his chance *bon mot* had been a hiccup, Nosegay proceeded to review their scientific premises as though searching for some flaw. He spoke now at some length:

We know a great deal about the prairie dog. He is monogamous, yet he is the most prolific species of his genus. Breeding takes place within the burrow, and is probably chiefly nocturnal, although there is some indication of "nooners." He is a sociable creature, possessing a carefree attitude verging upon irresponsibility. From our standpoint the chief problem arises out of his tendency to overgraze. Under our existing land use practices some prairie dog control is essential. We do not completely understand his ecosystem, nor can we afford to await such understanding. Those who babble about the balance of nature simply do not understand the alternatives. This rodent control is not an evil undertaking; it is amply justified in economics—and in fact without any control our very survival would be in jeopardy. We wish simply to reduce the prairie dog population to a level consistent with our needs and activities. We were very heartened, I might add, when the national prairie dog secretary—one called Orville Freeman—spoke of the prospect of a prairie dog population as small as one hundred thousand. We would settle for that figure.

Of the black-footed ferret, on the other hand, Nosegay admitted that they know much less. This species—the one we call agricultural economist—they have not had so much opportunity to study. Sightings of black-footed ferrets amongst the prairie dogs had become increasingly rare as early as 1940, and they had then begun to evince concern for the survival of the species. According to Nosegay, the black-footed ferret is slick, elusive, and furtive—in marked contrast to his prairie dog host who is open and amiable and provides an easy subject for study. Nevertheless, they felt certain that the population was on the increase, and given the fact that the host population was declining sharply, they had been intensifying their studies of black-footed ferrets.

The largest single project in this investigation was just going into effect as I was visiting with them on the Oglala reservation, so I decided to stay on a few

days to await the results. They had learned that a meeting of the Western Black-footed Ferrets Association was scheduled to be held in Tucson during July, and Nosegay had conceived a plan whereby Baldsnatch might slip into the meeting unobserved, thereby perhaps unveiling some of the mystery of their seemingly perverse proliferation of recent years. It had been acclaimed a major research breakthrough to have discovered the assembly place of so large a group of these furtive creatures, and their research headquarters was electric with excitement over the prospect of a successful infiltration. Preparations for the infiltration had been tedious and costly—they had burrowed all the way from White River, South Dakota, to Tucson, said to be the greatest engineering feat since the removal of London Bridge to Lake Havasu. The black-footed ferrets were evidently unaware of the existence of the burrow and Baldsnatch had been in training to enable him to tiptoe the last four hundred miles to escape detection. Little as Baldsnatch relished the prospect of his superior earning more kudos, he was nevertheless caught up in the ingenuity and derring-do of the scheme.

Baldsnatch was given a festive sendoff dinner of bromegrass and hairy vetch, then the inevitable subdued tension settled over the village as there was nothing to do but await his report for three interminable days. His ultimate return was greeted with joy and relief—the contents of his briefcase were foremost in all minds, but out of consideration for his exhaustion it was determined to allow him a night's rest before hearing his report.

The South Dakota prairies sparkled in the morning sun as we foregathered atop the chief cluster of mounds to hear the eagerly awaited report. It had been agreed that Baldsnatch would present a précis of his findings in the form of a brief chronicle of the meetings he had observed. This plan evolved out of a conference in which he had intimated some startling conclusion, and had also argued that his research methodology might be revealed en passant if he could present an uninterrupted report, with probative questions to be reserved. The general air was one of levity which tended to obscure what seemed a rather ominous tenor in Baldsnatch's intimation of a startling conclusion. Nosegay had even punned about "ferreting out the facts" as he introduced Baldsnatch, and this had evoked the official titter.

What follows is not the verbatim report, but the essence insofar as my somewhat rusty shorthand could capture it. Baldsnatch is the narrator.

I was able to attend the meeting of the Western Black-footed Ferrets Association completely unnoticed. I made notes at all of their sessions, but this report is confined to the more significant of their general sessions which I attended throughout.

The first major paper (1) had nothing to do with black-footed ferrets, nor was it delivered by a black-footed ferret. The speaker was easily identifiable as a sure-footed ferret, a species which preys upon a much wider variety of host than just prairie dogs, and is in fact rarely observed in prairie dog towns. I learned nothing at all about the black-footed ferret from this paper.

The second paper (2) had ostensibly to do with black-footed ferrets, but was delivered by a pussy-footed ferret who obviously didn't know anything about black-footed ferrets. This species (the pussy-footed ferret) preys mainly upon small songbirds and eggs, and is generally avoided by other ferret species. I could not account for his presence at the meeting,

particularly in light of the poor attendance at his talk and the generally apathetic reaction to it. Our earlier studies have suggested, however, that the ferrets practice a peculiar custom of honoring speakers who say the least, and I suspect that this may be a case in point.

The first day was a total disappointment. The purpose of my infiltration was to help resolve the puzzle of the rising black-footed ferret population, but I had heard nothing either by or about the black-footed ferret. The second day's program started out just as badly with a session related more to city rats than to any other rodents (3); but I became very excited when I read what the topics of the next session's papers were to be. Each of these topics seemed to be right in line with some of our hypotheses about their puzzling explosion in the face of diminishing food supplies.

You will recall that we have hypothesized that the black-footed ferret may have altered his dietary habits, finding something else to his liking as the prairie dog supply decreased. The paper which was to deal with improving nutrition (4) I fully expected would shed some light on the hypothesis. Again, however, I was doomed to disappointment, as no reference at all was made to the nutrition of black-footed ferrets.

My enthusiasm to hear the next paper was undiminished, however, as it appeared certain to go to the heart of the puzzle. We have long recognized that a particular group of the black-footed ferrets living in the intermountain region differed in one salient characteristic from other black-footed ferrets; to wit, this group is polygamous whereas all the others are monogamous. What excited me now was that they had billed a polygamous black-footed ferret to speak on the subject of population policy (5). Herein could well lie the solution to our enigma—if they had turned their population policy over to the polygamous subgroup, it could well account for the startling increase in their numbers which has been observed. By the time this speech was over, my disappointment had turned to despair—for this also turned out to be a non-black-footed ferret speaking on problems remote from our interests.

During the afternoon there were discussions by peripatetic ferrets of the problems they encounter as they range beyond prairie dog villages into foxholes, ground hog holes, and so on; followed by some learned papers (6) on burrow beautification, but still no sign of a black-footed ferret and no (7) hint of their survival formula. My curiosity was momentarily aroused when one speaker began to talk of field-burning, but it quickly became apparent that he wasn't taking a new approach to prairie dog capture, as I had hoped, but was off onto another burrow beautification tangent (8). He was followed by a muskrat talking about water (9), of all things, when we have long known that the black-footed ferret abhors water. Two full days had now passed and I had seen no black-footed ferrets at their own association meeting. I double-checked all the signs and read the program announcement again for some indication that we may have burrowed into the wrong meeting; but this was unmistakably the meeting of the Western Black-footed Ferrets Association.

I slept fitfully that night in the air-conditioned Ramada Burrow, sorting over our years of painstaking research, seeking some clue to the mystery of these meetings. At one point I stalked stealthily through the burrow, guessing that perhaps the real meeting of black-footed ferrets was taking place nocturnally while the diurnal diatribes were some kind of decoy to put off any possible intruders. But while I heard and saw much of interest as

I tiptoed through the labyrinthine corridors of their Ramada, I heard and saw nothing of black-footed ferrets.

I arose with a heavy heart to attend the last morning session, contemplating the failure of my mission. I strode languidly into the assembly hall, where the meeting was already in progress, and surveyed the audience half-heartedly, less in the expectation of sighting a black-footed ferret than to satisfy my premonition that none would be present. There were none. On stage some sugar-footed ferrets were giving instructions on how black-footed ferrets could coat their feet with sugar also (10)—but none were there to heed the advice. As I listened disconsolately, sorting over the events of the last three days, an awesome, yet somehow beautiful, and now inescapable truth gradually dawned upon me: *THERE ARE NO BLACK-FOOTED FERRETS; THE BLACK-FOOTED FERRET IS EXTINCT!*

We had clearly been duped, for all of our statistics on the black-footed ferret had been compiled by the black-footed ferret associations, yet here was the annual meeting of one such association with no black-footed ferrets present. The little rats had obviously cracked the genetic code and while the prairie dogs on which they used to feed were disappearing, they were busily mutating into all manner of ferret except the one that their association was named for.

Baldsnatch had completed his brief report and stood ready for questions. All eyes were on Nosegay, who at the onset of the report had radiated good will and confidence, but who was now ashen, trembling, and seemingly speechless. His statistics had been destroyed and his "successful program" of black-footed ferret conservation lay in shambles. At the very best he might still claim credit for the prairie dog extermination program, but the conservationists who had lionized him would surely wreak a fearful vengeance—Baldsnatch would be the hero, would probably have Nosegay's job within a month, whereas at a minimum he would get the conservation post and a larger budget than Nosegay's.

In a faltering voice Nosegay now sought to have Baldsnatch repeat his conclusion so that it could not be misunderstood—but Nosegay could not bring himself to utter the word "extinct," and hence never completed his question.

Baldsnatch supplied the word for him, then reaffirmed his conclusion, adding almost casually that there might be a sole survivor amongst the species, as there had been one rodent present at Tucson that might possibly have been a black-footed ferret. Nosegay exploded at this cavil. He had always been impatient with Baldsnatch's pettifoggery, but now he was enraged at the sight of the man still quibbling in the full flush of victory.

"Either you saw a black-footed ferret or you didn't," he thundered, "you don't understudy me for twelve years and *not* know a black-footed ferret when you see one!"

Baldsnatch replied with characteristic humility, "Well, sir, I could have sworn that this *one* was a black-footed ferret. He looks and acts just like one, and he has a name typical of the black-footed ferret species—his name is Stubblefield. But he's not called a black-footed ferret by the other ferrets—they call him a *blacklisted* ferret.

"It seems, sir, that once several years back, Stubblefield, who was then a true blackfoot, fell asleep while the pussy-footed ferret was making a speech. The

other ferrets noticed this, and were sore offended, for they always looked forward to speeches by the pussy-footed ferret—he never had anything to say, and in ferret land it is a mark of great distinction to make a speech when you have nothing to say; they elect their presidents for this quality and bestow all their honors upon speakers who say nothing. So Stubblefield was transmogrified, if you will, from black-footed ferret to blacklisted ferret. As I say, he looks just like a black-footed ferret, but he's not viewed as such by other ferrets, nor is he permitted to play the role of black-footed ferret."

"Do you mean," said Nosegay very slowly, knowing full well now that the answer to one simple question would settle forever the issue of whether the black-footed ferret was indeed extinct—"do you mean that Stubblefield *no longer eats prairie dogs*?"

"I'm afraid that's just what I mean, sir," said Baldsnatch with almost a trace of sympathy as he watched the last ounce of hubris drained from his erstwhile browbeater, "he's not a true blackfoot because he no longer eats prairie dogs."

"How does he survive?" Nosegay inquired automatically without a trace of interest.

"I can't say for sure, sir—I inquired and got an answer but I don't know the meaning of the reply—it's some kind of ferret language we've never decoded—they call him a 'used car salesman.'"

CITATIONS

*Papers Presented at the Western Agricultural Economics Association
1970 Annual Meeting, Tucson, Arizona, July 19-22, 1970*

1 Emery N. Castle, Oregon State University, "The Role of the University in Contemporary Society."

2 Roger W. Gray, Stanford University, "Agricultural Economics: An Orientation for the 70s."

3 Elmer J. Moore, U.S. Agency for International Development, "Economic Development and the Conquest of Poverty: An Overview."

4 Masao Matsumoto, U.S. Department of Agriculture, Economic Research Service, "The Role of Education in Improving Nutrition."

5 B. Delworth Gardner, Utah State University, "Toward a Population Policy in the United States."

6 Rollo L. Ehrich, University of Wyoming, "Toward a Theoretical Framework for Economic Development," and

John L. Fischer, University of Arizona, "After the Green Revolution, What Next?"

7 James H. Zumberge, School of Earth Sciences, University of Arizona, "The Need for Environmental Planning: An Overview," and

Joseph C. Headley, University of Missouri, "The Distribution of Costs and Benefits from Environmental Protection."

8 Frank S. Conklin, Oregon State University, "Environmental Quality Problems: A Case Study of Field Burning in the Willamette Valley."

9 Charles V. Moore, U.S. Department of Agriculture, Economic Research Service, "The Economics of Water Quality Control."

10 Raymond E. Seltzer, Agri-Research, Dunlap and Associates, Inc., "Training Needs as Viewed by a Management Consultant," and

Dean Hubbard, Kimbell, Inc., "Training Needs as Viewed by a Businessman."