

GRASS-CUTTING RESEARCH: A SYMBOLIC CASE STUDY IN RESEARCH FUNDING

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En este estudio de caso satírico el autor plantea un conjunto de reflexiones acerca de las políticas de financiamiento que las instituciones públicas tienen con respecto a la investigación en Ciencias Sociales. Por ejemplo, el autor afirma que los investigadores en una democracia deben educar a la opinión pública acerca de la necesidad de apoyar investigaciones de alta calidad. Cuando esto no se da, cuestiones políticas determinan las prioridades antes que el sentido común o la necesidad científica.

The following satirical case study of a government supported program of research was conceived during a concert by a well-known pianist. In the region in which the concert was being given, there was no hall suitable for a concert of such quality. The performance was given in a large athletic arena, despite the acoustical characteristics of such a facility. As the author tried to ignore the sounds and listen to the music, he reflected on other incongruities. Eventually ghosts of past research supported by public funds began to haunt him. The fictitious story that follows is partly a summation of those disharmonic thoughts, and is considered in terms of development of public policy for research support by governmental agencies in a democracy. It is the responsibility of researchers and scholars in a democracy to educate the public about the need to support high quality research activities. When this responsibility is not met, political issues can become more important in determining research priorities than common sense or scientific necessity.

Cecil was moving his lawn when suddenly his self-propelled gasoline-powered mower stopped. It would not make a sound, nor move. But worst of all, it would not cut grass. Cecil, not one to get involved with mechanics, telephoned a duly certified and licensed lawn mower technologist. After several tests the specialist diagnosed the machine officially as broken. When the diagnostic evaluation had been completed, the lawn mower technologist accidentally scratched his finger on the carburetor linkage. This made him angry and he hit the machine with his rubber mallet. Immediately the lawn mower started! The specialist thought that he might have made an important discovery in the treatment of broken lawn mowers and rushed back to his office to prepare a paper on the phenomenon for presentation at the next meeting of his professional organization.

At a nearby university Professor Stopgap reviewed the technologist's article about the broken lawn mower with interest. He noted several problems with the report. First, since only one lawn mower was considered, generalization to other lawn mowers would be ill-advised. Second, only a rubber mallet was used for the treatment. Would a steel hammer or the palm of the hand be similarly effective? He set out to do an experiment on a sample of 60 lawn mowers selected at random from the population of grass cutters and brought to a major repair center in a suburban mid-western town. He called in a consultant, Dr. Test, a licensed expert who certified 51 of the machines as truly broken. The remaining nine really only needed to be oiled and were therefore eliminated from the study. The 51 broken lawn mowers were randomly assigned to three groups of 17 lawn mowers each.

One group was hit with a rubber mallet, the second with a steel one. The third group was flailed with the palm of the experimenter's hand. Seven of the malleted group, five of the steel-hammered group, and one of the palmed group were working by the end of the experiment. Applying the χ^2 test with 2 degrees of freedom, Stopgap was able to report that treatment was not independent of being broken or repaired by the end of the experiment at the .05 level of statistical significance. He concluded that the "mallet" treatment was the most effective.

By this time, the legislature, several private corporations, and a few consumer groups were becoming aware of the innovations being suggested in the field of lawn mower repair. Consumer organizations from the grass-

growing regions were applying particularly strong pressure on their representatives in government to further this research and to provide legislation enabling citizens to take advantage of the method at a price that every lawn owner could afford.

The Legislature responded with a new research and regulatory agency within the Ministry of Agriculture to be entitled the National Institute of Grass (NIG) with an initial funding of 155 million dollars. NIG was charged with establishing standards, and organizing and administering the country's massive research and development effort regarding the reduction of the effects of broken lawn mowers, roto tillers, spreaders, back hoes, etc., upon the nation's grass. The first year's funds were used entirely to help set up the new agency. Funded with \$68.5 million for the second year, NIG was able to finance \$1.5 million in research projects at two of the most prestigious universities. And additional \$4 million was used to develop a Center for Applied Lawn and Mower Therapy (CALAMAT) in the middle of the country to which people could send their broken lawn mowers for evaluation and treatment. It was widely recognized that the \$4 million was the absolute minimum the center needed to operate, and represented only administrative costs. An additional \$12 million would be requested the following year so that a staff could be acquired which would actually see lawn mowers. The \$63 million remaining in NIG's second year budget was for normal operation of the agency including expenses for staff, physical facilities, and a computerized random-project-generating system which was devised by the Government Accounting Group (GAG) as a method of randomly setting research priorities.

By this time universities were offering undergraduate and graduate level training programs in lawn mower beating. There were three professional journals on the subject and several newspapers carried "mower therapy" columns. One column, called "Dear Anna" was known for its humanistic approach, and advocated talking to the mower as it was being slapped so that it would realize it was being hit for its own good. Another writer avoided particular theoretical perspectives, preferring, in his own words, "the eclectic orientation".

People began to show up across the country complaining of smashed and destroyed law mowers which were only broken before they went into therapy. Moreover, a number of people were beginning to apply other approaches to repairing lawn mowers. For example, a farmer in the back country of Australia found that water in the gasoline would prevent his mower from operating. An engineer in Canada noticed that by properly setting the gap in the spark plug on his lawn mower he kept the mower running with fewer vibrations. And an executive from Norway wrote in an article printed in a popular magazine that his lawm mower worked better when he avoided the rock and stones in his lawn. Moreover, students and private researchers were beginning to investigate the design and operation of lawn mowers. Naturally, they had to work without the benefit of funding for their research because NIG was only chartered to support beating broken lawn mowers.

By the third year of NIG, the public and the Legislature had become upset with the actions and policies of NIG. Besides, the director of NIG was considered socially different by many powerful people in Capitol City because he had gone to a public university and he did not play polo. They also suspected that he was allergic to grass. It was generally felt that the NIG concept had not brought man any closer to a better understanding of his lawn mower. Some realized that basic research would be needed to increase the fund of available knowledge before the dynamics of the lawn mower could be fully understood. However, that was expensive, not widely appreciated politically, and therefore not very popular, so it was unlikely that basic research would be supported. The basic researchers in the lawn mower field were not demanding support anyway. They were so used to working on their own time, under poor illumination, in the back of laboratories, garages, and basements, without funding support, that they were not expecting funding.

Finally, the Ministry of Agriculture issued an RFP (Request for Proposal) titled: "The Demise of NIG". It asked for proposals from interested bidders on the dismantling of NIG. Experimental approaches were welcome. There were seven thousand responses of which 4 were ultimately funded. As a result NIG was dismantled four different ways at a total cost of \$127.5 million.

Some cutting conclusions

This fictitious saga of lawnmower research can serve to illustrate several points about public funding of research in psychology in a democracy. First, psychologists must recognize that such noble considerations as common sense, scientific curiosity, and the need for better theory do not always enter into the development of programs for funding research. Second, the story showed that only a small portion of the total amount of money appropriated for research may actually be used to support research. Finally, the story illustrated that the academic community should not consider itself totally blameless in the way research is funded.

Among the major influences on public funding of research is public opinion. This gives society an opportunity to have its needs considered by scientists. But scientists must recognize these influences and understand how they work in order to insure the health of psychological research. Bevan (1980) has pointed out that scientists are typically skeptical about the ability of the lay public to understand science. He traces this to early traditions established in Europe, principally England, Holland, and France in which scientists and some benefactor or patron, usually the King, supported research for the public good. That is, the research was expected to provide knowledge which would automatically be beneficial. Thus, responsibility for the orderly progress of science rested with the government or King providing the funding, and the scientist overseeing and directing the research for the good of society. This Cartesian, or

Baconian view of science as a cooperative effort between scientists and government in the public interest is not realistic, according to Bevan (1980). In modern democracies, governments are controlled by elected officials who respond to science in the ways that they perceive the public wishes in order for them to remain popular with the public. In the United States, for example, Senator William Proxmire has publicly given "Golden Fleece" awards to scientists whose work he had determined to be wasting public funds. This campaign has made him enormously popular in some quarters, but has not been popular with scientists or research institutions (see, for example, van den Berghe, 1979; Proxmire, 1979).

It has been argued that society can move to control research through legislation (e.g., Atkinson, 1977; Glazer, 1978; Muller, 1953; Start, 1975; Walker, 1969). Further, Bevan (1976), Atkinson (1977), and Eysenck (1978) have urged psychologists to be more understanding of the social context of their research. In addition, Atkinson has told psychologists to try to present themselves to the public as being interested in society's problems, and to avoid becoming associated with sensational or faddish innovations that may tarnish the reputation of the profession. (One would presume battering broken lawnmowers might be just such an innovation.)

A second point raised by the story focuses on the relatively small part of the research funds that are actually spent on research. Often a large portion of these monies are used to support complex governmental agencies which then channel the remaining funds to selected research activities (see, for example, Stivers, 1973). Actually the problem is more complicated. Research funds are also often diverted to support training or other non-research activities and programs for political or other reasons (e.g., Mason & Denton, 1979; Wise, 1976). From the point of view of the researcher, it might seem wise to reduce the layers of research bureaucracy. However, this would not be popular because jobs would be involved, and more significantly, the system would be more difficult to control politically.

The lawnmower story was not written to argue in favor of theory-oriented over applied or decision-oriented research. According to Eysenck (1978), the most pressing of society's research problems are psychological in nature, and concern such areas as education, industry, mental health, and criminality. Finding solutions to these problems is made more difficult by the lack of dependable theory and scientific knowledge in these areas. Since these problems will not go away until satisfying scientific solutions can be found through pains-taking, careful, and systematic research, applied research becomes essential.

Even scientists can become discouraged by the time and effort required to develop significant scientific contributions (Jackson, 1977). For that reason, scientists and psychologists should be able to relate at least a portion of their work to the needs of society (Glazer, 1978). This support of field research should not be confused with the current ecological validity arguments (e.g., Dibbs, 1979). The position taken here is that whe-

ther the lawnmower is beaten in the sterile laboratory setting, the maintenance shop, or in the backyard, the silliness of the procedure remains evident. Thus, unless psychological and behavioral science researchers are able to make the public aware of the social needs and political realities of research funding, meaningful research may be slowed by manipulation of resources toward more popular, but scientifically valueless, research activities.

Behavioral scientists (eg. psychologists, educational researchers, etc.) find themselves at the valve through which scientific knowledge in their fields passes on its way to the public. By their writings for popular audiences, their public appearances, speaking engagements, and so on, they are in positions to influence public policy about what they do. Not only can they make the public aware to some of the more promising avenues of scientific research, but they can also refrain from supporting some of the less promising ones which may have more popular social support. For example, Professor Stopgap could have ended the whole episode sooner if he had been able to judge the worth of hitting broken machines to make them work.

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