Accommodation or participation? Communication problems

Helga Vierich, *International Crops Research Institute for the Semi-Arid Tropics, Ouagadougou, Upper Volta*

If communication were simply a matter of talking, this paper would not need to be written. However, everyone is aware that problems of communication plague people who come from the same culture and speak a common language — even people who have lived together intimately for years. When scientists with Western training attempt to exchange information and ideas with farmers in the Third World, they confront a profound communication gap. This gap is all the wider for being deceptively easy to bridge on occasion. It is a gap not of language per se but of culture (Lee 1950; Hall and Foote Whyte 1960; Bohannon 1966; Lee 1969a). The gap also exists between the various scientific specialties, for the concepts, methods, and language that lend to each discipline its special strength also frequently block communication between disciplines. The communication problems between disciplines may be even more serious than those between farmers and researchers because of rivalry, especially in these days of limited funding. When professionals fail to communicate effectively, they do not respect each other's theory and methods, and I think there is scant hope that they will communicate constructively with farmers.

Sources of confusion in communications result from people's failure to distinguish between stereotyped and spontaneous behaviour; group and individual behaviour; ideal and real behaviour; and folk vs scientific descriptions and analyses. I have focused on how these affect communication between farmers and researchers and between researchers from different disciplines.

Farming-systems research differs from previous approaches, such as dependency theory, diffusion, and farm management, generated by economists to deal with Third-World subsistence production (Eicher and Baker 1982) in that it centres on two notions:

- That the farm comprises numerous subsystems, economic and social, that are integrated into a village-level system. As the system is too large and too complex to be studied by one discipline alone, farming-systems research ideally involves multidisciplinary teams.
- That farmers and researchers can work together in testing and developing improvements in technology. Ideally, this partnership operates in a context in which the researchers understand fully the particular farming systems.

Communication between scientists of different disciplines and communication between farmers and researchers are both critical to the success

of the approach. Farming-systems projects usually move through several stages: baseline research to identify major constraints to productivity, development of technical proposals to relieve the constraints; exploration and testing of improved technology. If the technology proves promising under indigenous conditions, it is referred to national extension services with recommendations about its appropriate use. Throughout, communication between researchers from different disciplines is as essential as communication with farmers.

Each specialist views the system from a different perspective and can contribute to the whole picture. But all the specialists must work together. In the beginning, the social scientists collect and analyze data; even within the social sciences, however, the different specialties have divergent perspectives. For instance, an anthropologist and economist working together are likely to derive a more accurate, comprehensive picture of the farming system than would either one working alone. The data collected by the social scientists allow one to identify the problems that can be addressed by plant breeders, agronomists, veterinarians, or other agricultural specialists. In other words, the types of data to be collected and the stages of the research determine when a particular specialist should be involved.

At each stage, the researchers must communicate with farmers. Baseline data cannot be collected without their cooperation, and their input is critical in the identification and elimination of constraints. The understanding of farmers is essential to successful development of technology.

Stereotyped vs spontaneous and group vs individual

The differences between stereotyped and spontaneous behaviour are closely related to the differences between group and individual responses and behaviours. Stereotyped responses are most common when people are in groups and can be most pronounced when two or more ethnic groups are interacting. Although people commonly think of stereotypes as images that one group has of another, such as the Hollywood-created stereotype of North American Indians, research indicates that people often act out the behaviour expected of them.

In all cultures, some behaviours are immediately recognized as role playing. In the West, each profession tends to be associated with a particular stereotype, and even the word "professional" implies a particular role. The ability of an individual to slip into the appropriate behaviour is one of the most admired qualities in Western culture, and a person can be ruined by a single "unprofessional" performance.

Farmers, too, when dealing with researchers, speak and act out publicly defined roles. Within their culture and community, they also have to make and maintain reputations. The answers a farmer gives to an outsider's questions in public are likely to differ from those provided in private.

The distortions in communication caused by role behaviour in the context of a single culture and ethnic group pale when compared with those in the context of multiple ethnic groups or social classes. Some of the strongest behavioural stereotypes are associated with ethnic differences, particularly when each ethnic group plays a different role in the economic life of a community.

During my fieldwork among farmers and hunters in the Kalahari of southern Africa, I worked among two different ethnic groups: the Bushmen and the Bantu. The former are primarily hunter–gatherers and stereotyped by the Bantu as poor, lazy, crafty, and generally inferior. The Bushmen, meanwhile, consider the Bantu farmers to be greedy, cruel, and wealthy. Although the economies of the two groups differ, they overlap: the economy of poor Bantu is like that of Bushmen: they gather wild plants, hunt, and work for the Bantu. Some poor Bantu even assume Bushmen identity, marry into Bushmen communities, and generally are accepted as Bushmen. By the same token, Bushmen can "become" Bantu, although this is rare because it involves amassing livestock and investing considerable capital to become a successful farmer.

When I began to gather data on wage and in-kind labour in agriculture, I was told that hired labourers were Bushmen and that Bantu never worked for other Bantu. Later, I began to notice that a number of Bantu families were being "helped out" by other Bantu who were called visitors. In fact, Bushmen employees had essentially the same arrangements as Bantu "visitors" — both a daily payment (usually food and lodgings) and a final payment (part of the harvested grain). Hired crop work was so thoroughly identified with the Bushmen that Bantu who did this kind of work consistently denied it, claiming rather to be visitors in the household of their employers. Only after some months did these "visitors" admit to me privately that they were "nothing but Bushmen" because they were doing the same kind of work (*majako*). Although, at the outset, "visitors" claimed a distant geneological tie with their hosts, for many, the "visit" was the first time they had met one another.

A rapid survey by someone unfamiliar with these interethnic relations would have given a totally false impression. In fact, a rapid survey might not even have revealed the presence of two ethnic groups: the Bushmen almost always try to pass themselves off to visiting Botswana government officials as Bantu, as they see this as the more desirable identity to have when dealing with the Bantu-dominated bureaucracy. When white visitors arrive, even the Bantu don leather clothing and claim to be Bushmen because they know Europeans like to take pictures of Bushmen and buy trinkets from them.

That there are some ethnic groups stigmatized so completely that they conceal their true identity in the presence of outsiders would be relatively unimportant in farming-systems research if access to resources and status were not divided along ethnic lines. In Africa, at least in rural areas, land has traditionally been controlled by the dominant group in the territory. Thus, a minority ethnic group might find that they can survive and participate in society only if they assume the ethnic identity of the dominant group. In Upper Volta, for example, in an ICRISAT study village of Mossi, some members are from another tribe. The difference in origin is at the root of several long-standing disputes, including who has the right to assume public offices such as chief, master-of-the-land, chief experimenter, organizer of ceremonies, and master-of-granaries.

In the ICRISAT Sahel villages, there are complex relationships between four different ethnic groups: the Mossi, Fulse, Fulani, and Rimaibe. Mossi farmers have migrated to the Sahel from the overcrowded Mossi plateau and have gained access to land through Fulse chiefs (or land masters). They

could have asked the Fulani chiefs for land but may have avoided doing so because the Fulani, even today, consider all the terrain not occupied by the Fulse to be alienable if a Fulani has need of it. Curiously, as the Mossi ethnic group is dominant in Upper Volta, and prominent in the government and civil service, the Fulse have begun to say that they are Mossi. The two groups at times intermarry and may be merging. Meanwhile, the Rimaibe, who were originally servile communities of farmers under the domination of the Fulani, do what they can to claim Fulani identity, especially in seeking employment in Ghana and Ivory Coast during the dry season. Since the 1930s, they have also begun to acquire cattle — an activity previously prohibited by the Fulani — and a number have taken up the lifestyle typical of affluent rural Fulani, living in conical huts near the encampments of their former masters.

When I began my fieldwork in this area, it took me a week before I realized that I was interviewing Rimaibe and not Fulani. Having read literature on the Fulani's origins, I was becoming discouraged by the discrepancies between what I had read and my own field notes. The latter indicated that the population was at least partly composed of former Mossi who had either fled the French or had been brought to the area as slaves by the Canton chiefs in Djibo. Their responses to questions regarding farming and livestock tended to be in terms of Fulani norms, which are rarely attained, except by the more affluent Rimaibe.

These examples indicate that:

- The results of rapid surveys must be regarded with caution, especially as a basis for identifying major constraints within a farming system, planning appropriate technologies, and distributing resources;
- Involving farmers in group discussions is not the most effective way to elicit their views about new technology, their problems, or even their agricultural activities; and
- Selecting sample groups of farmers for individual follow-up is best left until the major divisions within the community have been defined on ethnic or economic grounds.

The ideal and the real

Rules and action do not always coincide. Every community has its rules — culturally prescribed behaviours — and these define tradition. The rules and traditions are information economies (Beals 1967). In African societies, they are controlled by tribal elders; in the West, by parents; schools; professions; and radio, television, as well as other media. The economic and social lives of all people are, to some extent, conducted according to the rules.

Researchers who want to work with farmers usually begin by learning the rules governing traditional agriculture, asking, for example: When should one prepare a field, plant, weed, harvest? How should the hoe be used? How deep should the seed be planted? How many seeds should be used in the same pocket? How far apart should the seeds be planted? How often must the plants be thinned? When should the fields be cleared of crop residues? When should new fields be cleared? When should manure be applied? The list goes on.

When they have gathered the rules, do the researchers know what people are doing? The answer is no. They have learned what farmers think they should be doing. Like any set of conventions, agricultural traditions are variously and individually interpreted and applied.

A study of the difference between rules (ideals) and behaviour was done by Rada Dyson-Hudson (1972) among the Karamojong of Uganda, pastoral peoples who raise livestock. If asked, they would say that men and boys herd cattle; women and girls work in agriculture.

Dyson-Hudson worked with the Karamojong for 3 years and found that this statement was not accurate. Although the women cleared the fields, men accounted for 35% of the labour in planting sorghum and fully half of the labour in planting millet. In weeding also, men and older boys accounted for about one-third of the labour, especially on millet fields in the bush. Men accounted for more than half the labour during the harvest.

Dyson-Hudson observed (1972:46):

> quantitative studies of actual behaviour patterns . . . revealed . . . important differences between self-image and behavioral reality. Only by focusing on the actual behavior patterns were we able to appreciate the complexity of . . . sexual division of agricultural labour activities. . . .

She also noted that male participation in farming was highest in households with few cattle. Thus, I believe that the Karamojong expressed not what most people do (derived from an average) but rather what most people would do if they were rich enough. The norm as presented to outsiders is skewed toward the real behaviour of wealthy and successful Karamojong: the good life, Karamojong style.

This is not that strange. If Americans are asked to tell an outsider what is the essential way of life in their country, they gloss over the vast variations in income and lifestyle and concentrate on an ideal account of what most Americans would consider to be "the good life." Most people in a culture do not actually know the details that go into the whole picture. They tend to describe two things: their own life and the ideal or model way of life in their culture. Asked by an outsider, most hesitate to discuss their own life because it is too personal or embarrassing. Besides, they are being asked to represent their culture. Thus, one could ask everyone within a culture and arrive at nothing but a version of "the good life." Getting at reality requires careful observation and detailed inquiry into the economic affairs of individuals.

Ideals such as "the good life" are part of the cultural traditions of all peoples. The traditions are distilled accounts — the essential behaviours and knowledge guiding each member of a particular society. They change as people change the way things are done. But changes in tradition lag behind changes in practice.

The flexibility to accommodate changes in what people do is essential to every people. Each culture has its experimenters, its radicals, and deviations from the norm are tolerated, even encouraged, to some degree. If societies were to stifle all experimentation and innovation, they would die out. So it is with agricultural traditions. Researchers should expect to find variations in practices and should keep in mind that they are dealing with an evolving and dynamic system. How often and in what ways actual practice deviates from

traditional practice are good indicators of stress. When farmers encounter difficulties with which their traditions cannot cope, they begin to experiment. The scientist can learn much about the constraints and stress within a farming system by following the lead offered in farmers' own experimentation. It is in these areas of difficulty that farmers will be most open to any new ideas and outsiders' suggestions and will participate most eagerly in researcher-introduced projects.

Traditions do not hang together in shreds and pieces; they are woven together by a set of explanations. In science, the explanations are called theories (Kuhn 1971); in nonscientific settings, folklore or folk science.

These frameworks of explanation or paradigms are more than explanations, they are *conceptual* tools, organizing the very perception of information. Human beings, more than any other species, are the product of their cultural education. Recent research indicates that children learn their social and physical environment not by a slow, continuous accumulation of knowledge but in a series of stages linked to their growth and mental development. At the end of each stage, according to Piaget (1960:139), there is a "crucial turning point . . . which affects the complex of ideas forming a single system . . . in this there is something comparable to the abrupt complex restructuring described in gestalt theory. . . ."

In adulthood, too, peoples' perceptions are governed by the conceptual universe in which they live. Changes in the conceptual universe do not apparently occur through the accumulation of new information but rather through the kind of sudden "complex restructuring" described by Piaget and exemplified by the behaviour of scientists who must adopt a new theory. Throughout history, there have been reports of the crises that scientists face when they recognize anomalies in their data that cannot be explained by their current paradigm. Kuhn (1971:122–123) observed that these:

> crises . . . are terminated, not by deliberation and interpretation but by a relatively sudden and unstructured event like the gestalt switch. Scientists then often speak of "scales falling from the eyes" or of the "lightening flash" that "inundates" a previously obscure puzzle, enabling its components to be seen in a new way that for the first time permits the solution. On other occasions the relevant illumination comes in sleep. No ordinary sense of "interpretation" fits these flashes of intuition through which new paradigms are born.

If, in fact, paradigm-learning involves the restructuring of perception, it is probably not under voluntary control. Neither are gestalt switches. For example, in experiments where people were fitted with inverted goggles, they went through a crisis initially because they saw the world upside down but felt it right side up. Then, abruptly, their brain "adjusted the picture" and the whole visual field flipped over. Learning a new paradigm is like learning a new language. To be really comfortable within a language, people must internalize it and stop translating.

Every culture has a unified set of explanations (the paradigms) that provide coherence to people's perceptions and communications. Language is one obvious subset, but language alone does not constitute a person's paradigm. People who share the same paradigms but speak different languages can readily read translations of each other's literature, whereas

people who speak the same language and live in the same culture but have different paradigms often cannot communicate at all.

Major scientific advances probably seldom cause paradigm shifts among the general public. Even with mass education, it takes many generations for fundamental ideas such as the germ theory of disease, evolution, the theory of relativity, to penetrate the whole society.

Systems of explanations in agriculture and animal husbandry are no exception. Nor is the organization of economic life: social scientists often talk of the "idea of money" lagging behind the introduction of money and its general use, and children must be trained in the properties of money, first through the use of the piggy bank then their own bank account.

The paradigm or framework should not be confused with the information upon which it is based. Modern agricultural practices may be adopted without their underlying paradigm, even if the scientist or extension officer thought he or she "persuaded" farmers to try the new practice on the basis of its scientific explanation. For example, sheep farmers in the Andes have to some extent adopted the practice of docking the tails of their sheep. This practice was explained in terms of improved hygiene and better conception rate: the tail of the sheep did not accumulate feces and bacteria and did not get in the way when the ram mounted the ewe. However, the Andean shepherds who adopted the practice apparently did so within the framework of their own system of explanations. The folk explanation for docking is in terms of calming unruly sheep. The people believe that if a sheep is left with its tail intact, the tail will somehow compete for nutrients with the rest of the anatomy, and the sheep will grow thin and weak. The result of this particular system of explanation is that docking is sometimes done after a sheep becomes unruly, or sickens, rather than just after birth as the veterinary services propose. Docking seems to have been confused with castration. The Andean peasants do not have a germ theory of disease with which they can connect docking to less dirt to less disease. So they apply a theory familiar to them from another context in which a similar operation is involved (C. McCorkle, personal communication).

In Upper Volta, ICRISAT staff discovered recently that farmers in one of the study villages were using potent herbicides along with recommended insecticides in their grain storage. Why? They had been using insecticides in the stores for at least 10 years and had introduced herbicides when the cotton company's extension agents convinced them to use both chemicals in the cultivation of cotton. The powders, like powerful potions in folk medicine, were thought by the villagers to have magical qualities that protected plants and grain from harm by evil influences such as insects, spoilage. Like the native medicines, they were accepted as cure-alls, or, in this case, protect-alls. So the herbicide left over from the cotton spraying was being mixed with insecticide and used in the grain stores.

Folk vs scientific explanations

Many of the pieces of information that farmers have are similar if not identical to those upon which scientific explanations are based, and farmers are able to share and exchange these pieces with an agronomist, plant breeder, or veterinarian easily and with a minimum of confusion. Confusion

Scaring the birds from the sorghum fields: the simplicity with which the gap in culture can be bridged at times can lull researchers into thinking they understand farmers

arises when the scientists assume that farmers understand why the practices work.

The power of scientific explanations is that they are usually based on methods of investigation that systematically link facts. Modern science was developed to cope with the ever-growing body of information made available by technological advances in data gathering (telescope, microscope, tape recorder, camera, stethoscope, x-ray films, etc.).

For example, when someone is ill, relatives may say the cause is witchcraft. A doctor trained in Western medical science will diagnose malaria. The explanation offered by members of the sick persons' own cultural group is based on "folk science" or folk systems of explanation, whereas the doctor's explanation is offered on the basis of the information and explanations derived from experimental medicine.

Similarly, a visitor to the tropics who comes down with chills and fever may announce: "I think I have a touch of malaria" only to find out from a doctor that the "touch of malaria" is in fact the flu. The visitor has arrived at a "folk" explanation.

There are two pitfalls created by scientific explanations:

- They are sometimes evoked without adequate investigation; and
- They sometimes lead scientists to ignore the value of traditional practices for which folk explanations are inadequate.

A number of studies have shown that, despite the inadequacy of folk explanations, the practices may be quite sound. Finding the scientific rationale for traditional practices has recently become popular (Codere 1950; Leacock 1954; Harris 1959a, b; Rappaport 1966; Lee 1968, 1969b, 1973; Gross and Underwood 1969). Perhaps the best known example is

Marvin Harris' treatment of the "myth of the sacred cow" in India. He concludes that the taboo against the slaughter of cows makes sense in view of their production of oxen that are critical to Indian agriculture, their production of milk and dung, and their ability to convert marginal grazing resources into products useful to the human population (Harris 1971:571).

> When hunger stalks the Indian countryside the slaughter taboo helps peasants resist the temptation to eat their cattle. If this temptation were to win out over religious scruples, it would be impossible for them to plant new crops when the rains began.

On the Mossi plateau in Upper Volta, people can be found gathering the old fallen sorghum and millet stalks and burning them during the months preceding the rains. They call this the "cleaning of the fields." In some areas, the practice is a ritual, but, in the ICRISAT study villages, people offer no special reason for the custom. Rather than condemn the practice as useless or as a waste of potential mulch, one could search for a scientific explanation of the benefits. For instance, by burning their stubble, people may be inadvertently killing insect larvae and eggs or fungal spores that are dormant in the dead plant material throughout the dry season. These would otherwise infect the new crop.

Implications for dialogue

When researchers ask farmers questions and get meaningful answers, they forget that the farmers do not share the same paradigm. The farmers have their own way of organizing reality (Kaplan and Manners 1972:22).

Furthermore, the farmers may have learned, from previous exposure to other researchers, extension workers, and other farmers, the fundamentals of the model they assume the researcher expects. Thus, they filter their answers through the fabric of information they have, even though the result is an imperfect translation of the way they understand and do things. Meanwhile, researchers may well attempt to do the same thing: they filter their questions through what they think is the folk or indigenous system of beliefs.

When preparing and testing survey instruments, researchers should review all available literature about the people to be studied so that their sampling procedures and questionnaires take into account ethnic groups, social classes, political organization, indigenous economic practices, and systems of access to basic resources. In this way, they can minimize sources of confusion arising from stereotypes.

If they interview people, they should verify the statements by direct observation and by complementary data collection (use of regional statistics, measurement of crucial variables such as changes in body weights, units of measure in transactions, use of aerial photographs, soil surveys). This approach ensures that field data reflect real rather than ideal behaviour.

They should assemble translations of the folk-science explanations specific to each area of team inquiry. In other words, the ethnology of the farming system should be researched, including indigenous practices of plant breeding and selection; experimentation with new varieties and technologies; soil classifications; economic exchanges; long- and short-term reciprocity; etc. The roles of large-scale economic activities such as ceremonies, work

gangs, systems of tribute, institutions of clientage, land tenure, institutions regulating disposal of grain and other goods, and investment and long-term planning should also be translated and their effects on farmers' management practices assessed. Thus, confusion arising from poor translation of folk into scientific explanations can be avoided.

Models of the overall farming system should be based on analysis of data that are most likely to conform to what farmers are actually doing and on testing of scientific hypotheses concerning this behaviour. This step ensures that beneficial practices are not disregarded simply because the folk explanations for them are inadequate.

The data collected during baseline surveys can be used to test many of the hypotheses and should provide a clear understanding of the most pressing constraints on the productivity within the farming system. In most cases, these will relate to the problems suggested by the farmers, although the scientists' analysis may produce explanations that the farmers were unable to provide. At other times, the farmers may stress problems that are not borne out by analysis.

When the technical problems emerge from the analysis, the researchers can focus on those that they might help to solve and that are recognized by the farmers.

The farmers and the appropriate technical scientists can then begin to work on improving existing technology. During this process, the farming-systems team will expand, and new members should be provided with background on the farmers' world view. If at all feasible, the testing should fit the farmers' own system of farming, breeding, husbandry, storage, cooking, and experimentation. Thus, for example, tests to be managed by the farmers could be designed to conform with the way the farmers have usually done their own experiments. Finally, the researchers should get together regularly, perhaps weekly or monthly, and make formal presentations on their methods and progress.