

anything to change Filipinos in fundamental ways, nearly all of them felt deeply changed themselves. In the end, the problem of cultural imperialism was resolved for most volunteers who became convinced that their personal development had been more markedly affected by their encounter with Filipinos than the development of their hosts.

CONCLUSIONS

The interpretations and conclusions reported here are based on reports, letters, and observations, not on an elegantly designed research effort. Effective and lasting change cannot be judged, to say nothing of measured, unless visits are made to the barrios long after the volunteers have gone. The volunteers delivered many messages through new channels concerning change and observed Filipinos participating in what appeared to have been new activity leading toward development; but most volunteers learned through considerable pain that neither messages nor channels constitute communication, and participation may not signify lasting change.

With these qualifications in mind, the three major conclusions suggested here are:

1. A person-centered approach to change, while varying in importance from country to country and with respect to different goals, was of unusual significance during the first two years of the Peace Corps' Philippine program because of the low level of change-readiness of barrio hosts, the Filipino emphasis on personalization, and the relatively unstructured role of volunteers.
2. Acceptance of Filipinos as persons was probably the single most important factor in facilitating mutual change between volunteers and hosts in the barrios.
3. Although genuine mutual friendship was often a precondition to effective change, other factors, not inconsistent with a person-centered approach to change, were also shown to be important in facilitating change. These included: effective role definition and communication of that definition; skill in focusing task goals; mastery over job skills; and effective location and assignment of volunteers.

16. GREGORIO M. FELICIANO AND JUAN M. FLAVIER

STRATEGY OF CHANGE IN THE BARRIO— A CASE OF RURAL WASTE DISPOSAL

This case study of the introduction of water-sealed toilets into a Philippine barrio recalls a statement by Dube in his chapter analyzing the gap between awareness and adoption in Indian villages. "Although through communication the village people may acquire additional bits of information, they may not be able to relate them to any of their felt needs," he said. "Water-sealed latrines . . . have been demonstrated to the village people often enough, but a serious and sustained effort has not been made to convince them as to why these should be adopted in the villages." This is precisely where Feliciano and Flavier began in the case they report in the following chapter. Communication had been tried, but it was ineffective. They had to look behind the communication and answer two questions: (a) how could the innovation be modified so as to fit into village customs and capabilities? and (b) how could a felt need for it be awakened in the village people?

Thus, as in the Chinese case reported by Worth, Dr. Flavier in his Philippine village was studying *change* rather than *communication*. It was necessary to have a workable blueprint for change before he could know what to communicate. Not until he had found what form of innovation would be acceptable, and how to arouse a felt need for it, was he in position to turn loose the multiplicative powers of communication on an adoption campaign. How he found the answers to his questions, and tried them out, is the subject matter of this fascinating case.

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pendence on the government, a false sense of security from diseases due to relatively widespread vaccination (of smallpox), indifference due to superstition and long-standing traditions, low income, and other socio-cultural delimiting factors. But the above four factors were singled out by PRRM because of their bearing on the redesigning of a toilet which would, they hoped, avoid the objections of the farmers and the barrios. This started off a series of test-designs.

DESIGNING A NEW PRODUCT

In five years of designing and pretesting in the barrios, the PRRM came out with a cheap, simple, concrete water-sealed sanitary latrine. It is basically a cement structure fashioned with the aid of a wooden duplicable mould. The finished product simulates the commercial types, and the same principle of water-sealing is used. One part cement and two parts mixed gravel and sand are used, reinforced by green bamboo splits. (Experience has shown that dried brown bamboo absorbs water and induces cracking of the bowl after a few days, whereas the green bamboo does not absorb water and remains intact for 20 years or more.) One bowl can be completed by a farmer in 24 hours, and the cost is very low. One bag of cement is used for five-to-seven toilet units.

Concrete was chosen as the appropriate material, because farmers associate durability with cement. Further, a survey showed that one aspiration of farmers is the ownership of a concrete house. The toilet partially fulfills this desire for a concrete structure.

At present, the program has emphasized the construction of moulds, by which bowls may be mass produced in the community at half the price. This reduces expense and also provides a toilet bowl that is both sanitary (because water-sealed) and attractive.

The toilet designed is a squat type and provided with a footrest as a self-teaching guide for the user. The footrests are deliberately spread out to simulate a jet plane, because this construction now has a special appeal to farmers. It is directly cradled on the ground and leads to a pit via a conveyor tube, also made from the cement cast. The pit is therefore some distance from the toilet bowl, and one can use the toilet without fear of falling through.

Since the bowl is water-sealed, the odor is funneled out through a bamboo tubing, and cleanliness is maintained by pouring one liter of water after use. It is estimated that with a family of five adult members, if there is allowance for two extension pits around the original pit, it takes 20 years for the system to go out of commission. Even

then the concrete toilet would be still intact and could be reinstalled elsewhere.

With the acceptable design meeting the objections to smell, high cost, bad appearance, and the danger of falling through, PRRM found that toilet construction in the barrios was accelerated. It was easier to convince farmers to construct toilets without the objectionable features. The finished bowl was so attractive that it was a source of pride and provided builders a sense of accomplishment.

OTHER PROBLEMS OF ADOPTION

However, there was a lot to be desired in terms of proper use, or any use. This was exemplified by a farmer who bought two toilet bowls for his farm lot, but used them as flowerpots decorating the pathway leading to his house. A study was made of the practical approaches used by Rural Reconstruction Workers (RRW's or barrio level multi-service workers) in motivating farmers to build toilets. High-pressure salesmanship was successful in encouraging construction. For example, one RRW went to visit a farmer and convinced him he needed a toilet because he had a pretty daughter who had to go to the bushes at night and might become a prey to snakes. The farmer built a toilet, but only the pretty daughter was allowed to use it. Another RRW succeeded in inducing a farmer to build a toilet by telling him that an American visitor was coming to the barrio the next day. Afraid to lose face in case the visitor would desire to use a toilet, the farmer built a beautiful sanitary water-sealed toilet, literally overnight. To his eternal happiness, the visitor really looked for the toilet and the farmer was able to show his main attraction with great pride. (The act of looking for the toilet was of course suggested by the RRW to the visitor.) But two weeks later, when we had occasion to visit the same toilet, it was closed. The explanation was that it was being reserved for future visitors to look at.

These experiences underscored the inadequacy of health education and the misdirection of the motivational forces used to convince the farmer and his family. There was need for an approach which would not only motivate a person to build a toilet but would also make him and his family use the latrine properly. This should be based on a sound knowledge of its importance to their health.

A STUDY IN A BARRIO

The junior author decided to live full time in the barrios in an attempt to understand the situation and to evolve a system. He studied

farmer to understand prevention unless the curative aspect had been somehow hurdled. But from the point of view of the approach being evolved, we were interested in collecting the expelled adult worms of the *Ascaris* (measuring about 8 inches long and the diameter of a pencil). These worms were then placed in a huge container, and the sight of several hundreds was enough to drive home the message. Bunge's solution was used to keep the *Ascaris* worms alive for a week, as their movements made the impact more dramatic. Unfortunately, the worms died after a week and they were not as attractive. A propeller is now being devised to agitate the container and cause movement.

COMMENT

PRRM experience has shown that disease prevention is only one of the common ills of barrio life, the other three being poverty, illiteracy, and civic inertia. Moreover, PRRM has demonstrated that these prevalent weaknesses have to be faced and met simultaneously if a real change is to be effected. A compartmentalized approach cannot produce lasting and desired ends because these four interlocking problems mutually react upon one another in the life of the people. Thus, since we want to introduce sanitary latrines for better health, this facet must not be singled out but always dealt with in relation to the other fields of livelihood, education, and self-government. Unless a real increase in income for sufficiency of food, shelter, and clothing is effected, sanitary latrines become luxuries beyond immediate needs. Reading materials for the new literates include health education ideas geared to their level of understanding. Action programs cannot be dictated, and only activities promulgated by a sense of need and mutual agreement can be successful.

This is why—although a big part of the PRRM work in the barrios is devoted to the fundamental health education campaign, foremost of which is use of sanitary toilets—this is done with full consciousness of the human factors in the processes of change and also the related problems of poverty, illiteracy, and civic inertia. All of the RRW's of the movement have been trained in this spirit to introduce the water-sealed toilet. To date, some few thousands have installed this PRRM type of latrine, and it has become a popular mark of the movement. Present figures show that 64.5 per cent of all homes in the PRRM-covered barrios (in varying stages of reconstruction) have sanitary toilets. A number of barrios in the later stages of develop-

ment have close to 100 per cent installed toilets. Barrio Tolungan has an 85 per cent figure. Preliminary resurveys on the incidence of parasitism show low recurrence rates (after three months), giving some indication that toilets are being used properly.

SUMMING UP

We can infer from the unfolding of the events of the study that the *dynamics of the process of change involve many factors*. In summary, we can say that some of the essential factors were the following:

1. The change must be an improvement over the old system. Here the barrio farmers had valid objections to the toilet design being introduced. It was only when a conscious effort to correct the defects was made that acceptance was accelerated.

2. The activity must be simple so that the farmer can understand it, economical so he can afford it, practical so he can utilize it, and duplicable so others can profit from it. Unless these basic requirements are satisfied, change is difficult.

3. People accept change they understand. This is illustrated by the tie-up of the need for a toilet to cut off the cycle of the worms. And this was made real by an association of the danger with the parasites actually expelled from their children. In fact, the choice of the *Ascaris* was deliberate since it is the biggest helminth and the most common parasitic infection. It could be seen—thus the idea could easily be grasped. When the connection of the worm and the toilet, and the inherent dangers, were understood, social action became spontaneous. This is very important, especially in the light of Kurt Lewin's pioneering analysis of the process of change (Lewin, 1958). Lewin suggests three phases: (a) unfreezing the present level; (b) moving the new level; and (c) freezing on the new level. The moving or working toward change is the difficult aspect, exemplified by the deworming efforts which included (a) clarifying the problem to the people, (b) deciding on a plan of action to solve the problem, and (c) transforming these plans into actual change efforts (Tiglaio, 1964).

4. The intelligent grasp of the situation is essentially based on a knowledge of the people's psychology, culture, and way of life. In the microscopic examination, the factor of curiosity helped motivate the people to submit fecal samples. When some had done so, others followed. During the mass meeting, the public statement insured partici-

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