CREATIVE THINKING IN ARCHAEOLOGICAL FIELDWORK

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As an archaeological student working in the jungles of Belize, I participated in the first season of a project excavating a site long abandoned by the Maya Indians. I also administered a questionnaire to the students and staff to determing their personal feelings about the project and their participation in it. I found that students and staff were enthusiastic about this project, many of them experiencing their first exposure to fieldwork outside the United States and to Mayan archaeology. They were eager to learn and to contribute to a better understanding of the culture they were excavating. All expressed pleasure at being a part of this investigation but some felt their abilities could have been better utilized, that opportunities to discuss ideas would have been beneficial, and that meetings updating the progress of the project were needed. I felt that some participants were expressing feelings of frustration and that in addition to providing the manpower to obtain artifactual material they could have contributed ideas in open discussions. These ideas might have suggested avenues of research which were overlooked. I feel meetings and discussions would have increased the overall success of the project and strengthened the feelings of self-value among the individual participants. This paper will examine the implementation of an educational program in conjunction with an archaeological dig which will provide the maximum ideational and empirical information for the project and assist the participant in exploring his creative thinking abilities.

The ability to think creatively is inherent in man. This goes beyond the formulation of a beautiful picture or a lovely poem (the tangible products of the creative impulse) into the realm of ideas. To think creatively is to problem solve--i.e., looking at enigmatic information, situations or physical substances (such as artifactual remains), viewing them eclectically and forming a synthesis or developing a hypothesis.

Can an atmosphere to promote creative thinking be experienced within the academic system? While in school, reams upon reams of facts are necessarily ingested then spewed out on tests and in papers. Although information is stored in the data bank of the brain, where is the student taught to productively and practically utilize this information while still a student? Is the student instead expected to synthesize and use such data when entering and coping with the "real" world?

Psychologist Richard Crutchfield (1965) bemoaned the fact that schools gave no direct and systematic training in creative thinking, other than a little logic or math. Transference of this training into other disciplines, he felt, was at best haphazard. He therefore developed an educational system for 5th and 6th grade children, which used a cartoon program to encourage them through detective work, ". . . to think creatively, to be inventive, to generate ideas, to form hypotheses, to be alert to cues and clues." This formed a basis in the development of the children's thought processes for tackling a problem, and showed that they could succeed by using their own ideas.

Where are the Crutchfields to invoke this on behalf of university students? There are opportunities for creative thinking in higher education if one is fortunate enough to meet a professor or two who encourage innovation rather than imitation, but these opportunities are usually at the graduate level, on an individual basis, and not included specifically in the format of a class. If the student is to learn the practice of creative thinking, why not bring the experiences of life into the realm of academia? This could be done by including fieldwork in a non-academic environment away from school and from contemporary civilization (e.g., an archaeological dig) in the curriculum and stressing its problem solving aspects. On a dig, in addition to the fieldwork, dealing with the environment and adapting to it can provide the basis for innovation and a day-to-day opportunity to utilize information stored in the brain bank. In the Belizean jungle we had to build a walk to the creek to prevent slipping in the mud. Using only the sticks and stones at hand we did so. This was perhaps no great feat, granted, but it was one of many small ones, and one that certainly gave a few city dwellers a great feeling of accomplishment.

In pioneering a new approach to archaeological fieldwork, Alice Portnoy (1978) has introduced some interesting ideas. Her purpose is to develop ways of obtaining as much information as possible from an archaeological project. I share this desire and feel that her suggestions lend themselves to developing the creative thinking process. She begins by pointing to the fact that crew members spend more time in the field than do those in charge, who are frequently doing more supervision, management and administrative work than archaeology. This makes the project director dependent on crew members close to the pits for information. Therefore, says Portnoy, "It is . . . essential that we find ways to capitalize on both the background and the new experience of everyone in our projects, from crew members to principal investigator." The crew is exposed to environmental and ecological factors and experiences perhaps not unlike those encountered by the ancient culture being investigated, such as adverse weather and difficult terrain or even bathing in a creek and hunting wild game. These conditions and experiences, combined with the constant digging in forgotten refuse troves, leave impressions and generate thoughts concerning the methods for survival and cultural development used by the ancient inhabitants.

Portnoy suggests the following as a means of obtaining the maximum information from an archaeological project. Her program begins with intensive pre-field workshops which provide the participants with relevant cultural know-how and, during the fieldwork, a continuation of the workshops with talks by members of the project, visitors or consultants who may have special areas of expertise within the cultural region. Interspersed with these talks, open meetings are suggested to encourage the crew to record and express ideas and impressions of the former inhabitants. These include their adaptation to the environment, use of cultural materials, and methods of production. The participant is also encouraged to record his or her own behavior, as this may be relevant to that of the ancients. Discussions could suggest new items to be aware of, different methods of observation while digging or surveying, or new ways to examine the collected material. This process could trigger useful ideas to higher level staff and suggest research designs or testable hypotheses for future seasons or projects. Such encouragement would increase the personal satisfaction and productivity of all participants and could serve only to improve the overall project.

Finally, Portnoy suggests that information be obtained from all personnel by questionnaire and interview at the end of the project, that it be evaluated and suggestions made for administrative, technical and experiential improvements. This information could prove useful for future project planning.

During a three-month contract archaeology project in New Mexico which consisted of an intensive survey of 16,000 acres, Portnoy tested her methods. This project, she states, was unusual because it offered a pre-field workshop utilizing regional specialists. Alice wanted to devise a means of getting at that nebulous "experience" which participants express in order to maximize the information obtainable during the project since it was primarily a survey with little collection of artifacts and probably no digging. She suggests in her paper, viewing the archaeologist as a hunter/gatherer and eliciting his interpretation of the environment, his behavior in it and his adjustment to it. In her evaluation, she studied the questionnaires completed by the crew members; she reviewed their field notes; she interviewed all members of the project; and she used her own experience as project manager. Many of the thoughts indicated by the ten paid crew members could have been useful had they been raised and discussed during the project. Only a few of these ideas were expressed in the field notes and they were not in a usable form. Portnoy feels that with explicit guidance as she suggests in the previously stated methods, a great deal of useful information now being lost could be retrieved.

My recent correspondence with Alice Portnoy indicated that she is continuing her research and testing her methods. In a current field school she has presented her ideas to the students during the pre-field portion (one week) of the project. She has asked them to be aware of her ideas and to use them as explicitly as possible

during the field school. She states that the nine graduate and six undergraduate students are very receptive and cooperative. The effect of pre-field presentation of her methods will be compared with their introduction at the completion of a project.

I feel that Alice Portnoy's ideas are valid and testable, and I am delighted that she will be using them during a field school. I see them as definitely applicable to the archaeological field school, both as a tool for extrapolating information from the site and as a means of stimulating and developing an atmosphere for creative thinking. Such a training program is relevant not only to archaeology students, but to students of other disciplines as well. Students of geography, biology, political science, economics, art and computer science, to name only a few, should be encouraged to bring their backgrounds to bear on the evaluation of the cultural ecology and artifacts. This input would certainly add to the project and encourage interdisciplinary cooperation at the undergraduate level. It would also discourage the "tunnel vision" effect, namely, the tendency to view findings in the field from a narrow perspective. Input from those with diverse backgrounds encourages a broader view.

At the end of the dig in Belize, Central America, early in 1979, I had sixteen students and staff members who participated in the project complete a questionnaire. The primary focus of my questionnaire was to obtain information relevant to the improvement of the project in its future season. Questions were asked regarding likes and dislikes of the field school, interest in the culture, and general comments. The portion of the questionnaire relevant to Portnoy's suggestions and to education and learning will be examined.

The sixteen individuals were graduates with previous archaeological experience and one undergraduate. The staff was paid, the students were not. Thirteen members stated that archaeology was their current occupation or goal.

All respondents expressed an extreme desire to learn. This desire was particularly evident in three areas. The first was the area of planned evening presentations. To the project's credit, there were many talks, an average of one per week, concerning various areas of archaeology or related fields relevant to the site, in which the speaker, generally a visiting professor or Ph.D. candidate, had expertise. The group agreed that these talks were informative, and sixty-two percent wanted more than one per week. The second area relates to meetings held during the project; they were limited to business, job assignments and announcements. Thirty-one percent indicated a desire to also have meetings devoted to an overview of the excavation findings. Thirdly, forty-five percent mentioned their wish to be rotated from pit to pit on a regular basis in order to gain exposure to the diverse excavational experience offered by this project or to gain an overview of the site.

With regard to Portnoy's suggestions, although these participants were clearly experienced and had been offered the opportunity to join an exciting project, many still felt that they wanted to be more a part of it and expressed the desire to gain as much experience as possible during the field season. Adoption of Portnoy's suggestions would allow the members more self-expression during a project and thus greater satisfaction than that provided by standard fieldwork alone. Self-expression would not be limited to the students. The project leaders would also have the opportunity to discuss their ideas and to obtain new ones which might otherwise have been overlooked. The free exchange of ideas, without "one-up-manship," can be extremely enlightening and exciting and can produce a cohesiveness which stimulates productivity.

In this brief paper I have suggested that the encouragement of creative thinking should be an important ingredient in archaeological fieldwork, and that such experiential opportunities should be offered to students of other disciplines. A detailed program must be developed in a longer paper and tested in the field before these suggestions can be validated. If such development and testing are done and the methods introduced prove to be viable educational approaches, they could be the "shot in the arm" anthropology needs to build the discipline academically and to encourage its students and those in other fields to apply their knowledge in this educational experience. The process of learning to trust one's creative thinking, to trust one's own ideas, impressions and problem-solving abilities, could easily be transferred into real life situations, providing a strong motivation for recognition of the value of anthropology to education and to our culture.

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