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A metaphorical model of sacrament: Toward broader discourse in the teaching of science

Helgeson, Claire Rhea, Ed.D.

The University of North Carolina at Greensboro, 1988

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A METAPHORICAL MODEL OF SACRAMENT: TOWARD BROADER DISCOURSE IN THE TEACHING OF SCIENCE

by

Claire Rhea Helgeson

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Greensboro
1988

Approved By

David C Purpel

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APPROVAL PAGE

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9/20/88
Date of Final Oral Examination

Helgeson, Claire Rhea, Ed.D. A Metaphorical Model of Sacrament: Toward Broader Discourse in the Teaching of Science. (1988) Directed by Dr. David Purpel. 98 pp.

The concept of sacrament is examined as a perspective for evaluating curriculum and teaching. Specifically, this study proposes a perspective on college science curriculum and teaching and on the discourses used in teaching and learning the sciences. The first chapter tells two stories about routine scientific activity, one set in a college laboratory and the other involving professional marine biologists. These experiences raise the questions: what constitutes a full account of scientific work, and what conceptual framework and communal context would be adequate to the complexities of the experiences? Tad Guzie's model of sacrament (1981) provides a general introduction to the dynamic of sacrament and is posed as a preliminary context for understanding the experiences recounted in the chapter.

Chapter two introduces a phenomenological definition of sacrament which specifies location and function in a religious tradition. Although the concept of sacrament is broader than any specific religious tradition, the dynamic of sacramental living must be illustrated by referring to specific traditions and practices. Therefore, the study concentrates on developing a metaphorical model of sacrament within the context of contemporary Christian theology. The model derives from Sallie McFague's work on metaphorical theology (1982) and from the work of Paul Ricoeur (1977) and David Tracy (1981). It stresses the tensive, dynamic quality of sacrament which develops relationship between God and people and creates a context for congregational responsibility and work.

Chapter three examines the Christian liturgy of the eucharist and the faith and practice of Quakers who renounce liturgical and other ritualistic enactment. Both traditions are analyzed in terms of the metaphorical model of sacrament.

The conclusion relates the concept of sacrament, as developed in the model and demonstrated in the two traditional practices, to curriculum, teaching, and discourse; refers to a current course design in college science; and suggests future areas of inquiry.

Acknowledgements

This paper is for John Lamiman, Malinda Maxfield, and David Purpel, without whom it simply would not have been written.

In addition, I'd like to thank Mel Keiser, Carol Stoneburner, and Jerry Godard, who understood what I wanted to do, and David Helgeson, Louise Rhea, and many friends who supported me in faith, hope, and love. Thanks, also, to the Administrative Council of Guilford College, especially William Rogers, Samuel Schuman, Herb Poole, and Robert Williams for a semester study leave. And thanks to Henry Levinson and to my doctoral committee, Walter Beale, Fritz Mengert, and Svi Shapiro, whose varied minds and high standards haunted my imagination throughout my writing and not writing.

Special thanks to Ted Benfey, Dave MacInnis, Rusty VanPelt, Lynn Moseley and Sheridan Simon for sharing their labs and to Betty, Rip, and David Barstow, Jeff Johnston, and Rebekah and Livia Wade for sharing their houses.

For the privilege of genuine ecumenical conversation and study, I want to thank the mentors and fellows of the Coolidge Colloquium (Summer 1985) and Associates for Religion and Intellectual Life, who sponsor it. And I am thankful for Rockingham Friends Meeting.

Finally I want to acknowledge with respect and gratitude the influence of Jacqueline Ludel and of the late James B. Macdonald.

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INTRODUCTION

If a doctoral dissertation prepares the student for a certain degree of perspective and participation in a field, it may not be primarily because of the intrinsic value of the written work. The dissertation represents a process of self-defining and self-declaring which the student undertakes in the hope of becoming an identifiable and useful member of the thinkers, creators, critics, and teachers in her field. It establishes a point of entry, a "place" almost in the old rhetorical sense of a situation for argument from which to join the public conversation.

What I have found most demanding in the process is this: declaring my point of entry has meant explicitly and publicly relating my religious life and my professional life. While I have always known that my interest in curriculum and teaching sprang from my religious ground and have thought of my teaching work as ministry, I have treated that ground and motive as a private matter. However, in my doctoral work and particularly in preparing for the dissertation, I came to understand that it is impossible for me to engage in critical thinking and writing without exploring the religious sources and implications of my critique.

Consequently this paper is very different from any dissertation I might have written in my twenties or thirties, more usual decades for earning the doctorate. In my twenties my academic concerns were primarily literary and my concern with literature primarily aesthetic.

To gain perspective on reading and teaching, I studied literary theory, which has continued to provide a connection from decade to decade, a critical context from which I have approached other interests.

In my thirties I began to read more widely in the social sciences and to understand my own work in social and political contexts. I changed my focus in teaching and study from literature to rhetoric as I became increasingly concerned with the students in my classes for whom the power of language and the basic skills necessary for college study were hard to come by. Increasingly I focused on the connections between language and power, between language and the ability to create meaning, trying to relate what I had learned from literature and literary theory to the social sciences, to rhetoric, and to what I experienced as a teacher. Increasingly the pressure of my contact with students who did not fit smoothly into the pattern of academic life determined my choice of what to study and why.

When I had the opportunity to begin graduate work, I chose a program in education, hoping to study the relationships between language, learning, and the institutions of learning and to re-evaluate, in light of larger cultural, social, political, and intellectual contexts, the habits of mind I had developed in my liberal arts education and in my teaching experiences.

Because the program in which I enrolled encouraged interdisciplinary inquiry into education questions, I decided, at one point, on a short foray into a scientific approach to learning and language. But instead

of choosing a course in psycholinguistics or in the psychology of learning, I found a psychobiology class offered at a convenient time and location by an extraordinary professor who was willing to tolerate my tangential questions and my lack of prerequisites. If that class was a turning point in my graduate education, it was not because I gained a physiological perspective on my pedagogical questions--I did not. I discovered, in fact, that scientists of the brain and nervous system seldom apply themselves to the complex questions of learning which involve concepts of mind as well as brain. And they did not seem seriously concerned with the practical problems of people who have trouble learning certain things. The psychobiology class was important because it offered my first opportunity since undergraduate school in the fifties to participate in a college science laboratory. Although at the time I would not have used the term sacrament (except to myself) to describe what was missing there, that lab was the seed for this essay in which I acknowledge the religious basis of my professional life.

The experiences in psychobiology lab helped me focus my critical thinking about how certain conventions and structures of education prevent what Eric Voeglin has called "the process of reality . . . becoming luminous in the events of experience and imaginative symbolizations." Voeglin describes this process as involving "human questioning and seeking in response to a mysterious drawing and moving from the divine side."

> The forces of intentionality and mystery are not speculative assumptions and they do not operate as a blind a priori. They are experienced as moving forces of consciousness; and the experience can be symbolized . . . . Hence the process of reality becoming luminous is further structured by the consciousness of the two

> moving forces, of the tension between them, and of the responsibility to keep their movements in such balance that the image resulting from their interaction will not distort the truth of reality. (Voeglin 245)

But at the time I was not familiar with Voeglin's terms as I began trying to understand what I found missing. Then I may not have described the need I perceived in education as that of maintaining tension and balance between forces of consciousness, yet I find in notes from an early stage in my thinking this description which indicates the degree to which my concept of sacrament involved movement, relationship, and both an asking by people (Voeglin's "intentionality") and a divine offering and drawing (Voeglin's "mystery").

> In sacrament we ask for a relationship we feel ourselves to have been offered. That relationship can draw us toward the nature of the offerer.

So as I began thinking about this dissertation, I had in mind, first, that sacrament is dynamic and relational; second, that for me education is a profoundly sacramental endeavor; and third, that college science laboratories could be extraordinarily fertile places to acknowledge and nurture a sense of the sacramental. But I also feared I could not make the approach that directly without conjuring images of scientists as priests or of lab work as religious ritual. I doubted my ability to introduce my perspective of education as interactive religious living and as sacramental work. So I tried to approach the subject of what was missing in science labs from what I considered a more academically acceptable direction.

From my own professional camp I began thinking about how writing helps us acknowledge and nurture the process I experienced as sacrament. I focused on how the various modes of discourse are divided up among traditions and disciplines in such a way that writing in a particular discipline conveys not the full "process of reality becoming luminous" in the exercise of the discipline but a fragment of experience which from the perspective of the learner can appear to be all that counts in that study.

I began to imagine ways to incorporate a variety of discourse modes in the writing required in college science laboratories, and I spent time in college labs trying to determine how that could be done.[1] I even fantasized that the various modes might influence one another in such ways that writing about the experience of "doing science," about the results of that "doing," and about the possible significance of that "doing" in larger human and ecological contexts synthesized into a rich new scientific discourse.

However unrealistic may have been my rhetorical pipe dreams of a new scientific discourse, I found that many shared my concern about what, in the current conventions of education and scientific writing, scientists or students of science learn to convey about their fields. For example, Gerald Holton, introducing an issue of Daedalus in the late seventies, argued that contemporary scientists need to interpret scientific work for a wide and increasingly concerned public. Furthermore,

> . . . with the political process now entering into the life of the academy more and more prominently, it is doubly necessary that scientists and scholars be very clear about their intellectual ambitions, the process of discovery and its needs, powers, and limits. (Holton viii)

Yet he cautioned that to properly interpret a field the scientist needs not only professional scientific competence but also a grounding in history and sociology of science and an understanding of other tools and methods for achieving perspective. He noted the irony that while science is more compelling and central "both as a product and as process . . . " than ever before, few scientists are able and willing to interpret its larger aims.

> At the very moment when basic research in a great variety of fields is at its best by its own criteria, the whole enterprise is subject to doubt about its larger aims more than any time in the past.
>
> Where is the tradition of philosophically sophisticated scientists who share their views on the powers, limits, and Natural Philosophy element of the enterprise, readably and without condescension, addressing themselves to a wide public? One thinks here of Poincare, Mach, Hadamard, Einstein, Bohr, Schorodinger, Jeans, Eddington, Bridgman, Frank, Oppenheimer, to name just a few in the physical sciences. Until a generation ago, no one who claimed to be intellectually civilized would have dreamed of neglecting or turning his back on what these men were saying. They, in turn, saw it as their business to give a humanistically informed account of the claims, products, and processes of their work. (Holton vii)

In response to these concerns and their implications for college curriculum and teaching, I began an eclectic study of scientific discourse, investigating the history of writing in the sciences, how and when styles changed, and why current styles are what they are. I compared the writing required in science classrooms and labs with that practiced by working scientists. I sought the voices of those within contemporary science who shared my concern that a fuller story be told, a more complex consciousness of the scientific endeavor be recognized and created.

I discovered geneticist Barbara McClintock's explanation of her scientific process as a kind of "listening" which enabled her to write what one of her collegues describes as "the `autobiography' of every plant she works with" (Keller 164). In a field which seeks systematic classification she urged respect for the exception, the aberration, the contaminant, suggesting that difference be understood as "a principle of ordering the world" (Keller 163). McClintock's language reveals that intimacy, intuition, and personal attachment are part of her scientific work.

> I found that the more I worked with them, the bigger and bigger [the chromosomes] got, and when I was really working with them I wasn't outside. I was down there. I was part of the system. . . . I was even able to see the internal parts of the chromosomes -- actually everything was there. . . . As you look at these things they become part of you. And you forget yourself. (Keller 165)

McClintock's description is echoed in the remarkable book, An Imagined World, by June Goodfield which can be described as a dialogue between two women -- Goodfield, the interpreter, and an immunologist she calls "Anna Brito." Responding to the question of whether "the writings of scientists, as published in such prestigious journals as Nature or Science, in any way reflect the human values that underlie scientific invention," Goodfield writes,

> To this there is only one answer: a resounding no! . . . [T]he scientific paper not only conceals but actually misrepresents the individual human creativity which is its source. (218)

For over five years Goodfield followed Anna Brito's investigation of how lymphocytes relate to Hodgkin's disease. Together the two women tell an inclusive story about the process of discovery in science and about

the world of human beings and routines which make up what Brito calls "the fantastic infrastructure that we take for granted . . . "(xi) in scientific work. The book tries to convey complicated processes and interdependencies which make up a wide "river of thought and work . . ."(219). At one point in the dialogue Brito responds to Goodfield's speculations on the "scientific mind" and scientific method in words like McClintock's."

> If you really want to understand about a tumor, you've got to be a tumor. The wonderful thing is that if you read the early scientific papers of the Egyptians, and sometimes the Greeks, you know how they themselves actually felt. But as science developed, that changed. You look at a painting and you know a lot, at least you think you know a lot, about what is going on in the mind of the painter. But you look at a paper in Nature, and you know nothing.
>
> Are you satisfied with this? [Goodfield asks.]
>
> Not a bit. I want to change it. Why do you suppose I agreed to do this book? You would perceive all this if people really understood — really understood — what the scientific process is. (226)

Brito values the qualities of thoroughness and thoughtfulness in scientific writing and refers admiringly to a particular writer whose "fineness of mind" and individual vision are fully apparent in his technical essays.

At one point in the ongoing dialogue between the two women, Goodfield alludes to Kant's infamous image of the scientist putting nature on the rack. Brito recoils, developing in response the image of lovemaking.

> Here is a cell. It has been going round all the time, and nobody has taken any notice of it. Suddenly you fall in love with it . . . . Then you are going to have to go through an active process in relationship to it, and this leads to discovery. First there is the building up of attraction, and the object of your attraction eludes you. Then you must try to do things to gain its attention with your

> concepts. . . . So we try to get better and better concepts, trying to get to know the cell. (229)

Brito explains discovery as that moment when the concept can reveal the object of attraction, a climatic moment which she sees in "images of enthusiasm, innocence, freshness, and love. . . ." The process of turning hunches into concepts, "the gestation of an idea" results in birthing (230). Again her words are close to McClintock's.

> When I find that a lymphocyte has something on its surface, momentarily I am that lymphocyte. I, as a scientist, have the privilege of trying to identify in a conceptual sense, with trees or with insects or how insects identify with trees. The girl is not the external world of the boy who is wooing her; they are part of the same world, and they experience a moment of love and a moment of conception. Then they go through a moment of disenchantment. But it doesn't matter, because they have had children by then. (231)

Brito's imagery first relates her identification with the lymphocyte to nature's "identifications" such as camouflage and other symbioses, and she recognizes the creative, conceptual activity by which the scientist constructs and projects metaphorical identities in scientific thinking. Then, having invited a full play of meaning between the cognitive and the generative, she allows her extended metaphor -- courtship, conception, and birth -- to lead her, exploring its appropriateness, its capacity to reveal the quality of intimacy in her relationship with the thing she studies. Working like an artist, she takes verbal risks to tell a fuller truth about her work. It is a kind of writing which, according to Joyce Carol Oates, "will appear more and more frequently as scientists take on the language of poetry in order to communicate human truth too mysterious for old fashioned common sense," (Rueter 147) or conventional scientific sense.

Clearly women are making significant contributions to new language, new imagery and forms of communication in and about science. But the changes are coming from many different directions. Way has been prepared by the fresh perspectives on the epistemologies of science in work like Thomas Kuhn's The Structure of Scientific Revolutions or in histories such as Hugh Kearney's Science and Change: 1500 to 1700 and Caroline Merchant's The Death of Nature: Women Ecology, and the Scientific Revolution, which explore the influence of underlying imagery on scientific theory and practice. Sociology and social anthropology and, notably, Joseph Needham's great contribution to intellectual history, Science and Civilization in China, have opened cross cultural as well as historical comparison. Loren Eiseley, Lewis Thomas, Stephen J. Gould, and others have led the way in communicating the imaginative life of the serious scientist. Moreover, scientists are becoming literary students of their discourse. In Time's Arrow, Time's Cycle, Gould explicates key documents from the history of geology, finding the internal logic and the underlying metaphors, seeking "guidance and modern understanding from great arguments of the past . . . ." and experiencing the "simple joy" of studying the texts of great thinkers (16-18). In the process, he relates the influence of root metaphors in the history of his science to their pervasiveness and influence in other aspects of culture, particularly art and religion.

Scientists recognize that models, metaphors, and analogies as well as empirical, inductive processes and the language of mathematics are necessary tools for the ongoing vitality of science. It is crucial that students of science know what a metaphor or model is and what it is not,

the "radical disjunction between the way things behave and every way in which we try to visualize them . . ." (I. Barbour 158). They need also to develop creative imagination, the art of discovering "hidden likeness" (Bronowski 13), of taking creative leaps, through the exercise of imaginative skills such as metaphor making (Koestler, Gordon). Moreover, it is becoming increasingly clear to some members of the scientific community that integrity in scientific communication depends not on a particular rhetoric but on full consciousness of the roles and options of rhetoric in the creation of knowledge. The scientist cannot escape subjectivity and cultural influences but must learn to recognize self-involvement and appropriately use "linguistic self-references" (Bernhardt 175).

> A maximally objective science . . . will be one that includes a self-conscious and critical examination of the relationship between the social experience of its creators and the kinds of cognitive structures favored in its inquiry. (Harding 250)

Having worked on a proposal that certain kinds of writing done in response to college science labs can help students develop a fuller sense both of science as a liberal adventure and of scientists' responsibility to interpret their work in light of personal experience and broader human concerns, why then did I change my task to a direct examination of sacrament? The best way to answer is to say that I keep asking myself my motives. I asked what I wanted to accomplish by revising traditional practices in the teaching of science. I asked how my concern for this one area of the college curriculum related to larger questions about how we ground our choices of what to teach and how. Asking such basic questions, I realized that at root my motive was neither to promote the

liberal arts objective of fully employing multiple ways of knowing nor to promote responsibility defined in terms of particular political or social ideologies, although I certainly am in favor of free inquiry and human responsibility.

But my basic motivation is my belief in sacramental living, a context in which freedom is our ability to acknowledge both human limits and human possibilities in light of our relationship with God, and responsibility is the covenantal response to human limits and possibilities. In covenant and community sustained by radical and sacramental relationship with God, human beings are able to identify and take on political and social responsibility. We are able to take on what Jim Corbett calls the covenantal task: to live shalom into actuality, to hallow the earth.

> Individuals can resist war and injustice, but only a people can live shalom (harmonious community) into actuality. Everyone who chooses to serve must, therefore, discover a congregational place that permits personal integration into a covenantal community and that also integrates the community into a historically persisting covenant people. (185)

If my critical perspective is based on my belief in sacramental life and in education as sacramental work, my essay of self-declaration should be an attempt to explain, as clearly as I can, that basis. I have not left behind my suggestions for change in the writing required in science labs. This study both begins and ends with them. But the work on sacrament is a necessary step in my development as an education theorist.

The structure of the paper reflects, for the most part, my own process of exploring sacrament. I begin with two stories, both of which are about encountering, in routine scientific activity, experiences which

I think are best understood as sacramental. The first story, "The Cat Brain Lab," recounts the experience I have called the seed of this dissertation. The second, "Jackie's Whales," summarizes a story by cetologist Jacqueline Ludel, who was, in fact, my psychobiology teacher and who has recorded her work with two whales in an extraordinary monograph published in 1982 by the Guilford Review. Both stories raise questions about what constitutes a full account of scientific work. Both lead me to ask what conceptual framework and communal context would be adequate to the complexities of these experiences.

I find a preliminary approach to these questions in Tad Guzie's model for understanding sacrament in terms of what he calls "the rhythm that makes life human." Guzie shows how sacrament affects people and their experiences, integrating them into larger contexts through stories and community celebrations. The model provides a general introduction to sacrament as a dynamic involving both complex traditional meanings and the breaking, changing, or deepening of meaning.

In chapter two, I focus on clarifying the concept of sacrament. First I detach the word from its specifically Christian connotations by introducing the Encyclopedia of Religion's phenomenological definition. Broadly defined in terms of location and function in a tradition, sacrament "enacts, focuses, and concentrates the distinctive beliefs, attitudes, and actions of any religious tradition" (Jennings 504). Thus while sacrament is a religious concept, it need not be identified with a particular religious tradition but rather with a process by which people acknowledge the difference between the divine and the human and set in motion a relationship between them.

Although the concept of sacrament may be broader than any specific religious tradition, the dynamic of sacramental living must be illustrated by referring to actual practice. A broad-based comparative study of sacramental practices in a wide variety of religious traditions would be the ideal foundation for trying to understand education in the context of sacramental living, but that is not a study for which I am equipped. What I have tried to do is take a somewhat broadened perspective back into my own religious faith, Christianity. In the second part of chapter two, I conceive a model of sacrament based on the "metaphorical theology" of contemporary Christian theologian, Sallie McFague. Then, in chapter three I use that model as a way of looking at two traditions of Christianity which practice contrasting modes of religious expression and worship. In terms of my model both traditions are grounded in sacrament although one practices the conventional Christian sacraments while the other overtly renounces them. So while I am unable to provide a broad base in comparative religions, I am able to broaden the conventional Christian concept of sacrament in a way which may be provocative for ecumenical conversation as well as for revision in education.

1. Pervasive in my thinking about rhetoric have been the works of James Britton, James Kinneavy, and James Moffett. Toby Fulwiler's writing and workshops have also been an important influence.

CHAPTER I

The Cat Brain Lab

Jackie's Whales

"The Rhythm That Makes Life Human"

THE CAT BRAIN LAB

T.S. Eliot's fourth quartet evokes a journey to Little Gidding, the site of a 17th century religious community, a place, he says, "where prayer has been valid."

> And what you thought you came for
> Is only a shell, a husk of meaning
> From which the purpose breaks only when it is fulfilled
> If at all. Either you had no purpose
> Or the purpose is beyond the end you figured
> And is altered in fulfillment. (139)

He goes on to say that the traveler "would have to put off / Sense and notion" in order to enter the place in its true spirit (139).

I enrolled in a psychobiology class at Guilford College because as a student of teaching and learning, and specifically as a teacher of composition in college, I wanted to become a better reader of the physiological research which might bear on my questions. That was my conscious purpose. But by mid-semester when I was given my very own sheep brain to dissect, I was already edging beyond the end I had figured when I chose the course as part of my graduate program.

The sheep's brain was sitting there at my bench when I walked into the lab — an alabaster symmetry on a black tray. For a long time I simply looked -- we all did — as the instructor explained the difference between its size and shape and that of our own brains, the difference in texture between this preserved object and living brain tissue, and the specific tasks outlined in the laboratory instructions. That day I matched and adjusted book knowledge to hand and eye knowledge, melded

scientific and aesthetic appreciation, and, after dispatching the identifications on the worksheet, left the lab, generally congratulating myself and eager to share my experience with family and friends.

It was not until the next week, the week of the cat's brain, that I lost all hold of purpose as my hand plunged into the bucket of formalin to snatch my choice from the dozen or so floating cat heads. I pulled out one with a gaping mouth, a torn eyelid, and wild, wet yellow fur. For a crazy moment I thought to put it back and fish for a lesser terror, but whether I knew that each would have an equal measure or whether my old table manners were carrying me through, I plopped the flat of that neck, severed clean as nightmare, on my tray. In Eliot's sense I did not put off sense, rather I put it on with new intensity. I did, however, abandon notion. As I cut, dug, drilled, lifted, sifted, probed, and picked with delicacy and violence, I entered a state of concentration I had experienced before only in times of completely focused activity such as writing a poem or birthing a baby. What was going on here was not that exhilaration which can come from intense interaction with other people in the classroom or with individuals in conversation but a focus which froze time to the intricate carefully directed gestures and choices which would yield the particular spot of brain tissue I needed to locate. The last task on the instruction sheet was to search out each tiny bone of the inner ear, and only one person in the room summoned the finesse to lift out of the surrounding skull an undamaged cochlea. Late in the afternoon we crowded around her, tired from our individual efforts but moved to unity and respect by the exquisite, minute spiral there on her tray and by her painstaking.

Then we separated to prepare the assigned report, a response to questions and diagrams intended to reinforce the science of the experience and test the quality of our work. Finally, free to go, I was quieter than I had been after the sheep's brain, aware of feeling as if I were left hanging. I felt like an ellipsis. But it was days before the acute dissatisfaction and incompleteness hit me and I could acknowledge the combination of stimulation and frustration I felt. It took even longer to recognize my feelings as related essentially to other moments when I had approached a new level of experience, a threshold, only to find myself unable to assimilate and interpret. Because I was a teacher as well as a student I understood my frustration as an incomplete teaching/learning encounter, a moment in which the full potential for discovery and sharing was unrealized, a moment for which the cultural and pedagogical context was inadequate.

Gradually I tried to confront that frustration and my confusion of feelings and thoughts about the instruments, tissues, smells, textures, my clumsiness, and finally and most mysteriously my sudden skill and steadiness as the task narrowed to that curiosity and intention which obliterated every question except the focused question of the search. I realized that what I had felt must have been very close to what scientific attention is like. As the days passed that intense focus haunted me; I had passed without passage, without recognition or intention, into a state of mind which simply swept away my many unnamed questions and reservations. And the order of the day, the order of the lab, seemed, as I thought back, to encourage such an unspoken and semiconscious transition. If I wondered again and with new force about the justification of

using animals for research; if I experienced a new sense of my own physical vulnerability as my drill pierced skull bone, my scalpel incised transparent membranes, and my probe explored soft folds; if I realized a new intimacy with tools, a new delicacy of touch, a new pride and appreciation in the achievment of a fellow worker; if a maze of moral, cultural, emotional, and communal issues were alive to me in that afternoon and in the following days; I was being given every opportunity in the world to glaze over the experience.

I wanted something different. I wanted to express fully the scientific learning, the anatomy itself, and to formulate my own questions as well as respond to my instructor's. I wanted also to explore the speed with which my mind left behind its other attentions and objections in the pursuit of certain tasks. I needed to ponder and share the contrast between the beautiful sheep's brain, at once organic and abstract, sculptural, and that ball of horror -- fur, bone, and membrane -- from which I had extracted a similar organ, this one far from abstract, but, because of my involvement, my sense of likeness and vulnerability, more deeply beautiful. I wanted to note the uncompetitive pride and quiet sharing we felt in a fellow student's special accomplishment and, in contrast, my feelings of isolation and loneliness at family supper.

I knew I wasn't the only person who had been overwhelmed by the afternoon. But the students seemed to accept the routine reporting task and the code about what was and was not mentioned. And when I asked the professor, a friend and colleague, about the power of the experience and her highly selective approach to it not only in her subtle nudging of our

attention toward this and away from that but also in her design of the post-lab assignment, she understood me and did not avoid the question. She simply suggested that those thresholds were best left implicit and that the reporting was designed to direct focus to what was most salient for the student of the science: correct knowledge of physiology and the proper use of the tools and procedures of interpretation. In other words she did not avoid but she begged all my questions.

I did not know how to press the matter, to ask whether those important skills could be isolated from the overall experience of the lab, whether they were, in fact, the heart of her discipline, the starting place for the development of the scientist. While I understood the traditional division between classroom matters and laboratory matters, I sensed that the lab is the place of particular power in science education as it is in the professional practice of science. I knew that in lab, as much if not more than in the classroom, the student brings a consciousness and challenge to the study just as the study brings structure and challenge to the student. I knew that in science, no less than in literature, each new meeting of student and study is a potentially important moment of opening in the life of the discipline.

These specific questions about the lab led to more basic educational questions. Is it acceptable that educators in their presentation of a study or discipline introduce complex and powerful experiences only to dismiss those dimensions of the experience with which they do not choose to deal? What is the cost to human consciousness that we highlight and nurture only particular dimensions? What conceptual framework, what

educational context would be more adequate to the full complexities of an experience such as the cat brain lab?

JACKIE'S WHALES

The story of the cat brain lab and the purpose and questioning which broke from it pairs with another story, one which brings to symphonic realization the theme I heard that afternoon and in the days of confusion which followed. In 1982, the Guilford Review published a monograph by none other than my psychobiology teacher, Jacqueline Ludel. Entitled Came the Whales, it tells, first, of her work with a huge baleen washed up dead on a New Jersey beach. Then, in a second part, it develops more deeply the story of an injured pigmy sperm whale which she and other professionals nursed and, when he died, dissected. Ludel tells a story of scientific experience which exemplifies the kind of consciousness and communication I imagine possible in science education. As one reader praised the piece, "she has a connection to the physical world, and to the spirit through the physical world, and she has the language at her fingertips . . . ." That combination evokes the scientist's full heritage: disinterested inquiry through acute and systematic attention to the physical; connection, through that exact quality of attention, to the spirit, to what Ludel calls mystery, the profoundly experienced "unknowable" as well as that which is not yet known; and the ability to interpret, integrate, and communicate such experience, to make with language the third dimension of the scientific endeavor.

In the first story Ludel describes her approach to the great carcass of the baleen, "a grey mass . . . lying on its side, belly toward the beach, bumping about in the waves."

> I stood utterly still, growing roots in the sand. My eyes shifted back and forth along the 53-foot length of whale. I was trying to comprehend, to place this 60,000 pound monster within the context of my days. I was doing precisely what I had done when I first saw Picasso's "Guernica"; I was grappling with images that began within what I could understand but that exploded beyond what I could even name. (2)

Not only must she confront the boundary of life and death, and the mystery of "all that is incomprehensible, all that is alien,"(2) but also she must acknowledge her own and others' defensive reactions to mystery. Why, for instance, did onlookers mutilate the body of the whale? Why is this not an uncommon occurrence with beached animals? Why had she herself "tried to slaughter the mystery and . . . [would] do so again" (2)? These realizations bring her to a third: the ambiguity of motive behind naming and study.

> Mark and Martha were beside me. They brought books along and the three of us engaged in an ancient rite: we simultaneously acknowledged and subdued the mystery by finding a label for it. The label, finback whale, gave us comfort and power, as if to know the beast by a term it never knew made us wise intimates. (3)

Yet the next dawn she returns alone to approach both strangeness and odd points of connection -- the whale's elastic body was like the innertubes of childhood while the stench was a humiliating contradiction to her feeling of respect for what she had believed to be majestic. Ready to retreat in confusion, she is invited, by the Smithsonian scientist in charge of the dismantling, to stay and watch. "The prospect of seeing the beast flayed appealed to my strange mood . . . . I wanted restitution for the foolishness of having worshipped what was, after all, only an unembalmed corpse" (3).

Working with the scientists who took tissue samples and then, for ten hours, cut the enormous body into pieces which could be hauled away, she continues to experience the rush of sensation, learning, and imagination. She focuses on details such as the way the whale's muscles and blubber kept wearing down the edges of the flenching knives and the gore and filth in which the work had to be done. But in the midst of these circumstances she is again taken by mystery and unanswerable questions.

> What conditions had enticed or coerced or directed that ancient land dweller to abandon the earth? . . . How many billions of tons of krill does it take to grow a full-sized finback or blue whale, the largest mammal ever to have lived?
>
> What is it like to have an ocean for a home, with no walls or corners, but only the craggy sea bottom for a distant floor the penetrable surfaces for a ceiling? What must it be to feel, always about you, water moving, flowing or churning, rippled by another's passing, whipped into a fury up above by winds but forever calm below?
>
> And what had this particular finback known? What was the rhythm of its days? Were there fantastic sea tales locked forever inside its head? Were there memories of long migrations from polar feeding grounds to equatorial winter home? Had this one watched others struggle futilely, impaled on the shafts of harpoons? Had he heard the strange, lyrical songs of humpbacks, of killer whales. Did he know the tunes? (5)

The way Ludel tells this story confirms my sense of scientific experience as kaleidoscopic. Her narrative changes focus paragraph by paragraph, revealing shifts in perspective by juxtapositions which suggest but do not make explicit how the many dimensions of experience relate. Toward the end of the monograph she acknowledges as familiar to the professional "the state of mind that jolts back and forth between floods of feeling and dispassionate inquiry" (32).

She recounts what is shared and what she finds no context or form for sharing. At the end of the job the crew, herself included, eat

together, still stinking from the work and bound together by telling stories of work and whales.

> I did not ask my questions. I did not trust myself to do so. They were enmeshed in a plexus of emotions that threatened to leave me tongue-tied and shaking. They still are. No matter that the whale has been dead three years; the mystery it evokes is still alive, turning me toward wonder, toward awe, bringing trembling to my soul, making me relive that first profound meeting with humility. (5-6)

About a year later and after other experiences with whales and dolphins, Ludel is called by the Atlantic City Police Department for her advice about "a small live whale that was floating in the surf behind Convention Hall." Eventually the injured pigmy sperm whale is moved to a tank in the Coast Guard station. Ludel, at the time still relatively inexperienced in her work, tells with remarkable completeness the process of nursing the whale. It is a story involving, first of all, interaction of people with a creature and with each other because of their common concern. The whale's presence breaks down barriers. Ludel discovers that with him she is at ease: "We each welcomed the other's touch. . . " (11). She imagines the sea where he swam

> through a three dimensional matrix of life, the telltale sounds of others -- the snaps, pops, whistles, roars, thuds -- forever present. What must it be to know, always, who suffers and who sings, who glories and who dies for miles around. (11)

She and her fellow workers name him SP, and their work with him united and gentled them. "I was beginning to understand what the whale was teaching" (12). But as SP grows weaker his lessons are more demanding. Ludel experiences painful self-revelations and conflicts of motive. She admits the scientist's desire for special knowledge in exchange for

dedication: "I wanted SP to endow me with secrets." And she feels shame and rage at herself and the conventions of her work.

> This was no humble supplicant coming forth to ask, in trembling, the reasons why. This was a human being armed with pick and axe, with presevatives and dissecting pins, color-coded charts, sharpened probes, little knives, and magnifying glass, coming to dismember the mystery. This was a creature tormented by the unknown, ready to wring a comforting answer from the universe, no matter what the means, shattering rock, tearing roots from the soil, . . . caging life, even ripping open a cell, smashing its contents beneath a coverslip. This was one prepared to fragment any essence and then dignify the atrocity by christening a newly found structure or calculating statistical properties or heralding the minutia as if it held the course of the future; one who was willing, ah no, anxious, to twist and crumble whatever might yield an instant of transcendence beyond the terror of despair, carrying the soul away from the imponderable meaninglessness, randomness, finitude of being.
>
> I wanted SP to serve me but he refused. I was ready to release him, not because his dying required it, not because it would restore his elegance even in the course of dying, not because we had unintentionally interfered with the pattern of a life magnificently shaped by the course of evolution; I was prepared to release him in order to free myself from what he was forcing me to know in myself. (21)

Although the team fights for his life and experiences in the process the interplay of knowledge and ignorance, resourcefulness and helplessness, the whale dies, and those who have tried to save him stay on to do an autopsy, another dimension of learning in the science.

> Not only did our responsibility to SP extend beyond his life; we also needed to learn from the whale so that never again would we have to guess at a pigmy sperm whale's anatomy. (26)

In her account of the dissection, Ludel develops more fully the themes she introduces in the story of the baleen. Again, the way she tells her story is important, the way she juxtaposes the elements of care, skill, concentration, and plain exhaustion with "unscientific"

emotions and with experiences of the deepest mysteries of being. Here again her story must be told in her own words because it is the unique voice in the process which sounds the unity of the many kinds of truth being told in this story of science.

Having emptied the water from the marine tank, the team is ready to begin its task.

> I clumsily entered the tank, tape measure in hand, and began calling out the measurements Jim had specified, Martha Pokras kept the record: total body length--11 feet; maximum girth--6 feet; blowhole--5 inches by 1 1/2; height of dorsal fin--4 3/4 inches; exposed length of a tooth--3/4 inches; and so on. Knowing what would follow I dragged out the procedure. Bob joined me in the tank; the two of us patted and fondled the whale under the guise of data collection. It was our farewell. We closely explored SP's skin, noting scratches, blemishes, coloration, spotting a few nematodes that formed hard little bumps. We counted the teeth that studded the lower jaw and examined the sockets of the upper jaw in which they were sheathed when the small mouth was closed. We bent close to the eyes, seeing only our own images coldly reflected; there was no warmth of inner perceiving light. (27)

Again, frustration, filth, disappointment mark the work; the clues to causes of the whale's death are elusive, small.

> Using the rapidly dulling blades, we worked to loose the muscles from the bones of the spinal column and the ribs. I pushed my hand deep into the meat and started pulling backwards, trying to establish some firmness against which to cut. But with my hand gone from sight, plunged into the fibers that once created movements of the tail, I stopped, arrested by the odd sensation of warmth. The whale had not been dead long enough for its muscles to grow cold. I knew that; I would have predicted it if I had paused to consider it. But knowledge and experience are different universes. The warmth was an intimation of life. There was a horrendous, fleeting fear that we had pronounced death too soon, that we were engaged in vivisection. The terror was rapidly replaced by numb incomprehension: I did not understand what divided life from death. What, precisely, accounted for the change from perceiving eyes to mere reflectors? Why should the rich blood continue to run red with its load of oxygen when there was no longer need? Why was my warm body able to respond to a warm body that would never respond again? Does consciousness fade, ebbing slowly like the warmth, so slowly that

there is no sudden disappearance but a beginningless, endless, continuous process? Is death then an event, something that comes within a moment, or does its coming stretch forever through time.

I pulled Bob to my side and pressed his hand into the depths next to mine. The three of us—SP, Bob, and I--were linked together. The warmth SP still generated was greater than the warmth of our living hands. His heat was transferred to us; there was little we could give to him. Even in death, even filleted, our whale commanded more presence than we. The mystery was upon me again but, this time, there was no trembling. The mystery had always before brought me to the very lip of the abyss, a place where the footing was loose and I had shook as the earth beneath my feet broke free in little clods that tumbled into the darkness; now the mystery carried me into the pit. There was nothing to grasp; no stuttering steps could hold me at the edge. There was only the warmth radiating through my hand and the echo of a low moan...no other sound, no other sensation, no sight, and for a time, no I. There was not even the question why.

Finally I pulled back hard and saw my hand tugging at the muscle. I pressed my knife against the taut flesh and, with that, the surroundings were restored: Bob and Jay hard at work, the tank smeared red, Dick and Bill looking down at us, their mouths drawn in. The sun was suddenly intense, its light piercing, its heat nearly unbearable against my scalp. I moved to the hose and sent the cold stream over my head. I returned to the carcass and cut muscle from bone. With each section that was sliced and shoveled away, the vertebrae became more visible. I worked single-mindedly toward the white column, my whole purpose in being focused upon its emergence. (28-29)

What has been building through both of Ludel's stories comes clear in this climax. Her experience is the foundation of both science and art. It is also the root of sacrament. Faced with an acute sense of the other, the claim or voice of the other, we are moved to awe. But that which is beyond comprehension increases our awareness of vulnerability, our limits of knowledge and power, and makes us realize the limits of our very life. Ludel's confrontation with the boundary of life and death leads her to sacrifice, a yielding of the self, often symbolized in a death. It is the sacrifice of knowledge and control, the willingness to be changed by an encounter with mystery. In the midst of her work Ludel's trained hand, the instrument of her knowledge, disappears, and she feels

the boundary between knowledge and mystery with that same hand. What her knife has opened is a whale and it is also the mystery of her own being and of her connectedness. Her response is to draw her fellow worker's hand into the whale's body.

Ludel's image for yielding to the eternal moment is a fall into the pit, the abyss, yet when she loses sight, sound, and questioning which are central to the life and craft of the scientist, she experiences the warmth of intimacy. The other can be felt and shared. Earlier she had no context or form for sharing her deepest questions and now, her questions silenced for an instant, she is in communion.

Immediately her epiphany is followed by her return to the work itself. Recovering her hand and her surroundings she focuses with the single-minded concentration which the task demands. But when time comes to leave work and coworkers, she finds herself

> without a tangible shred of evidence to convince me that SP had actually lived. . . . I had only the cells of my being — the neurons in my head, the fibers of my muscles -- to remind me of what had been. But nothing I could hold and turn this way and that in the light, provided corroboration; there was no point of correspondence between the inner and outer worlds. (31)

At the end of the day she had refused the offer of one of the whale's teeth as a momento, but the next day she opens the drum which contains SP's head and cuts out teeth for herself and her co-worker.

In the last pages of her story Ludel ponders the meaning of rituals. She identifies their function as forcing acceptance of the unacceptable and as an attempt to regain some control over the rage and fear which come with mystery. But she fails to acknowledge them as gestures that create "correspondence between the inner and outer worlds." Without

rituals which mark the boundary between life and death and sustain communion in the face of it, she mourns alone clutching the tooth. At the end of the story she is "once again alone in the universe and trembling" (33).

Although her epiphany relates to her earlier self-questioning, she does not integrate that transcendence with her shifting attitudes toward her science; although it requires the relinquishment of self, it does not leave her with the means to continue the re-creation of herself and sustain her communion with others and with the other. But her telling of the story, her willingness to set the many dimensions of her experience side by side and share them in language, is the beginning of integration, re-creation, and communion.

That kind of telling needs to be part of science education. From the earliest grades we need to nurture the craft of telling the complex story of what it is to do science. We need to create a context which values the whole process of people approaching the other, learning in careful, disciplined detail as much as possible about the other, making relationship to it through knowledge. But we must also learn to make relationship with the mystery at the edge of a specific knowledge. Ludel's story, no less than my story of being a student in her lab, ends in ellipsis. It conveys vividly the human encounter with mystery, but it does not affirm the means to fuller relationship between human beings and mystery. Whether or not it takes the form of a ritual, sacrament is such a means, not for control over mystery but for experiencing its interactions with knowledge and for integrating it into life by making

relationship with it. Sacrament is a gesture by which we present ourselves as willing to risk our limits and to be changed.

Perhaps more than any part of our culture, science takes us to specific and sometimes palpable boundaries not only between knowledge and the not yet known but between knowledge and mystery. Many scientists affirm their work as their threshold to religious consciousness, but for traditional reasons, having to do with science's historical struggle for authority and our struggle to protect the liberties of individuals in education, we have separated our students and ourselves from the rhythmic relationship between scientific work and sacramental life.

"THE RHYTHM THAT MAKES LIFE HUMAN"

In the first chapter of a book on Christian sacrament, Tad Guzie develops a dynamic model which reveals the role of sacrament in Christian life. The model itself is not exclusively Christian; Guzie calls it "the rhythm that makes life human" rather than the rhythm that makes life Christian. But, while not exclusively Christian, Guzie's rhythm of "raw experience", "lived experience," story, and festival is religious; that is, life becomes "human" when personal experience is related to larger contexts, including the religious contexts which provide form for integrating our relationship with the divine.

In Guzie's model raw experience becomes lived experience when we grasp its significance. Grasping significance involves not only language, our informing images, stories, and myths, but also festival, Guzie's term for active community integration of significant experience.

The process by which we turn raw experience into lived experience involves, first of all, acknowledging our perplexity, confusion, or doubt:

> . . . there is something very normal and indeed orthodox about the experience of confusion and doubt. It is hard to think of any profoundly lived experience -- whether of pain and sorrow or of joy and love -- which does not begin with perplexity. (Guzie 11)

Ready-made answers do not help in the creation of lived experience; in fact, Guzie warns of the kind of teaching which provides answers "before the raw experience of perplexity has been sufficiently savoured and owned (11). We begin to assimilate experience not by imposing a story or

meaning as an antidote to perplexity or anxiety but by trying to integrate the new experience into our ongoing personal story and the larger stories and myths which surround us, stories of family and community, religious tradition, educational forms such as disciplines, national and cultural values, and more. Our first challenge is to become aware of these myths and stories in which we are involved and which contribute to our assimilation of experience. Each story from each group

> communicates its values to us long before we even know how to reflect on the values communicated. Myths impinge on us and frame our experience right from birth, shaping our attitudes long before we know what an attitude is. And the many myths surrounding us are often in competition. (12)

We must understand that choice making is more often influenced by the myths we live than by logical process or abstract principles. Finally, we must realize that acknowledging and understanding the stories or myths in which we are involved is important not only for personal integration but for responsible and responsive living.

Festivity, the third movement of the rhythm, provides a context for telling and enacting important stories and thereby integrating personal experience with larger experience. Guzie explains the dynamic of experience, story, and festival in terms of the development of Christian worship.

> Stories about Jesus were told and retold when the first Christians gathered for their celebrations--and there were many versions right from the beginning. It seems that a great many of these stories found in both the Old and New Testaments took shape in a context of worship. Were it not for religious festivity, many stories would not have been remembered and eventually written down. . . . The liturgy of the Word is the time when we tell our larger story in the hope of entering into it more fully in our personal histories. . . .

> Even within the sacramental moments we turn to stories. At the heart of the eucharistic prayer is a story which tells why we are giving thanks and breaking bread in this way now. (15)

Worship and ritual helped shape the Christian stories while the stories informed and gradually reformed the rituals themselves and in turn the lives and stories of the early Christians. Paul's letters (I Cor. 11) remind the churches that their experience is to be related to the stories about Christ and, in celebrating the Lord's Supper, "they should remember who they were as church and recollect why they come together to break bread and share the cup" (Guzie 16-17). By that celebration, which would eventually become known as sacrament, the early church evolved its identity and engaged in self-criticism and reunion with that identity. Guzie illustrates the process by which Christians came to understand who they were with the story of the disciples on the road to Emmaus:

> As Luke tells the story (Lk 24) these two men, along with so many others, had recognized Jesus as a great prophet because of all that he said and did in the sight of God and of the whole people. It had been their hope that this man would be the one to set Israel free. But it was their own priests and leaders who handed Jesus over to be sentenced to death.
>
> The two disciples were stunned by the crucifixion, confused and hurt by the events of the preceding days. This was the raw experience. They talked about the raw experience until, with the Lord's help, they were drawn into reflection on how these events related to their own story. Then it became a lived experience. The Lord who walked with them took the story of the scriptures and explained to them how it was ordained that the Christ should suffer and so enter into his glory. The larger story made sense of their own immediate experience, and their hearts burned within them.
>
> The end of the day brought sharing and a moment of celebration. The Lord sat with them at table, took bread and said the blessing, broke it and shared it with them. Their eyes were opened, and they recognized him. And this was festivity. (Guzie 22-23)

Festivals, celebrations, sacraments become meaningful in terms of the whole rhythm -- in relationship to informing stories and to the participants who are in the process of creating lived experience. Festivals are not ends in themselves and cannot substitute for lived experience. "Festivity is one moment in a cycle, and unless the other elements of the cycle are at work, festivity is bound to lose its footing and its meaning" (Guzie 18).

It is useful, however, to think about each movement separately in order to understand more fully what each contributes and in order to recognize distortions in the rhythm. Guzie's dynamic model for how life is made human can be helpful in identifying difficulty or poverty of life when the movements become isolated from one another or when one or more of them is missing entirely.

Guzie's model offers a fruitful way to look critically at the situations we create for learning and teaching. We can ask how, why, and to what effect one or another movement in the rhythm takes precedence or becomes neglected. We can consider how a particular situation provides for the transformation of raw experience into lived experience, in what context and to what end interpretive stories are told, which ones are valued, and what opportunities are made for integrating the experience of individual teachers and students. In other words, we can ask what counts in a particular situation as lived experience. And we can ask what gets left hanging, unstoried and uncelebrated.

I am particularly interested in the role of celebration and festivity in the rhythm. By what rituals do we frame our experience and stories in learning/teaching situations? What are the ceremonies which

recall us to implicit, valued assumptions? How is ceremony responsive to stories or to the individual or collective experience of students and teachers in a particular situation? And in what sense does ceremony or festival provide a critical context for stories and experience?

The last question helps me distinguish sacrament as a particular kind of festivity. Sacrament has been understood by Christians as the self-criticism of the church because in sacrament the community celebrates the radical experience of encounter between God and people from which the church grows. It seems clear to me that the stories I have told in this chapter indicate a need in scientific work not only for more adequate ways to tell the full scope and meaning of the work but also for a kind of critical festivity, a way to acknowledge and celebrate scientific work as a radical encounter with the other and as a means of deepening self-knowledge and communion in the face of mystery. A character in one of Andre Dubus' short stories says that "ritual allows those who cannot will themselves out of the secular to perform the spiritual, as dancing allows the tongue tied man a ceremony of love" (152). Not only in scientific education and work, but also, I think, broadly in education, there is need for a context in which to "perform the spiritual." There is need for those who encounter the raw experience of mystery in the midst of knowledge to find a "human," that is a sharable, performable context for that experience. I am not suggesting that we try to domesticate mystery but rather that we find ways which help us stay open to what constantly challenges our domestication and control of experience. I think it is important also that those who acknowledge encounters with mystery make room for it in the settings and

structures of education. But a model like Guzie's calls into question the image implied by the words "setting," "structure," and "room." In Guzie's terms "to make room" means to enter and help others enter the full motion, the full play, of the rhythm of human life. In that full rhythm sacrament is a movement which allows mystery to be endured and celebrated rather than feared and foreclosed.

CHAPTER II

Toward a Definition of Sacrament

The Festival of Our Limits and Possibilities: A Metaphorical Theology of Sacrament

TOWARD A DEFINITION OF SACRAMENT

The word "sacrament" carries connotations heavily influenced by the Christian tradition, but Christians have been more successful at specifying and explaining particular sacraments like the eucharist or baptism than at making broad definitions. While Christian scripture tells the evolution and early practice of these gestures of faith, it does not provide a general concept. The actual term "sacrament" did not appear in Western churches until the third century when, as a translation of the Greek word "musterian," it was used by Christians to designate a means of affecting union with the divine (Jennings 500-501).

In an effort to avoid a definition limited to the formulations of Christian theology or a definition based on finding in other traditions practices which resemble Christan sacraments, the Encyclopedia of Religion chooses a phenomenological definition which emphasizes location and function in a tradition. Considered phenomenologically, sacrament is

> a ritual that enacts, focuses, and concentrates the distinctive beliefs, attitudes, and actions of any religious tradition.
>
> . . .
>
> In this definition the initiation rites of the mystery religions, the Christian Eucharist, the Ghost Dance and the Peyote ritual of the North American Indians, and many other rituals . . . would be included.
>
> . . .
>
> Thus the Shalako ceremony of the Zuni Indians of New Mexico, which displays the vigor and values of the Zuni while inviting the participation and blessings of the Gods, is a sacrament in the form of a dance . . . . Regular occasions for prayer . . . may well have this character in Islam, which is generally suspicious of ritual . . . . Buddhist practice of zazen, which consists of periods of sitting and breathing punctuated by periods of walking may have a

> place of importance and function similar to the Christian Eucharist. (Jennings 504)

What this definition highlights is the initiative of people in behalf of their religion and in behalf of themselves as believers. Sacrament is not simply the acknowledgement of shared beliefs, attitudes, and actions; it is dynamic and participatory. Examples cited in the Encyclopedia's definition feature teaching, celebration, and nurture of the religion itself and of the religious life of the participants. While hierophany exposes the sacred in the profane, sacrament sets in motion an active relationship between the divine and people. In those religions which develop a concept of divine person, sacrament is the means to enact, focus, and concentrate the personal relationship between the deity and the believing people.

In both Judaism and Christianity the possibility of such a relationship between God and people begins when God manifests God's self to people in terms of their limits and ways, their human condition. For Jews, Torah is such a manifestation. In Torah God not only reveals the meaning of creation by means of the people's own language but, as the image "blueprint of creation" implies, uses the book to prescribe creation itself. But God's manifestation does not become revelation until it is accepted by people. Because God manifests and creates by the book, those who study Torah are able to participate in God's work, maintain God's work in the world, by interpreting the book and by using it in on-going human life. If God arranges and disposes human lives by the gift of law, people, by careful interpretation and application of the law, continue God's work of ordering. If God prepares deliverance, the

people, by prophecy and practice, maintain it.

For Christians, Jesus Christ is the manifestation by which God shares human nature, living and dying as people do. Revelation is accomplished when people accept God's gift of God's self in Christ by offering themselves in return, to do, in the unity of faith, what God does. Unity of faith is the condition of sharing beliefs and experiences in such a way that individual lives take on identity and meaning in terms of the larger meanings revealed by God. Christians engage these larger meanings by leadings of the Spirit, the scriptures, interpretive writings and preaching, prophetic vision, the sacraments, art and imagery, and the experience of "church," the body of believers functioning in the world as Christ.

If in Judaism and Christianity revelation is accomplished when people offer themselves and their works in response to God's gift of God's self, the difference between God and people is not blurred by the mutual giving. On the contrary, the very act of trying to respond to what God does, the very act of attempting to continue what God begins, reveals to people their limits, their human being. We meet, in answering God, not only God, manifest in a particular way, but ourselves in an act of response which is self-revealing. Abraham Heschel considers "the ability to respond to the divine challenge [to be] the root of human freedom . . ." (Rothschild 306). The self disclosed in revelation is the responsive self, the self God knows us to be, the self capable of human freedom.

I propose that sacrament designates the mutual giving and receiving between God and people which can transform limited human beings capable

of limited human gestures, not into divine beings capable of divine acts, but into fully human beings able to participate with God in the world, doing, in the terms of human life, what God does. Furthermore, I suggest that sacrament so conceived provides a condition for living which is compatable with contemporary consciousness, that tensive, post-modern, awareness of ourselves both as creators and as discoverers of reality.

In the next section, I explain what it means in a contemporary context to say that we accept God's continuing manifestation and are accepted by God as human beings. I specify more clearly how sacramental living enables and empowers people. Although I hope in future work to explore sacrament in the broad context suggested by The Encyclopedia of Religion's definition and especially to consider Jewish scriptural interpretation as sacrament, for now I shall look at the dynamics of sacrament in contemporary Christian theology and practice. I shall develop not a definition but, more accurately, a theology of sacrament using metaphor as my model for the tensive relationship which sacrament can accomplish.

THE FESTIVAL OF OUR LIMITS AND POSSIBILITIES: A METAPHORICAL THEOLOGY OF SACRAMENT

Exploring the relationship between religious imagery and conceptual theological language, Sallie McFague proposes a way of talking about God which she considers appropriate for contemporary sensibilities. In Metaporical Theology: Models of God and Religious Language she develops a theology on a model of metaphor which shares with metaphor its tensive quality. Such a theology is iconoclastic and open-ended rather than dogmatic (19). It reflects Ernst Cassirer's contention that to be religious is to recognize "that sensuous signs and images are limited means for determining religious meaning and always remain inadequate to it" (Streng 174). In addition to sharing the tensive characteristics of metaphor, the metaphorical theology which McFague develops is based on the recognition that it is impossible to separate theological concepts from religious metaphors; theology, like science, works with models, and models are, after all, "dominant comprehensive metaphors with organizing structural potential" (27).

Because a metaphor is a figure which maintains both its negative and its positive meanings, "metaphor" is a good metaphor or model for a theology which aims to develop our consciousness of the limits inherent in our ways of making meaning. In the time-honored schoolroom example "my beloved is a rose," two thoughts interact but do not become fused; we hold to our knowledge that the beloved is not a rose while we allow our minds to entertain what the grammar proposes -- an imaginative identity which opens us to new insights about and experience of beloveds, roses,

lovers, love itself, and this love in particular. The metaphor does not presume to resolve or synthesize its positive and negative meanings; the beloved both is and is not a rose; our minds are given exactly that challenge. In the far more complex Christian metaphor, the kingdom of God, the power lies in the discovery through religious development that fulfilled relationship between people and God both is and is not a domain governed by a king-like deity and both is and is not the many other things to which it is compared in extended metaphors and parables which deepen the irony and broaden the scope of the kingdom image.

But having designated "metaphor" a good model for maintaining both the "is" and the "is not" of religious and theological language, McFague, herself seems to be more interested in insisting on the "is not."1 She wants to show how the parables and Jesus' life and teachings highlight the difference between the kingdom of God and the world.

> Religious people are less comfortable in the world, aware of the difference between things as they are and things as they ought to be . . . . A deeply metaphorical perspective such as that based on parable demands a way of being in the world characterized by a high degree of tension, relativity, iconoclasm, and change. (65)

McFague considers it her duty as a theologian to cultivate a keen awareness of the distance between our ways and the way of the kingdom by revising basic metaphors and models. Because she is dedicated to the theologian's job of keeping the language of faith multiple and pliable, constantly reinterpreted in response to many different situations and people, and never an end in itself or an object of reverence, McFague is suspicious of religious symbols which can so easily become dogma rather than provocative suggestions of religious meaning. She would warn us, as

Tad Guzie does, that "symbols are there before we know they are there . . . [they influence us] before we know just what is being done." Furthermore we have a tendency to identify symbols with "the reality to which they point," or, erring in the other direction, we assume that all symbols can be translated into rational explanation (Guzie 124). Of course, metaphor and models can be abused in these ways also; but what McFague especially fears, and associates with symbol, is the kind of imagination she calls sacramental, the kind that senses unity, continuity, and connection between the world and the kingdom and is, therefore, prone to blur the difference between religious truth and finite images and meanings. If we imagine this world as full of God's presence, as "figuring" the divine, and as "the particulars" of a whole, then McFague thinks we lose humility and self-consciousness about our limits, our distance from the kingdom, and the tentativeness of all our images and conceptions of God.

McFague declares that her emphasis on the discontinuity between this world and the kingdom and on the limits of language reflects a particularly Protestant and prophetic consciousness as opposed to a Catholic and sacramental consciousness. Not only does she consider the way of symbol, unity, and sacrament incompatable with the way of metaphor, discontinuity, and prophecy, but she argues that contemporary sensibilities are more in tune with the latter way than the former. However, when McFague indulges the classic dichotomy between Protestant/prophetic and Catholic/sacramental consciousnesses, she loses touch with the genius of her metaphorical theology. While it is true that some individuals and traditions are more attuned to our distance from the unity and complete-

ness which we image as the kingdom and others are devoted to the experience of grace which suggests our participation in it, a metaphorical theology, with its emphasis on the "is" and the "is not" of all our postures, would insist that both consciousnesses be maintained in tension.2

According to June O'Connor the unitive side of the tension is alive and well in contemporary theology. Responding to McFague, she points out that feminist and process theologies, as they have been developed by both Protestants and Catholics, emphasize themes of unity, continuity, and connection especially in their refusal of sense/spirit dualities and in their insistance on interdependence in our world and dependence on God (O'Connor 68). But unity as it is understood in these contemporary theologies is not a category which transcends particularity or difference, nor is it understood as the whole of which finite beings and things are the parts. In these theologies unity and continuity, whether among people, between people and God, or between people and the world — earth or universe -- come about by virtue of relationship, and in relationships it is essential to be aware both of similarity and difference.

If we understand the kingdom to mean the fulfilled relationship between ourselves and God which would inform and fulfill our relationships in the world, then both prophecy and sacrament are ways to seek the kingdom. The prophet experiences and identifies failed relationships and, inspired by relationship with God, imagines and proclaims the changes which must be made. Sacrament is a celebration in which we enact our relationship with God and learn, thereby, the possibility of more godly relationships with ourselves, others, and the world. As our

prophecies attune us both to failure and to possibility, so our sacraments may be understood to enact not only our kinship to God and our participation in the kingdom but also our unlikeness and our distorted relationships with ourselves, others, and the world.

A metaphorical theology, rather than precluding sacrament, provides stimulating ways to think about it. Using metaphor as the model for our relationship with God, I propose that we think of sacrament as the festival of our limits and possibilities, the enactment of our condition as a people faced with a God who manifests. I suggest, futhermore, that sacrament celebrates, rather than resolves or obscures, the tension inherent in that condition. It can be understood as an action in which we sustain the full impact of our situation. As metaphor engenders shock, sacrament renews our original realization that, outrageous as it may seem to us, God has invited us, continually invites us, to do what God does. As the energy of metaphor results from the tension between an accepted meaning and the creation, discovery, or transformation of meaning, between a commonsense "is not" and the "is" which the language demands; the energy of sacrament results from the tension which God's invitation creates for us. We accept the invitation by inviting God in return, and when we do we are plunged into mysterious relationship in which we must learn that in accepting God's invitation we meet ourselves, our peculiar limits and possibilities. But we also learn that God honors our condition by participating in it: God does what we do. To do what God does seems to mean doing what we do, in a certain way. Our situation, described in the grammar of metaphor, goes something like this: we are God, we are

not God. Or to use the simile construction: we are like God, we are not like God.

The idea or intuition that we are one with God haunts religious imagination particularly in the mystic traditions. Other puzzles of faith nudge us toward a sense of kinship; we are brothers and sisters of Christ and heirs to the kingdom. We speak of God within us while at the same time we recognize creation and ourselves as God's body. But we entertain this intuitive audacity that we are God in tension with its opposite, we are not God.

The sense of God as "wholly other," as absolutely not us is another difficult and extreme concept but one we confront when we acknowledge the limits of our power in even the most mundane matters and in mortality itself. We must tolerate the wholly other not only as that which defines our lack and our limit but as that which invites us to expand our imagination and experience. In such expansion we fear the loss of self, imagining the tremendous mysterious in images of threatening power. Or we learn God as wholly other by the experience of personal isolation, the strange in nature or society or art, the alien. The wholly other offers no kinship, no sense of unity. Mystical and extreme, as is the sense of God as self-same, this way of knowing God deepens from fear to awe and fructifies in our capacity for respecting others -- people, things, ideas.

In a less absolute construction, we are like God. This construction profoundly challenges us, but we are able to explore its meaning actively. In fact, much religious practice involves us in the search for and experience of what God reveals to us in human terms: by book, word,

incarnation, and example. We engage God with our particular gifts and weaknesses. In the struggle to understand what in us is like God and how, we have things to do, words to say and ponder. If we are like God then our senses, judgment, emotions, intellect, ways of organizing, educating, comforting, and criticizing ourselves may be hints of God. To be ourselves, deeply realized, is to be like God.

Literature and psychology, as well as mythology and religions explore the human urge to set ourselves against God, to declare our unlikeness. Insisting we are not like God, we try to avoid the acute sense of limit which is sometimes stronger than the sense of possibility when we respond to God's invitation. To establish separation, to prevent and obscure God's invitation, is a very different action from confronting God as wholly other. Rather than a search beyond self, it involves protection of self, isolation of self in an attempt to preserve ourselves by being self-contained and self-sufficient.

One way to understand sacrament is to think of it as acceptance and celebration of our condition, as the festival of our limits and possibilities. It is appropriate to celebrate our limited and promising condition because God's gestures toward us urge us to respond as ourselves and in response to realize both ourselves and God more fully. In sacrament we take on all four modes of relating to God, accepting and celebrating the full tension, the intense contradictions which more ordinary experience reduces to particular emphases.

The following chapter describes two ways of making sacrament. The first, the eucharist, is one of the most widely practiced Christian sacraments. I emphasize how the liturgy of eucharist celebrates the

interactive and tensive quality of relationship to God and orients communicants to living in the world as church. Another way of making sacrament can be seen in the faith and practice of Quakers, who renounce liturgical or any other ritualistic enactment. Yet Quaker life involves a tension between mystical and prophetic relationships with God which can be understood in terms of a metaphorical model of sacrament.

Notes

1. McFague's concept of metaphor is, as she puts it, an amalgam of the views of I.A. Richards, Max Black, Douglas Berggren, Walter Ong, Nelson Goodman, and Paul Ricoeur. Ricoeur notes the "is and is not" quality of metaphor in Chapter three of Interpretation Theory: Discourse and the Surplus of Meaning.

> Must we not conclude then that metaphor implies a tensive use of language in order to uphold a tensive concept of reality? By this I mean that the tension is not simply between words, but within the very copula of the metaphorical utterance. "Nature is a temple where living pillars . . . " Here "is" signifies both is and is not. (Ricoeur 68)

2. McFague, in her notes, acknowledges that the work of David Tracy in The Analogical Imagination: Christian Theology and the Culture of Pluralism comes close to her conception of metaphorical theology. Tracy speaks of "manifestation theologies" and "proclamation theologies" but insists that despite differing emphases both express the eschatological tension of "always-already, not-yet."

CHAPTER III

Enacting Sacramental Tension: The Liturgy of the Eucharist

Silence, Language, and Action: The Sacrament of Quaker Life

ENACTING SACRAMENTAL TENSION: THE LITURGY OF THE EUCHARIST

The Christian sacrament of eucharist may be interpreted as a celebration of mutual giving and receiving between God and people. The people move toward God with gifts: the good yield of the earth and human craft; the sacrifice of praise, thanksgiving, and blessing; the individual life of each communicant; and the communal life of the church which understands itself to be the body of Christ. By their giving, the people accept what is given by God: the bounty of the earth; explicit deliverence and manifestation in history, particularly in Jesus Christ who shared human life and death; and the church, as it is the ongoing human life of Jesus and the context for the transformation of individual lives.

Early History and Intention of the Christian Rite

Roots of the eucharist are in the Jewish rituals observed at family suppers, special meals of fellowship, and holy celebrations such as Passover. As Tad Guzie describes these rituals:

> No dish was eaten without a prayer of thanksgiving or blessing, a berakah, which the host or the leader of the group said over each kind of food as it was served. Near the beginning of the meal, for example, the host took bread and broke it saying, "Blessed are you, Lord our God, eternal king, for bringing forth bread from the earth." He then gave a piece of bread to every one at the table. The main course followed with similar blessings for each dish. If wine was served, each person would bless his own cup every time he refilled it saying, "Blessed are you, Lord our God, eternal King, for making the fruit of the vine. At the end of the meal, especially on more solemn occasions, came a longer prayer of thanksgiving. (Guzie, J&E 43-44)

Christian scripture asserts that before his arrest and crucifixion, Jesus shared such a meal with his disciples, and he asked that in the future they celebrate their ritual meals in remembrance of him. Thus he added new significance to a practice he knew the disciples would be doing regularly (Dix, 57-58). It is important to understand the eucharist both as traditional celebration and as an action which helped the disciples and the early church experience the new meanings they were struggling to understand and live. Moreover, as Guzie reminds us, there are meanings at work in the eucharist which are older and more radical than the Jewish mealtime traditions.

> From time immemorial the act of sharing food with another has connoted fellowship, life shared, exultation at being alive. From time immemorial, the image of blood has connoted a "matter of life and death." The shedding of blood radically signifies loss of vitality; so the use of blood in . . . rituals . . . signifies [the] search for life and the preservation of life. When Jesus associated his body and blood, his life and death, with the elements of a communal meal, he evoked symbols which reach back into the origins of man's consciousness. (Guzie, J&E 55)

Essential to the eucharist is the Jewish understanding of praise and thanksgiving as sacrifice to God for the gifts of deliverance and covenant.

> . . . the thanksgiving-communion-sacrifice-sacred meal connection was established in Judaism before Jesus' followers began making eucharist . . . . Sacrifice, in the context of the Jewish communion offerings, was effected by remembering thankfully, and it is the making of the sacrifice of thanksgiving over the gifts (bread, cup, and animal) which provided the sacred meal. Sacrifice and consecration belong together, then: In the Jewish setting "consecration" is the result of sacrifice, not the procedure of obtaining an appropriate offering. (Dix, 771, from the additional notes by Paul V. Marshall).

We know also that certain Jewish sects practiced sacrifice of first fruits as a ritual which ". . . looked forward to a messianic banquet . . ." (Guzie, J&E 48). As the eucharist developed, it incorporated their traditions and practices, identifying sacrifice with praise and thanksgiving but blending that theme with the theme of Jesus' self- sacrifice and with an interpretation of the church, the self-offering of believers, as an answering sacrifice.

All these themes are present in a prayer from the first century Didache which blesses the wine as ". . . the holy vine of your son David, which you have made known to us through Jesus, your son." Over bread God is thanked ". . . for the life and knowledge you have made known to us through Jesus, your son." The church, the unified body of believers, is also identified with the bread, ". . . grain gathered together and made one . . . "(Guzie, J&E 49-50). This early ritual explicitly affirms Jesus' continuity with Jewish history, God's gift of a new kind of life and knowledge, and the unity of those who have accepted this gift. It includes Jesus' identification of the bread with his body, and it associates his body with the church, the unified believers who will continue his life. Here the wine, traditionally the sacrifice of blessing, is understood as Jesus' blood, blood tied in the usual generative way and in religious continuity to the line of David. Moreover, this Didache ritual develops sacrifice to its full complexity as the thanksgiving offerings of the people to God, God's offering of Jesus to Jesus' own people, and Jesus' offering of himself to God on behalf of people.

It seems clear that the early church celebrated, maintained, and created a sense of renewal in their relationship to God and among themselves by enacting that relationship before it came to be narrated and interpreted in the gospels. Complex, paradoxical associations, the old and the new, were yoked together by ritual. Ritual, rather than a coherent story or doctrine, held in tension the multiple dimensions which the early church was in the process of acknowledging (Dix 3). Jesus was part of the history of deliverance and covenant but was a new occasion in that history; his life and death suggested sacrifice in the ancient sense of life given that life may be received and at the same time in the traditional Jewish sense of ordinary life sanctified by thankfulness. But what the early forms of the eucharist most vividly enacted was the mutuality of giving: Jesus' gift to God in behalf of people was himself, who was as well God's gift to people, God's full participation in human life, God's self-giving. The people's gifts were crucial, too (Dix 117). The contribution by each communicant of some bread and wine and other small offerings, " . . .oil, cheese, vegetables, fruit, flowers . . ." to be blessed and shared came to be understood as "offertory" — gifts to God from people by which they indicated their full acceptance of God's gifts and thereby their own self-giving (Dix, 78/Hippolytus, Ap. Trad., v., vi., xxviii). The English liturgical scholar, Dom Gregory Dix, takes his turn at trying to articulate the complexity of the mutual giving and the importance of the people's gifts.

> The church corporately, through the individual offertory by each member for himself or herself personally, offers itself to God at the offertory under the forms of bread and wine, as Christ offered Himself, a pledged victim, to the Father at the last supper. The Body of Christ, the church, offers itself to become the sacrificed

> Body of Christ, the sacrament, in order that thereby the church itself may become within time what in eternal reality it is before God -- the `fulness' or `fulfilment' of Christ; and each of the redeemed may `become' what he has been made by baptism and confirmation, a living member of Christ's Body. (Dix, 247)

Structure and Meaning of the Eucharist Interpreted in terms of a Metaphorical Model of Sacrament

The Christian eucharist works dramatically. Evelyn Underhill describes it as "a sacred drama . . . which in its essence takes place outside of time and exceeds the apprehension of men" (263). It is an indivisible act which must, because of human limitation, be presented as a series of actions in time. Like the tensive movement of metaphor, the eucharist's dramatic movement retains the discrete meaning of each moment while developing relationships among these moments which create the new or integrative meaning. The dramatic progress of events may be understood as an enactment of the dynamic created by God's invitation to do what God does. In its basic form and movement the liturgy of the eucharist is a context for realizing the four modes of relationship which I have proposed as constituents of sacrament understood in terms of a tensive or metaphorical model: our identity with God and the otherness of God; our likeness to God and our unlikeness to God.

Typically the eucharist begins with a preface designated, in some traditions, the Liturgy of the Word or the synaxis (Dix, 136). Like synagogue worship, with its psalms, prayers, and readings, this introductory service includes the ministry of the word and a sermon which expands and interprets the word. Prayers appropriate to the season and occasion specify the cyclical time of the church year and the unique time, place, and population of the particular eucharistic celebration.

Prayers and petitions of the people and the cry for mercy, kyrie eleison, recognize need as a part of the human condition appropriately addressed by the eucharist. Language, time, and place as well as human needs, general and specific, are recognized as potential means of revelation; God as powerfully other is called to respond to these human limits. Confession, also part of the preface, addresses the human experience of unlikeness to God — dissociation, separation, denial, or refusal of God's invitation to do what God does. "What we have done and what we have left undone," the guilt and fear experienced in separation, are acknowledged not over against the eucharistic celebration nor in preparation for it but as part of it.

In dramatic terms, the transition between the preface, or Liturgy of the Word, and the "eucharist proper," marks the progress from listening, learning, and acknowledging limit to celebration and full participation in the giving and receiving between God and people. While the emphasis changes from limit, expressed in terms of the present moment and situation, to possibility and fulfillment, preface and communion are integrated. Parallels, repetitions, reflexive understandings unify the two parts, suggesting eschatological tension, the "always-already, not-yet" of the kingdom (Tracy 423-438). The scripture as revelation parallels the bread and wine; "the sacred record no less than the sacred rite is the disclosure within time of the Eternal . . ." (Underhill, 131). Likewise, the cry for mercy and the confession resonate with the later oblation in such a way that "sacrifice" invokes a full play of meaning between the fear of unworthiness and unlikeness which pushes us toward propitiation and the mutual giving in which we offer our human gifts as

appropriate and acceptable responses to God's invitation. And the peace or greeting, which in some forms ends the preface, prefigures the unifying of the church by the Holy Spirit and the unifying act of communion itself.

The second part of the eucharist has maintained its basic structure through many changes in emphasis over the centuries. In the 1940's Gregory Dix advanced the premise that "one understands the origin, growth, and theology of the ancient rites by inquiring primarily into their 'shape' or basic patterns . . . ," and this premise is still "a fundamental working principle in liturgical studies . . ." (Marshall in Dix, 765). Dix observed that the eucharist proper, the second part of the rite, is composed of four actions.

> With absolute unanimity the liturgical tradition reproduces [the] seven actions [described in the New Testament accounts of the Last Supper] as four: (1) the offeratory; bread and wine 'are taken' and placed on the table together. (2) The prayer; the president gives thanks to God over bread and wine together. (3) The fraction; the bread is broken. (4) The communion; the bread and wine are distributed together. (Dix, 48)

If the whole of the eucharist proper enacts the process of full mutual accepting, people by God and God by people, these separate actions can be understood to celebrate particular aspects of the relationship.

Offering

Offering or "taking," the first action, is a practical gesture by which the bread and wine are brought for the communion. But the gesture assumes broader significance as the people's giving of the fruits of the earth and their work in response to God's invitation. These gifts are one part of a flow of giving: offertory, praise and thanksgiving,

Christ's offering, the self-offering of each member and of the church. Any one part isolated from the whole risks misunderstanding; for example, the people's offering, apart from the interactive drama, could be misconstrued as necessary or as sufficient rather than as one dimension of the full, complex relationship (Mitchell, 147-150).

Eucharistic Prayer

Complexity, interrelationship, and multiplicity in tension with unity characterize the primary Christian imagery and experience of divine mystery and of human relationship with that mystery. The second action, the eucharistic prayer, has evolved into a celebration of the trinity, a salient image of the tensive, dynamic character of Christianity. From praise and thanksgiving to the God of Israel, the prayer moves to the historical memorial of Jesus Christ, and then to the action of the Holy Spirit which makes each specific historical revelation continual and present.

Praise and thanksgiving follow the basic Jewish forms: praise proclaims God's glory and great deeds, while thanksgiving, like the blessings before and after meals, expresses gratitude for God's glory and deeds as they are gifts to people (Dix, 720). Beginning with an invitation to worship, this part of the eucharistic prayer climaxes in the sanctus, a moment of pure celebration and adoration. Like the offerings from the people and the eating and drinking of bread and wine, the sanctus is expressive action, a discrete, complete gesture, on the one hand, and a step forward in the dramatic progress of the eucharist, on the other.

While the four-part shape of the eucharist has remained remarkably constant, the eucharistic prayer has been subject to changing theological emphases through various traditions and in various times reflecting what Dix calls ". . . a rapidly growing wonderfully rich experience by individuals and churches of the many meanings the single rite could have"(6).

> The single primal fact of the rite had been given by Jesus without commentary, beyond the identification of the elements with His own sacrificial Body and Blood. It was left to the church to explore for herself the inexhaustible depths of its meaning; and from the first every local church was joyfully at work doing so. (Dix, 6)

One example, from the fourth century Liturgy of St. James, highlights awe and the otherness of God by invoking Isaiah's image: "the coal of fire which the seraph brought from the altar to the lips of the prophet" (vi. 1-9).

> The lord shall bless us and make us to receive with the pure tongs of our fingers the burning coal to place it in the mouths of the faithful for the purifying and renewing of our souls and bodies now and forever. O taste and see the Lord is good. (Underhill, 134)

The coal is dangerous to receive in our mouths; the taking of it requires a transformation — our fingers to pure tongs. This image vividly contrasts and intensifies the domesticity of bread and wine. But the foreign, dangerous food is blessed to the nourishment not only of our souls but of our bodies as well, and celebrated as not only good for us but pleasing to our senses -- "O taste and see . . . ."

In the last two decades the Episcopal Church, like the Anglican and Roman churches, has made liturgical revisions in light of contemporary experiences of the faith, contemporary theologies, and recent scriptural

and liturgical scholarship. Moreover it has joined other faith traditions in efforts toward an ecumenical liturgy, an outline and explication of which was drafted by the World Council of Churches in 1982. The new eucharistic prayers in the Episcopal Book of Common Prayer provide an example of how flexible this second action is in its crucial role of interpreting and integrating meanings in the eucharist. Lionel Mitchell notes the significance of the changes in the prayers.

> The recent revision of the Prayer Book was more for us Episcopalians than simply the alteration of a service book. It called for a readjustment of the language of our relationship with God, and therefore affected that relationship itself. Traditionally this dependence of theology upon worship has been expressed in the Latin maxim lex orandi lex credendi or more accurately legem credendi lex statuat supplicandi; which means that the way we pray determines the way we believe. (Mitchell 1)

The eucharistic prayers of Rite II, published in the Book of Common Prayer in 1979, require significant adjustments of the relationship between people and God from that developed in Rite I. Prayer A in Rite I, "which has been in the American Prayer Book since 1789 . . . ," retains the emphasis on Christ's passion and death and the people's supplication typical of the late middle ages and of the sixteenth century English rite (Mitchell 153). It conveys our basic inadequacy for relationship with God except through God's mercy. The focus of praise and thanksgiving is narrowed to the specific redemptive gift of Christ as a "full perfect and sufficient sacrifice" for our sins. Here the prayers do not elaborate the sacrifice of praise, but explicate Christ's sacrifice as it will be enacted in the breaking and eating of bread and the drinking of wine "until his coming again." In response to God's gift of Christ, we offer to God God's creatures of bread and wine in remembrance

of Christ's death and passion and in the hope that we may partake of his body and blood. The gift of God's creatures brought in our hands is received by God as an act of mercy, and we receive God's response as forgiveness. We offer God, also, our souls and bodies that they may be "filled with grace and benediction and made one body with Christ, that he may dwell in us and we in him." The prayer moves from our separateness from God, through praise and thanksgiving for God's mercy and redemption, toward hope for union with Christ by God's grace. Yet it ends not in celebration but in obligation and beseeching that God " . . . accept this our bounden duty and service not weighing our merits but pardoning our offenses, through Jesus Christ our Lord." While our hope is in Christ, this prayer does not suggest our likeness to him; on the contrary, the acute sense of unlikeness is maintained throughout to emphasize the theme of atonement.

In contrast the Episcopal Book of Common Prayer, Rite II, develops the theme of mutual acceptance between God and people. That there are four alternative versions (A, B, C, D) of the eucharistic prayer is in itself significant; Mitchell points out that,

> no single prayer can say everything which might be desirable to say in a eucharistic prayer. Each has its own emphases, but collectively the prayers present a balanced picture of eucharistic theology. (153)

What these four prayers have in common is their emphasis not on our unworthiness, God's mercy, and Christ's atonement but on celebrative praise encompassing a wide range of relationship and revelation, including atonement. Prayer A, for example, calls us to worship out of joy

rather than, as in Rite I, out of "bounden duty," After the sanctus the celebrant invokes the connection between creativity, love, and mercy.

> In your infinite love you made us for yourself and when we had fallen into sin and become subject to evil and death, you in your infinite mercy sent Jesus Christ your only and eternal son, to share our human nature, to live and die as one of us, and to reconcile us to you, the God and father of all. (BCP, 362)

Here the language of kinship and belonging predominates. Mercy is one aspect of God's love for people rather than the primary expression of it, and God sent Christ to help us with sin, evil, and death by being like us. The events of the Last Supper and the charge, "Do this in remembrance of me," are interpreted in this context of love and redemptive interaction.

> We celebrate the memorial of our redemption, O Father, in this sacrifice of praise and thanksgiving. Recalling his death, resurrection, and ascension, we offer you these gifts. (BCP, 363)

Our gifts, though part of God's creation, are ours to give as is the sacrifice of praise and thanksgiving both for God's power and God's love. Thus prayer A focuses on the mutual giving and receiving between God and human beings, and Jesus embodies that mutuality.

Prayer B is like prayer A in its celebration of God's goodness and love, but its focus recalls the history of revelation. God's goodness and love are revealed

> . . . in creation; in the calling of Israel to be your people; in your word spoken through the prophets; and above all [in] the word made flesh, Jesus, your son." (BCP, 368)

The incarnation, understood as the reconciliation of human beings to God, is seen as part of a long tradition of revelation and gift; the emphasis is on continuity rather than on the uniqueness of Christ.

Prayer C puts our relationship with God into an even wider context of space and time by elaborating God's revelation through the creation of the universe. Reconciliation to God through Christ is one part of the vast, ongoing revelation -- cosmic, astronomic, geologic, and evolutionary as well as historical and specifically Jewish and Christian. After the manner of the Alexandrian Liturgy of St. Mark, also the model of contemporary Roman and alternative Anglican rites (Mitchell, 152), this prayer precedes the sanctus intensifying and literally universalizing the climax of praise. Human worshippers take their place in the whole ecology and join voices with a community of the living and the dead, the visible and the invisible,

> . . . the heavenly chorus, . . . prophets, apostles, and martyrs, and . . . all those in every generation who have looked to you in hope, to proclaim with them your glory in their unending hymn:
> Holy, holy, holy Lord, God of power and might heaven and earth are full of your glory. (BCP, 370-71)

Prayer D spans sixteen centuries to echo in its imagery the Alexandrian Anaphora of St. Basil (Mitchell, 154). It begins with an image of God dwelling in "light inaccessible," denoting otherness and distance, and moves to an image of God as "fountain of life and source of all goodness" (BCP, 373). These metaphors of light and water may seem to address human concerns less directly than the covenants, the prophets' teaching, and the incarnation, but as enabling gifts they are revelation nevertheless. Although other and inaccessible, the light reveals "in

the splendor of your radiance," what it shines on, and the fountain surges up making life and goodness accessible. Seeing in the light of truth and feeling the flow of life and goodness enable people to act in the world according to these properties. Prayer D goes on to celebrate not only God's enabling gifts, but also the enabling work done by Jesus in his life: "To the poor he proclaimed the good news of salvation; to prisoners, freedom; to the sorrowful, joy" (BCP, 374). Christ then continues the enabling by sending the Holy Spirit to help us live as empowered church.

> And that we might live no longer for ourselves, but for him who died and rose for us, he sent the Holy Spirit, his own first gift to those who believe, to complete his work in the world and bring to a fulfillment the sanctification of all. (BCP, 374)

The movement of Prayer D, from God's enabling gifts, to those of Christ, to those of the Holy Spirit, illustrates the pattern of all eucharistic prayers by which each of the three persons of the trinity relate to the people who have accepted, by the act of making eucharist, the bounty of all three.

The second person of the trinity is featured in the memorial sentences, which recall Jesus' historical actions and words at the Last Supper and the events of his life, death, resurrection, and ascension. Like the prayers of praise and thanksgiving, the memorial prayers develop the theme of mutual interaction -- manifestation by God and acceptance by people -- which accomplishes revelation. Mitchell explains the emphasis, in twentieth century interpretation, on the Greek word <u>anamnesis</u> which is translated into English as "memorial" or "remembrance." Like the Hebrew <u>zikkaron</u>, <u>anamnesis</u> specifies participation; in the eucharist the people

> . . . become participants in the event, not as history, but as present realities in our lives where the timelessness of eternity overcomes the centuries and proclaims 'you are risen with Christ.' (Mitchell, 164)

As evidence of the widespread acceptance of this participatory interpretation, Mitchell cites the explication of the anamnesis by the Faith and Order Commission of the World Council of Churches in their 1982 proposal of an ecumenical liturgry.

> Christ himself with all that he has accomplished for us and for all creation (in his incarnation, servanthood, ministry, teaching, suffering, sacrifice, resurrection, ascension and sending of the spirit) is present in this anamnesis, granting us communion with himself. The eucharist is also the foretaste of his parousia and of the final kingdom. (WCC: 11)(Mitchell, 165)

The focus of this interpretation is on relationship: God to people through the revelation that is Christ; Christ to people in a list of specific roles; past, present, and future to eternity; and earth to kingdom.

While the memorial has been interpreted as containing words which institute and establish the communion, contemporary interpretations tend to emphasize the whole eucharist as consecratory and redemptive rather than one or another particular sacred moment (Mitchell, 161-62), highlighting once again the interplay of parts and the dynamic quality of the rite. The basic recursive pattern, which integrates with increasing complexity the serial presentation of separate aspects of the faith, is evident here: each particular celebration of eucharist gives in the present Christ's gift, which in the preceding praise and thanksgiving has already been celebrated. From the anamnesis the eucharistic prayer moves

to the epiclesis or invocation of the Holy Spirit, the third person of the trinity, who blesses the gifts and givers and unites all the discrete moments and individual communicants into the eucharistic whole.

Fraction and Communion

In Jewish tradition the simple act of dividing bread for sharing is accompanied by the blessing, but the third action of the eucharist, the breaking of bread or fraction, is done in silence, contrasting the elaborate eucharistic prayer which precedes it. Silence returns attention to the rite as physical enactment. But the silence and simplicity of the gesture yields quickly to verbal reinforcement of the crucial eucharistic meanings. As Dix puts it, "symbolism laid hold of this part of the rite even in the apostolic age" (132). In the Book of Common Prayer, Rite II, the fraction is understood as the new Passover, the new covenant, "the new Exodus in the death and resurrection of Christ" (Mitchell, 176). Moreover,

> Christians have seen in the breaking of the bread a symbol of the breaking of the Lord's body on the cross and of their own need to be broken in order to share in the life in Christ and share life with others (Mitchell, 175-76).

As a transition from fraction to communion, the bread and wine are presented with the words, "The Gifts of God for the People of God" (BCP 364) and, in Rite II, are promptly distributed. In Rite I, however, a transition called the Prayer of Humble Access (BCP 337) precedes the communion, reiterating the unworthiness of people for the communion which the mercy of God makes possible.

In all forms of both rites the words accompanying the communion itself are a minimal announcement of the food and drink and their significance. Clearly the focus in both the fraction and the communion is on the doing which binds together the trinity and the people and unites the people as church.

What characterizes the eucharist is its energy, the variety of actions it encompasses, and the complex dynamic among the actions. The offering, understood as the people's acceptance of God's manifestation and invitation, and the eucharistic prayer, the people's "speech act" of praise, thanksgiving, memorial, and interpretation set in motion an inter-active relationship. The people's gifts are an answer to God's gift; the people's praise and thanksgiving are consecration, which is a transformation by God; the people's memorial of the historical Jesus is "the present efficacy of God's work . . . in which Christ acts through the joyful celebration of his church . . . " (WCC, 11). In the fraction the celebrant, acting on behalf of Christ, makes the necessary division of the bread which enables communion; then the communicants accept the broken body by the most basic biological and social gestures of integration -- eating and drinking -- and thereby assume the respon-sibility for re-union which they have been given by Christ. To the last words and actions the eucharist maintains this tensive, interactive character.

The tension of the concluding sequence accomplishes an almost simultaneous fraction and integration. The bread is broken. The people are bound in a communion of the shared bread and wine. The people, now joined, are then dismissed and, having renewed their sacramental identity, they "break up" to go out and do God's work which they have

experienced and celebrated in the eucharist: creation, love, empowerment, mercy, forgiveness, sacrifice, giving, and receiving. The celebrant prays,

. . .

> Send us now into the world in peace
> and grant us strength and courage
> to love and serve you
> with gladness and singleness of heart . . . (BCP, 365)
>
> . . .
>
> Let us go forth into the world
> Rejoicing in the power of the Spirit. (BCP, 366)

And the people respond, "Thanks be to God," as they spread themselves into the world as the extended body of Christ. That final tension, the dispersed body, imparts, as does the ritual as a whole, the mystery of the people's union (we are God) with Otherness (we are not God) and the people's commitment to God's work (we are like God) in spite of their fears, limits, failures, and rejections (we are not like God).

SILENCE, LANGUAGE, AND ACTION: THE SACRAMENT OF QUAKER LIFE

One of John Punshon's themes in Encounter with Silence: Reflections from the Quaker Tradition is his search for common faith on which to found ecumenical conversation. To emphasize that theme, he opens the book with a foreword by Dominican, Matthew Fox who sets the tone of ecumenical dialogue by affirming silence, the primary mode of Quaker worship, as an abiding source of revelation in Christianity. Biographer of Meister Eckhart and translator of Hildegard de Bingen, Fox, like Punshon, has focused on "a theology of the Holy Spirit which derives from mystical experience and leads to prophetic action."

> It is in silence that the spirit of God, the source of all creation and revelation, is allowed to bubble up from its "underground river" (another of Eckhart's images) into our psyches and from there . . . into our culture and its institutions or into new expressions of faith and living. (M. Fox)

While Fox celebrates with Punshon this common ground in the faith, he also points out an impediment to full ecumenical conversation, a difference in priority and expression of faith which, under historical pressures, contributed to the great fissures in Christianity. He criticizes Punshon's treatment of "the role of spirit in matter, in our flesh, in our eating and drinking of the Cosmic Christ of the universe" (M. Fox) Specifically, Fox regrets Punshon's distrust of the sacraments because sacrament, like incarnation, acknowledges what both Quakers and non-Quakers discover in silence: the possibility not of transcending but of transforming the world and human being. That which the Holy Spirit or

the light reveals is realized physically, psychologically, socially, politically, and ecologically.

Matthew Fox agrees with Punshon that all possible ecumenical frontiers must be explored.

> We Christians do not yet know what it is we are outgrowing or what it is we are renewing or even giving birth to or the extent to which the living tradition of the historical and prophetic Jesus has yet to be linked to the mystical tradition of the Cosmic Christ. (M. Fox)

As part of the process of outgrowing and renewing, Fox and Punshon confront the traditional dichotomy between the pentecostal/ prophetic sense of the way God works and the mystical sense. Fox apprroves when

> John Punshon wisely criticizes a theology which he calls `subtly anti-prophetic'. . . . An anti-prophetic bias is also an anti-mystical bias which rationalism and religion's flight from its own mystical traditions spawned. (M. Fox)

While Matthew Fox does not spell it out, he hints that sacrament enables the coordination of the two ways because sacrament celebrates both historical revelation and the immediate revelation of God in persons, in the world, and in a vision of fulfillment by spiritual transformation expressed in such images as the kingdom, the new creation, and the cosmic Christ of the universe. The eucharist, like the Quaker's experience of God as "inward teacher","the seed","the inner light," or "the indwelling Christ," speaks

> to the belief that accompanying and expanding the revelation of God known in Jesus Christ is the ongoing revelation of God to any and all persons and the divinely given and awakened inner potential to respond to this divine presence. (Stoneburner 4)

The Quaker Objections to Sacraments

Despite their desire for shared faith and practice, Matthew Fox and John Punshon acknowledge "the inherent tensions and contradictions . . . in the Christian system as it has come through history" (M. Fox). Both recognize that ecumenism is served by appreciating the diversity of witness, the individual genius of each faith tradition. Thus Punshon warns against a facile identification of the experience, meaning, and work of silent waiting on the light with the experience, meaning, and work of the eucharist.

> Early Quakerism . . . was revolutionary in intent. It denied any connection at all between rituals and faith, thus making it almost impossible to draw a clear parallel between the silent meeting for worship and the holy communion, however observed. Quakerism is a radical critique of the church as an adequate vehicle for the Christian faith, not just a movement for reform. Hence the impossibility of making a straight equivalence between the silent meeting for worship and the holy communion. (Punshon 123-124).

This breach with the church's sacraments is not mended simply by assurances that they are not what they appeared to seventeenth century Quakers -- the automatic instruments and the only means of grace meted out by a remote priesthood (J. Marshall 3) -- but are living experiences of divine-human encounter. Nor can a broader concept of sacrament as the ritual enactment of "distinctive beliefs, attitudes and actions of any religious tradition" (Jennings 504) encompass Quaker faith and practice. The Quaker objection is precisely to ritual, whatever that ritual intends. In fact "intention" is the problem with ritual. The task of an ecumenical dialogue is to understand what such a thoroughgoing and

lasting rejection of the church's central celebrations has pointed toward.

Both Quakers and non-Quakers have tried to show parallels between Quaker silence and the church's sacraments, but it is the difference between them that points the way to Quaker sacramentality. Waiting in silence may be the standard gesture of opening to the light and to God's love and leading, but the Quaker does not expect the light as consequence of the waiting nor does waiting enact the coming of the light to the silent worshipper or the meeting. Strictly speaking, waiting in silence is not an invitation to grace or a sign of grace. Hugh Barbour characterizes waiting by contrasting it to a whole array of consolations which seventeenth century Quakers considered diversions from radical openness to God. Both rule-keeping and doing good were "will works" which could prevent deeper obedience. Both commitment and confession were inappropriate to the condition of waiting because commitment ended the process of self-surrender while confession divided the self into the inner confessing self and the objectified sin or evil from which it detached. Likewise conscience could work against the light as could dependence on God's absolute mercy or Christ's justification (H. Barbour 103-04).

Quaker witnesses speak, as Punshon does, of experience beyond faith commitments.

> I am called into the presence of truth. Commitment goes far, but at this point abandonment is called for. (Punshon 113-14)

It is this abandonment which George Fox (1624-1691) and other Quakers describe repeatedly in their journals, as in the instance when Fox was confronted with a frightening experience of doubt and temptation.

> But in as much as I sat, still and silent, the people of the house perceived nothing. And as I sat still under it and let it alone, a living hope shone in me, and a true voice, which said, 'There is a living God who made all things.' And immediately the cloud of temptation vanished away, and life rose over it all, and my heart was glad, and I praised the living God. (G. Fox 25)

While there is much testimony in Christianity to personal revelation which results in consolation, communion, and conversion, Fox's "sitting under" is of a different quality in that it sets aside all images, traditions, and practices of faith, all previous modes of revelation.

> Not appealing to some authority, such as Bible, ecclesiastical figure, or religious thinker; not arguing on the basis of reason; not setting out to study the issue or to explore it in conversation; neither disregarding it nor succumbing to it -- Fox sat still and silent. (Keiser 2)

As the foremost, preacher, writer, and gatherer of meetings in early Quakerism, George Fox recommended that "all wait patiently upon the Lord, whatsoever condition you be in . . ." (G. Fox 12). One challenge for Quakers has been to transmit this "way" of waiting, to recommend it through personal stories and by example, without suggesting a paradigmatic experience or interpretation. The journals and letters of individuals and the minutes of meetings record particular insights or advices and individual experiences of revelation, but these do not stand as authoritative prescriptions. Punshon explains the source of authority.

> [R]evelation comes directly to every human being, without exception. Not everybody responds to revelation; we are free to ignore it or disobey it as we wish. It states but does not compel. . . . Our manner of reception has to be intimate and personal, for we are persons, but that does not mean that there can be no public truths to which our understanding must bow. It means simply that

> for us to receive something as a spiritual truth, it must come to us from God alone. There are truths God teaches us directly without intermediary. There are lessons that come to us to recognize as truths. The point at which what is learned becomes truth is the point of revelation. [emphasis added] (Punshon 118-119)

Quakers have protected the authority of this inner process of accepting by avoiding rituals and sacraments and by treating the teaching of ministers and of sacred books not as special means of grace or vision but as individual witness which achieves the authority of truth when revealed in each individual. The work of Christ, the authority of Christ, is in hearts, not in creeds or doctrines. If Quakers deemphasize the personhood of God and the historical life of Jesus by their use of such images as light, seed, spirit, principle, it is in order to emphasize the necessity of each person's realization of truth. In a letter to a critic of the Quakers' priorities, Isaac Penington (1616- 1679) defends their relationship to Jesus Christ.

> That charge of thine on us, that we deny the person of Christ, and make him nothing but a light or a notion, a principle in the heart to man, is very unjust and untrue; for we own that appearance of him in his body and flesh, his sufferings and death, and his sitting at the father's right hand in glory: but we affirm, that there is no true knowledge of him, or union with him, but in the seed or principle of his life in the heart, and that therein he appears, subdues sin, and reigns over it, in those that understand and submit to the teaching and government of his spirit. (Steere 144)

The Sacrament of Quaker Life Interpreted in Terms of a Metaphorical Model of Sacrament

But throughout Quaker history, this focus on inner experience of the Spirit has not implied a solitary mysticism or a renunciation of the physical, social, or political life.

> Quakers often used dualistic language, but they seem to have been groping for a way beyond the [necessity of identifying] some aspects of reality with sin and darkness. . . . All aspects of existence could be distorted by sin, but similarly all aspects could be perfected. Without the . . . dualism of spirit and nature, study of the natural world and spiritual understanding influence each other. (Stoneburner 10-11)

Moreover, what Quakers accomplished by not allowing ritual enactment of the relationship between inner revelations and the world was not a rejection of sacrament but an affirmation of life in all its aspects as sacrament. Quakers created a particular kind of community, "a whole way of being, a whole manner of coming into relationship with God" (Punshon 113). Their way can be described in terms of the metaphorical model of sacrament which highlights multiple and seemingly contradictory modes of relating to God. In sacrament people not only endure but celebrate what cannot be resolved or understood but what, like the meaning of a metaphor, can be experienced and shared. Furthermore sacrament affirms concerted action taken in response to the unresolvable mystery of relationship with God. People partake of the new creation or the kingdom -- sacramentally -- bearing and rejoicing in a fully realized relationship with God that is both present and in the future, both "always-already" and "not-yet" (Tracy 425-38). And, knowing — sacramentally -- that they are invited by God to do so, they share God's creative work. This work requires the ability to see what is and to envision what is to come; it requires openness to the present moment, to all revelation that can inform the present, and to a future which is conceivable because it has been experienced — sacramentally.

The sacramental life requires attention to the Spirit's voice in all things. Isaac Penington warns a friend, "Take heed of despsing the day of small things, by looking after some great visitation . . ." (Steere 149). Quakers experience the always-already, not-yet of the new creation by accentuating the tensions in daily life such as those between their professional roles or family roles and their spiritual equality; thus they seldom use titles of position or family role designations, preferring to remind themselves in such ordinary ways that what is possible is also present if it will be accepted. Carol Stoneburner, explaining the experience of Quaker women, notes that they have not received the sacraments from the hands of a male authority but, "have participated actively in the sacramental qualities of all life"; thus giving birth and washing are both baptism and all meals are communion (13). The spiritual life is communicated in terms of daily work, rendering the doing of that work sacramental, as in Penington's council to

> know thy heart more and more plowed up by the Lord that his Seed's grace may grow in thee more and more, and thou mayest daily feel thy heart as a garden, more and more enclosed, watered, dressed, and delighted in by him. (Steere 149)

Refusing a special moment for enacting eschatological tension, for experiencing the multiple modes in which people relate to God, for enduring and celebrating the full play of human and divine relationship, Quakers have tried to maintain that intense sacramental experience in day by day living by constant reminders, built into the pattern of life, that the new creation is ongoing creative work which they share with God.

Fully realized silence experienced individually or corporately in meeting for worship is often called "centering" or "centering down" which

seems to imply that this part of the sacramental life is the central or most important part. But silent waiting at gathered worship and at other times, is an act of self-giving and is to the sacrament of Quaker life what the communicant's gift or offering is to the eucharist as a whole. It is a movement in the dynamic which indicates willingness for the sacramental relationship with God which forms Quaker life. Each silence is both a new abandonment beyond all previous commitment and a reflexive return in the ongoing pattern of "action emerging out of receptivity, and receptivity following action" (Stoneburner xix). As a new abandonment it is what it was for George Fox, the radical critique which recognizes language and meaningful action as limited, inadequate, and in some cases, grievously distorted approaches to truth. It is also the yielding of all authority and meaning-making to God. As reflexive return it is the way to bring everchanging relationships, concerns, and actions to the abiding source of truth which is revelation "in the heart."

The Quaker's experience of God's presence is an "experience of 'the Other'. This phraseology suggests the radical difference between the human self and the divine presence" (Stoneburner 8). Yet, by insisting that the Other is not remote but experienced within, Quakers affirm intimacy and the possibility of union with God. The experience of the Other as indwelling and transforming is the kind of irresolvable experience which can be compared to a metaphor. God is Other, we are not God; but that which is in us is of us. Quakers scruple against the kind of experience some mystics describe as oneness or identity with God. Yet the mystical experience of the Other within is very close to the dynamic which can be expressed as the metaphorical relationship: we are God, we

are not God, in which the experience inheres in neither meaning alone but the two tensively together.

Matthew Fox and John Punshon are right: Quakerism is a mysticism, and it is also a religion of prophecy and outward witness. The mystical experience of the Other is shared, and the paradoxes are lived out sacramentally. Placing Quakerism in a world-wide context of mysticism, Douglas Steere notes its corporate character (16). It is corporate not only because the experience of silent waiting is shared in meeting for worship and because the mystical experience of God's presence is felt by a gathered meeting, but also because Quakers are highly communicative and purposeful. Revelation realized in silence breaks forth into language and action. Explaining how silence, language, and action work together Mel Keiser contrasts the language George Fox used before and after his first convincing inner experience.

> Prior to this experience, he speaks of his search as looking for wisdom (4 & 10; cf p. 1) and describes his experiences of God as being taught (p. 1) and commanded by God (p. 3), as a consideration arising or an opening occurring (p. 7), as being moved (p. 9) or being gently led by God (p. 11). But it is only after this experience that he begins to use these metaphors of seed and light, and to advocate waiting in silence. (Keiser 8, with page refernces to The Journal of George Fox, ed. Nickalls)

As Fox develops them in his writing, the images of light and seed are extraordinarily flexible and bold, capable of powerfully bearing the Quaker way. Keiser points out that they express both the gradual illumination and the sudden shock of exposure, both the gradual and subtle growth of the seed and its destroying and recreating power. The light does not simply display the truth but has to be actively felt; the seed is always present within but has to be acknowledged and nurtured.

The two images also interact, light working as the sun which germinates the seed. Fox combines them in extended metaphors which employ both their destroying and creating aspects; "Thou, Lord makest a fruitful field a barren wilderness, and a barren wilderness a fruitful field . . ." (G. Fox 10). Or, using the first person of direct witness, he mixes new extensions and elaborations of his image with Biblical allusions, achieving the visionary extravagance of the Book of Revelation. The effect he achieves correlates with the Quaker sense that the truth of scripture must become apparent to each person through individual revelation.

> Even through that darkness was I brought, which covered-over all the world, and which chained down all, and shut up all in the death. And the same eternal power of God, which brought me through these things, was that which afterwards shook the nations, priests, professors, and people. Then could I say I had been in spiritual Babylon, Sodom, Egypt, and the grave; but by the eternal power of God I was come out of it, and was brought over it and the power of it, into the power of Christ. And I saw the harvest white, and the Seed of God lying thick in the ground, as ever did wheat that was sown outwardly, and none to gather it; and for this I mourned with tears. (G. Fox 21)

Fox and other Quakers, past and present, create a sense of physical intimacy with imagery of touch, taste, and smell, the senses which require closeness. These, in unusual combinations with the distal senses of sight and hearing and in combinations which produce synesthetic effects, evoke strangeness and newness from the intimate, natural images so that they convey the re-vision, reorienting, and re-unifying of the natural life in the new creation. Fox also evokes his inner experience in kinetic images that produce the sense of right motion leading to right orientation or place: "I was come out of it" or "brought over it," or

came up "through the flaming sword." Friends have continued to speak in these terms of orientation in space, "getting atop" or "sitting under" a concern, or "centering down" or "going down into the light" as well as "coming up into" it.

From their beginning Quakers have shared inner experience without establishing authoritative interpretations, creeds, or rituals; and with sharing has come community and concerted work toward the new creation. Silent waiting has brought inner revelation which in turn has brought intimate but unsettling imagery in speaking and writing and a vocal ministry in which people speak "in the life," using ordinary language and occasions to convey the Spirit's meaning. Language has united Quakers for action in behalf of personal and shared vision. The interplay of language, silence, and action has made for a special combination of the mystical and the pentecostal/prophetic traditions.

Besides maintaining the mystical dynamic, we are God, we are not God, Quakers have affirmed a practical likeness to God by their movement from silence into the creative language which makes connections among people; by their participation in God's work toward just and loving personal relationships and social structures; and by their recreation of the freshness in the physical world, which Fox called "the redemption of the body and of the whole creation." Fox and the early Quakers developed the image of the Lamb's War from the Book of Revelation to express the process of trying to be like God.

> . . . there were two dimensions of the Lamb's War. The first was the inner struggle to be aware of and responsive to the inner seed. The second was of carrying out the new relationship with the presence of God through transformation of the larger society. (Stoneburner 4)

The Lamb's War conveyed the difficulty and responsibility of God's work and the personal as well as social resistance to it. It expressed the struggle to be like God by sharing the pentecostal experience, proclaiming the prophetic criticism and vision, and doing the creative work. But with equal strength it expressed the urge to resist, to declare unlikeness to God.

> Both men and women fought against the Light which penetrated the darkness of their sinful lives and consequently exposed a considerable amount of distressing self-knowledge. This caused a quaking of the human spirit (one basis for the name "Quakerism") for men and women. Both sexes had to fight against the desire to fill their lives with distractions so that they could avoid despair. Quaker spirituality involves, therefore, the determination not to flee but to wait patiently and quietly for the Light to flood one's life. . . . Accounts of both sexes suggest that this was a central but exceedingly difficult struggle for everyone. (Stoneburner 8)

The dynamic of living and worship is, as Quakers experience and describe it, a sacrament. It is a life which participates in the extreme, direct, mystical relationship with the Other who dwells intimately in people. It is also a life which participates fully in the mediated ways of relating to God and to one another, ways which involve language and symbolic action as well as work in and sometimes necessarily over against communal, social, political, and religious structures. And it is a life that confesses, even in the acceptance of the once pejorative name "Quakers," human resistance, terror, and struggle. One way of putting it is that Quakers are deeply involved in trying to do what God does by doing what people do in a certain way. Contrary to atthew Fox's judgment, Quakers, like communicants of the eucharist, know "the role of

spirit in matter, in our flesh, in our eating and drinking of the Cosmic Christ of the universe."

CONCLUSION

As early Christians kept eating their meal by way of holding together the many dimensions, old and new, in their experience of faith and George Fox sat under his doubt, his fear, and his great need; so in many important matters, we know that certain people, ideas, things, and experiences relate in significant ways, although at first it may be hard to say how. Writing under the heading "Conclusion," I appeal to this way of bringing together that which would be together and permitting the relationships to grow (seed and light). What do I conclude about the relationships among writing, sacrament, and the teaching and learning of science? What significance do these relationships have for theories of education? I have concentrated in this paper on bringing the concept of sacrament into a focus which I think will help bear it over into a new context; I have prepared for but have not articulated its relationship to the other concerns. So at one level my last word is simply and honestly: writing, sacrament, the teaching and learning of science, and theories of education need to stay in each other's presence, need to be repeatedly brought together in our consciousness as we learn how they relate. This inconclusive recommendation is a rhetorical "place" from which to join public conversation.

From the situation I have made in this paper, I want to listen to and read those who are teaching science and creating the curricula of science and those who are pushing our awareness of scientific process toward its deepest possible meanings by their honest, imaginative

writing. At the same time, I want to stay in touch with those in rhetoric who help us discern the implications of the many kinds of discourse and thereby help us not only make better choices out of a wider range of rhetorical options but also invent new ways to develop the consciousness we need, a consciousness in which we learn, as Jim Corbett puts it, how to live shalom and hallow the earth.

Political and theological conversations contribute importantly to this consciousness, but its strongest articulations may come from community-based congregations which respond, out of their sense of being a part of a "historically persisting covenant people" (Corbett 185), to the urgent needs and sufferings in contemporary life. So on one hand, I want to hear and participate in specific congregations as they try to live sacramentally in a scientific age, and on the other, I want to hear voices from distant times and places. Because the quest to live shalom and hallow the earth is an abiding theme of art, myth, and religion, much of the conversation I seek must be found by recovering old voices and setting them in dialogue with contemporary voices.

Most specifically, I seek conversations which can help me understand how writing in the sciences and in the teaching and learning of science can contribute to hallowing the earth. One way I hope to go about this is by using the metaphorical model of sacrament, and other approaches I may find or make, to think about interpretations of scriptural texts not only as the clarifying, criticizing, and reinventing of stories about relationships among God, people, and the world but also as an activity in which we exercise our relationships with God. In other words I want to think about interpretation as sacrament, that is, as language work in

response to God's "language work" -- Word and Book. Then, I want to take that a step farther and imagine all word craft and book craft as potentially sacramental work, in the context Schillebeeckx invokes when he says, "not only the physical but everything else which belongs to humanity is experienced as the sacramental means of God's presence" (The Schillebeeckx Reader 210). As yet another step, I want to talk about the special responsibility and sacramental work of the scientist who writes in acute knowledge of life, earth, and universe and, because of this, in acute relationship with mystery.

However, for the time being and for an immediate conversation about teaching science, I need look no farther than The Association of American Colleges' journal, Liberal Education (March-April, 1988), which is devoted to discussions of revision in post-secondary science curriculum. Noting achievements since 1982, when the recommendations of a study committee formed by the National Research Council were "simply better teaching and restructuring of courses as well as an increase in science requirements for the B A," these current articles recommend unanimously that science teachers do the creative work of making science more accessible to nonscientists (Dunathan 4). They recommend that students who plan to pursue careers in science and all of us who live with the impact of science must know more about its history, sociology, and politics, must learn its human side, and must not just learn its data but experience its creative processes.

Robert Pollack, professor of biological sciences and dean of the College at Columbia University, reports on what Columbia is now teaching undergraduates. Stressing how scientists think and work, Columbia's

courses are process-centered and the texts are the great papers in science.

> A scientist asks questions about nature, and then tells stories about the answers she or he gets back. The asking process is called "experimentation," and the storytelling takes place through publications, meetings, grant reviews, and the like. The stories have kept the same format used by Galileo.
>
> . . .
>
> The report of a successful test of a new model can be an exciting piece of literature, as well as a triumph of insight. Such reports can and should be made accessible to anyone learning about science. (111)

In one interdepartmental course, "Theory and Practice of Science,"

> [t]he question "What is science?" is posed from the start, and as students read papers and study the theory and experiments behind those papers they begin to piece together an answer more satisfactory than what any scientist could tell them. Our nonscientists do struggle with the material, but in the end they have an understanding of science that is not imparted, but discovered. (12)

Mathematics is taught in this class "from the ground up," and in the very first semester students tackle nuclear fission and read Faraday, the Curies, Bohr, and others. The second semester also begins with mathematics, but "the emphasis is on the basics of discrete probability, information theory, and statistics" (14). Biological studies lead to Watson and Crick's work on the genetic code, and the exam is taken from current papers on genetics in Science, Cell, Nature, or the Proceedings of the National Academy of Science. The subjects, nuclear fission and genetics, prepare students for a scientific grounding in urgent contemporary issues and teach them to read the science so they can continue to follow these fast breaking areas of research.

> To teach science to a class of scientifically naive students in this way permits us to raise the most serious scientific questions of our day in order to examine the individual responses of scientists. Unanswered questions become the norm, not the exception, since the emphasis is on an open-ended process of model building rather than on the elaboration of a mass of "known" facts. (Pollack 14)

Pollack reminds scientists that the ancient questions, "What is the universe made of?" and "What am I made of?" are "the very root of our profession and they place us in the larger culture."

> [T]eaching science in this way cannot properly be divorced from teaching politics or teaching art history. All must be embedded in a coherent curriculum, one in which argument and discussion are encouraged, and in which all are seen as open-ended rather than complete. (15)

But, in spite of this inclusive perspective, he identifies the creative event in science as the "demonstration that the prediction was correct; from this demonstration will follow major consequences for the next prediction and perhaps for society as well" (15).

I applaud Pollack's vision of teaching science as a creative process seen in its larger context and studied in relationship to other disciplines, but I question his specification of the creative event of science as the "demonstration that the prediction is correct." I think of the story June Goodfield tells of Anna Brito's scientific work in which Brito describes her process as falling in love with the cell: "the building up of attraction, and the object of your attraction eludes you. . . . So we try to get better and better concepts, trying to get to know the cell" (229). And I think of Barbara McClintock's respect for multiplicity and difference — the integrity of each kernel of corn, chromosome, plant -- which survive our patternmaking. McClintock's

practice of her science was described as being like writing the "autobiography of every plant," the strange notion of the observing scientist telling the plant's own story of itself. Writing the plant's autobiography is different from writing the story of the plant as it relates to the scientist's prediction because it confesses the creative act of imaginative identification which is a means to intimacy and because it yields, imaginatively, the locus of authority. I have to ask with Evelyn Fox Keller and Ernest Schachtel whether the long, silent, careful development of the quality of attention and the capacity for intimacy with that "other" which is studied is not just as much a creative event in science as the "demonstration that the prediction is correct." I have to ask, what, in Jacqueline Ludel's search for knowledge of the pigmy sperm whale through observation and dissection, is the creative event and what is the creative event in a student's repetition of a classic brain dissection. Both stories tell the creation of deeper consciousness, a consciousness which I have suggested is best understood as sacramental; both stories raise profound questions which do not fit the criterion for "scientific good taste" to which Pollack alludes, namely,

> asking the largest possible answerable question at any moment. The creative element lies in knowing how far to go, because one step larger becomes untestable by definition and is therefore a waste of the scientist's time. (11)

I question Pollack's criterion for whether a scientist or a student of science is using time and mind wisely in the service of science, life, and world. Lewis Thomas reminds us that science is as much about being wrong as about being right, as much about what we don't answer as what we do.

> Any beetle can live a flawless, impeccable life, infallible in the business of procreating beetles. Not us: we are not necessarily good at anything in particular except language, and using this we tend to get things wrong. It is built into our genes to veer off from the point; somehow we have been selected in evolution for our gift of ambiguity.
>
> This is how we fell into the way of science. . . . [I]t keeps changing, shifting, revising, discovering that it was wrong and then heaving itself explosively apart to redesign everything. It is a living thing, a celebration of human fallibility. At its very best it is rather like an embryo. (19-20)

He would have us include in education the recognition of how little we know, even about our "most spectacular biological attribute," language.

> We are aware of our consciousness, but we cannot even make good guesses as to how this awareness arises in our brains -- or even, for that matter, that it does arise there for sure. We do not understand how a solitary cell, fused from two, can differentiate into an embryo and then into the systems of tissues and organs that become us, nor do we know how a tadpole accomplishes his emergence, or even a flea. . . .
>
> The culmination of a liberal-arts education ought to include, among other matters, the news that we do not understand a flea, much less the making of a thought. We can get there someday if we keep at it, but we are nowhere near, and there are mountains and centuries of work still to be done. (20)

Thomas goes on to remind us of the part error plays in the creative process of science, "a word which comes from the old Indo-European root meaning to wander about, looking for something." In fact one of the most important parts of scientific writing is the error analysis, the story of human wandering around within the report of the succesful test of a new model. But there should be a place in scientific discourse not only for the successful test and its margin of error but also for the unsucessful work, the surprises and discoveries to which it leads, and the humility. Thomas reminds us that "humble" and "human" share a root meaning of

"earth." Humility about human limits and possibliities, humility about our vast responsibility in our search for knowledge, humility in our confrontations with the mystery pervading knowledge must be part of science's story. Broadening the study of scientific discourse from the classic paper to multiple discourses -- stories of processes, failures, and doubts; the notes and meditations of scientists; the imagery involved in all creative process; as well as the demonstration itself -- could challenge the concept of what the creative process in science includes. In another of the articles in Liberal Education, Shelia Tobias proposes that students having trouble with science or math keep notebooks in which

> [t]he left side of their page is reserved for "thinking out loud" including (never excluding) what might seem irrelevant to the teacher. The right side of the page is reserved for straightforward laying out of problems, sketches, and calculations. (21)

Such a simple suggestion has value as more than a remedial tool. A student notebook containing many different ways of approaching the scientific subject can become a model for rich internal dialogue in the process of studying and practicing science and can provide practice toward an enriched public discourse.

By expanding what is read and written, by allowing cross pollination in the various modes of discourse which tell science's story, by permitting an expanded canon of literature to challenge science's self image, those who teach science may find themselves taught, and the next decades may record fertile rethinking of science curriculum and teaching. My belief that science is sacramental work and that it must play a crucial part in hallowing the earth calls me to continue my conversation with

sacramental traditions and new visions of sacrament. I am especially interested in how eucharist communicants and Quakers are reaching toward science, incorporating its discoveries into religious imagery, integrating scientifically expanded knowledge of world and being into the experience of faith.

Contemporary eucharistic theology has concentrated on the church as eucharist of the world, that is, as the body of Christ inhabiting and nourishing the world. Acting in the world as sacrament, the church offers to all aspects of contemporary life the kinds of relationships it experiences in the eucharist: love, empowerment, mercy, forgiveness, sacrifice, giving, and receiving. Counterpoint to this emphasis in eucharistic theology is the ancient imagery Sallie McFague (who has moved in her latest work toward a better appreciation of sacrament) and others are recovering of the world as God's body (Models of God 61).

> What this experiment with the world as God's body comes to, finally, is an awareness, both chilling and breathtaking, that we as worldly, bodily beings are in God's presence. It is the basis for a revived sacramentalism, that is, a perception of the divine as visible, as present, palpably present in our world. But it is a kind of sacramentalism that is painfully conscious of the world's vulnerability, its preciousness, its uniqueness. The beauty of the world and its ability to sustain the vast multitude of species it supports is not there for the taking. The world is a body that must be carefully tended, that must be nurtured, protected, guided, loved, and befriended both as valuable in itself — for like us, it is an expression of God — and as necessary to the continuation of life. We meet the world as a thou, as the body of God where God is present to us always in all times and in all places. In the metaphor of the world as the body of God, the resurrection becomes a worldly, present, inclusive reality, for this body is offered to all: "This is my body." (McFague, Models of God 77)

Both conceptions, people as church hallowing the world and world as God, holy, and calling us to our part in holiness, compel us to realize our

scientific relationships to the world as (to use Martin Buber's language) I-Thou relationships.

Writing about Quaker life as sacrament, I focused on the images of religious experience and development -- light and seed. These and other Quaker images have much to offer us in the work of hallowing the earth. The language for working with God toward fulfilled relationships centers in the image of the New Creation, the world itself redeemed. Paul Lacey compares the Quaker's inner realization of these images with the creative impulse or "vatic voice."

> The vatic voice takes us by surprise; what it gives us is incomplete but original. In speaking to us, it calls us to the work of completion, but that must be accomplished by working with it, obeying its direction even if we do not understand it. Even more important, the voice comes to us, on its terms. We receive it, we do not originate it. It is within us but we do not own it or determine it. (16)

Lacey's description differs from the Quaker's realization of religious imagery in that for the Quaker inner experience makes inherited images original and relevant to the life of each person. It is an "originality" which affirms the continuity of revelation. But the Quaker experience is analogous to Lacey's description in that what the vatic voice gives is incomplete and must be realized by our work of completion in which we are guided by its imperatives. Quakers reexperience inherited images by listening inwardly to the surprise, the call for completion and interpretation, and the new directive which lives through the image. For instance, the traditional images, seed and light, take on contemporary resonances from science. What we have learned in genetics about DNA, the "seed" which holds the full potentiality of each life,

powerfully affirms the way Fox and other Quaker witnesses used the image. The physics of light, by which we know it as the arbiter of time, the criterion for our orientation in the universe, tells us our "place and time" in relationship to vast otherness. These contemporary meanings of light interact richly with the image in the Gospel of John which relates life, light, and Word and with the Quaker image of inner light which leads to outward responsibility. The interaction of these meanings makes a new living image which is helping me call scientific work and word to the ongoing sacramental work of hallowing the world.

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