

DIALOGUES ON SCIENCE AND RELIGION

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In the late 1960s I was invited to prepare a chapter on the religious development of college students for a commissioned handbook of research on religious development edited by M. P. Strommen (*Research on Religious Development: A Comprehensive Handbook*, 1971). My research confirmed what popular opinion held: the general effect of college on students' religious beliefs was to make them more liberal and, therefore, less fundamentalistic or orthodox. The research also revealed some major weaknesses in methodology: the lack of carefully controlled studies and the lack of a rationale regarding what should happen to religious beliefs during the college experience, particularly concerning the effects of the academic experience on individual students.

Since that time the work of William Perry (*Intellectual and Ethical Development in the College Years*, 1970) has become available. Perry's work with a group of students at Harvard showed a systematic change from a dualistic framework (ideas are either right, good, and mine or wrong, bad and yours), through several stages of relativism, to a recognition of the need to make commitments and finally to making commitments as to the worth and truth of ideas. This framework provided a possible way to examine the development of religious beliefs of college students and led us to ask whether Perry's general intellectual development model fit religious data in particular.

To answer that question we needed to create some instruments with which we could gather the data. We are currently engaged in that instrument-building phase. As one step in that process, we interviewed several well-established LDS academicians located at various institutions of higher education in the United States. We attempted to interview one from each of the several academic disciplines in order to get a cross section of the possible areas of conflict that may have been encountered by established professionals who had had a thorough grounding in LDS theology and Church practice.

The interviews exceeded our expectations. The men (unfortunately, none were women) were candid, open and cooperative. The results provided some excellent material for our instrument-building phase. The interviews were conducted by Brent Miller, a graduate student in sociology at the University of Minnesota. His gentle manner and carefully thought-out questions established the conditions under which such sensitive material could be gathered.

We had collected the data with the explicit promise that they would be kept confidential. For this special issue of *Dialogue*, we selected three interviews with scientists which we thought were representative of the range and nature of the content of all and requested permission to publish them anonymously. Each person was gracious in granting such permission. Additional interviews will appear in subsequent issues of *Dialogue*.

The reader should be cautioned about making any generalization from these interviews, especially in regard to the academic discipline of the respective respondents as it relates to their religious beliefs. These are simply three very interesting and highly individualistic scientists who openly and honestly discuss their religious feelings and beliefs.

DIALOGUE WITH A SOCIAL SCIENTIST

We are interested in religious development in the sense that you have used that term in your work with family problems. Not that it is cumulative, but that there is an ebb and a flow, and like everything, it has stress and crises. Those same experiences exist in the lives of everyone as far as religion is concerned. Would you reflect for us upon the time when you felt most involved in the Church?

I am sure that it was during the period when I was in the mission field in France and Belgium. I would have to place that probably highest and then the period when I was a branch president during the time I was a graduate student. These two periods were periods when my involvement was substantially more out of my own initiative rather than participation for the sake of duty. I think it was a period when I could speak convincingly, bear testimony and not hedge and hem and haw about it with caveats and reservations.

I am interested to know if those times when you felt most involved, in the mission field or as branch president, were also the times when you felt most enthusiastic about the Church?

There were periods when I was more concerned with internal operations of a local

branch or ward of the Church and less concerned about the relationship between the Church as a whole and the society in which it was operating. These were periods in which I felt very responsible for day-to-day and week-to-week performance by others. It was a period of managerial and promotional activity, not of great reflection. During the time I was branch president, I gave talks representing the Church in other churches, largely Protestant churches, and I took a positive stance. I saw some of the achievements in the larger Church in a kindly fashion. These were exceptions, I should say, to my concern with the internal operations in my branch. I was released from the presidency when I left for a position at a university in the Midwest. I probably became more reflective as far as the larger Church is concerned and this reflectiveness may possibly have come through as more negative criticisms of the Church.

We can come back later to this more reflective period. Would you see your family as having a great effect on your activity in the mission field and as a branch president?

I was the oldest member of a family of six boys and two girls, and it was my position as the oldest to be an example to the rest. We had daily family evening hours in which we systematically went through the scriptures. Sometimes these hours were devoted to the history of Mexico, Utah and of the Church, linking these together. I received the kind of orientation to the Church that would make it difficult for me to argue about whether or not my membership was voluntary. I cannot remember when I did not sense that my forebears had participated in an epic of great significance. Some of my earliest memories are of stories of the pioneers. My great-grandfather, Erastus Snow, with Orson Pratt, was one of the first to enter the Salt Lake valley. Another great-grandfather was a personal bodyguard of Brigham Young and Joseph Smith, a U.S. marshal and a missionary to the Indians. As a member of my family, I considered myself one of the elite of the Church. I felt responsible early as a child for maintaining that sense of being among the chosen. And that elite included John A. Widstoe, who had been president of Utah State and president of the University of Utah; I knew him personally and saw him as one of my heroes. It also included Franklin Harris who was president of BYU and later Utah State. It included David O. McKay. There just was no avoiding an integration into this elite group chosen to lead the Church. My parents knew personally each of the presidents of the Church during their lives. Joseph F. Smith was the first; he married them. This continued with Heber J. Grant, who personally called me on my mission and told me he was putting through a call for me to go to France. David O. McKay set me apart for my mission, and later, he was the choice of my bride to marry us since she was also a member of the closely knit McKay family network. So for me to doubt or to deviate seriously was to deny a heritage important to me and hurt people important to me and significant in the Church.

This is why I say that the high point in my participation in the Church on my own initiative was in the mission field and as a branch president. I literally had been brought into the world to a position where it was expected that I would fulfill patriarchal blessings and heritages, unearned but nevertheless mine. It was a heritage I have valued but have underutilized because I could perhaps have built

upon that to have made a career within the Church. I had all the right ancestors, all the right genealogy, all the right connections, and I could have utilized those connections. I recognize that you do not do those things unless you are called, but if I had been so minded, and some of my associates were so minded, I could very well have built upon those particular connections. No other member of my family knew that as clearly as I did. Do you see why my belonging to the Church was something more than voluntary?

With that personal heritage in the Church, how do you assess the period after you left graduate school and took your first professorial position? You mentioned that you experienced possibly a more reflective, critical period in your life regarding the Church.

It is hard to assess what happened. We were the only Mormon family in the town and the closest Church was about eighty miles away. We became active in the Methodist Church; my wife and I were invited to serve as co-superintendents of Sunday Schools and I played the pipe organ for the Methodist Church. The pastor of the Baptist Church was doing his master's thesis with me and the Congregational Church minister had me fill in for him when he went away for conferences. We were active as Methodist Church members, but we were known everywhere as Mormons. It was a good religious experience for us, but it was during that period that I received a wire from the Church Commissioner of Education notifying me that I had been appointed president of Ricks College, a position for which I had not applied. The appointment did not seem to be contingent on my accepting it. I countered with, "I am not free to take a position of this sort." I was head of a small department and could not be freed immediately. But I told him that I would come out and look it over if he would send me expense money. He countered that my appointment had been cleared, the Brethren had approved my appointment. He was not asking me "if I would accept"; I *had* been appointed! Finally I went out and spent some two weeks between quarters looking the situation over and decided not to take it. I indicated that I could only be interested in the position if there were a separate board of trustees made up of local people from the region. This was probably the first opportunity that I had to return to the Rocky Mountain country and to resume my rightful place among the elite. But when I got there, I just did not take advantage of it. I was told that if I made a go of it at Ricks, I would be the new president at Brigham Young University. I suppose I was appalled that there would be no more competition than that.

President George Albert Smith once visited us and gave me a view of my life's mission that I had not considered before. I told him that I was one of the first scholars ever to be employed full time to do nothing but teach and do research in my area of specialization. I told him that I occasionally found that invitations to serve the branch or in the district interfered with responsibilities that were emerging in my profession and that this disturbed me. He put his hand on my knee and said, "You can tell any district president, any branch president who asks you to serve in a Church capacity to go back and pray again. Tell them that you have a mission, that your mission is as important as far as the Church is concerned as anything that you could do within the Church itself. Your mission is to discover, if you can, the

secrets of your particular field. And that is a lifetime mission, not a mission that you can take on for two years and then be released. That it is a lifetime mission and you are in this central position of leadership in a rapidly growing field. The Church is interested in the development of that particular field, and you want to do your very best. You do not have to be apologetic about it; you can be assertive about it." This was almost a complete reversal of what I had been taught from childhood on: "Never question if a person in authority asks you to serve. He would not have asked you if he had not given it thoughtful consideration. He is a representative of the Lord. And you must accept his call." Now here was the President of the Church telling me to have respect for my professional mission and to tell local authorities that when Church activities interfere with that mission that I was justified to indicate, "I have to be about my Father's business." It brought a certain resolution to what would be very difficult role conflicts later in my career. I have accepted some church assignments since, but I have kept President Smith's reminder that if I did not value my time, and if I did not value my mission, I could not expect a local Church leader to value it. Somewhat later I was asked by a stake president to become the stake Sunday School superintendent, which would require me to travel throughout the entire area. I told him that I respected his judgment but what he could not know was the nature of the commitments that I had, and I had to tell him "No." He was impressed and said no one had ever turned him down since he had been stake president. I asked him to think about it and pray about it. Before he got back to me with his answer, he had been released as stake president. He later told me he guessed that I was wise to have turned his call down because if I had accepted it that I would have found myself under a stake president who did not share his views of what was involved in the task. He added, "Sometimes we do make errors."

This is rambling a little bit, but I have to say that part of my upbringing in the Church was colored by an enormous status difference between the faculty members who lived in the local ward of my youth and the essentially poor, unlettered, unskilled immigrant members of that ward. Our family provided continuous leadership in all aspects of the ward, but we never really felt we belonged. I always had a sense, while I was growing up, that I was somehow or other a cut above the rest of the members of the local Church. This was not good, because it tended to make me marginal to that particular ward. While I exercised leadership, it was a relief not to have to attend when I was away. That marginality has continued in other places I have lived. Converts with much less education, suspicious of people with education, sure that the educated cannot possibly believe, and sure that they are really unbelieving members of the Church—I had the feeling that if this is what the membership of the Church thinks, then I must not be worthy of membership in the Church. There are perhaps a half dozen wards in the course of my growing up where I felt fully at home, mainly those connected with universities or Institutes of Religion. These were places where I felt there was understanding and friendship, where I could explore all thinking in depth. This affected, I think, in my own development for most of my career, a sense of marginality to the official Church and to the local ward in which I was a member. I think they accept me in my own ward now largely because they accept my wife and because I never turn down an opportunity to serve at the organ; but they are hostile and disturbed by the questions which I raise in group discussions.

Are there any assumptions in the social sciences in which you have been trained that raise issues with the doctrines of the Church?

Unfortunately, yes. Many, many questions. I start with the nature of man and the evolution of man, and the historicity of the Bible, and with the view of the Bible as the word of God. It seems to me that the social and biological sciences do not have answers, but they bring to bear different assumptions with respect to these issues. I find substantially more comfort in the findings of science in these matters than I do in the assertions of Church doctrine, because I think that over time science will be able to break the barriers of lack of knowledge, to fill in corners where we presently do not have answers. The scientific method can and will make sense out of the phenomena that are currently treated as miraculous, as spiritual, which we are told in the Church are not to be understood but to be accepted on faith. My training in psychiatry leads me to see the speaking of tongues, the driving out of spirits not so much as evidences of the devil as the need to heal people with distorted minds. I find no need whatsoever to posit the existence of the devil to account for disordered behavior in people. My reading of the Bible and of other scriptures with my training in social science leads me to see these disturbed people as representatives of their time and place; the accounts of miracles largely as myths reflecting a limited knowledge of man at the time.

These beliefs reach the utmost absurdity to me when they designate the current black population as the descendents of Cain and of Ham and when they use the Bible accounts of the sins of Cain and Ham as explanation for the present benighted state of the blacks in the United States. This is the most extreme case, but it seems to me that social science and a number of Church policies, if not doctrines, collide. I think the glorification of the husband-father as the patriarch and the monopoly by men of the priesthood signify in some kind of curious sense that white men are like gods, which women and blacks can never be. These views that justify priesthood meetings, segregating men from women, when decisions are to be made with respect to the local Church, collide with my professional views with respect to the family and with my egalitarian views that men and women are equal in the sight of God. I think I can trace patriarchal ideas to a rural, agrarian past, but they are treated within the Church as if they are timeless and that in all eternity it will always be thus. Yes, I do find many, many points at which social and psychological science and ideas from psychiatry and philosophy run head on into what some would allege to be the doctrines of the Church.

In a previous conversation you told me that you thought the social sciences and behavioral sciences are of a somewhat different nature than the physical sciences in the degree to which they might raise these kinds of questions with members of the Church who pursue academic careers. I am wondering if you could recount that for me again.

It was epitomized by Lowry Nelson, who is one of the greats in sociology, and Henry Eyring, who is on the Nobel prize level in physical science. Henry Eyring is able to keep his beliefs about the nature of man, about the divine mission of the Church, and about the hereafter separate from his scientific pursuits so that he has a serene and unquestioning view with respect to the Church teachings. An

exception would be those who take Genesis as the final word about the origins of mankind. I have never encountered the anti-evolutionists within the Church who take Genesis literally, but my father who was a professor of chemistry, did have to cope with them, and he said their views were bad science.

The anti-evolutionists?

That's right. He said the story in Genesis is just plain incomplete. It picks up man as a developed being and does not show when he developed on this planet. He would assert that Genesis is primitive man's view of the growth and development of the earth and is not enough for an educated man in our day and time.

Have you resolved the conflict between evidences in the biological and physical sciences regarding the development of man and the scriptural accounts?

Not exactly, but my father seems to have done so. He reconciled Genesis and physical science for himself. It did not trouble him terribly, but he also believed that he had seen devils. He believed that he had driven devils out, by prayer and by fasting. His physical science training did not raise questions for him about alternative explanations for the behavior of "bedeviled people." In his day, as he grew up, these devils were around all the time, you saw evidence of them regularly recounted by people. You could look out in the dark of the night and see them. Our children do not see them now and I have never seen them.

My father believed fully in the efficacy of prayer and said medicine has to cooperate with faith. But he did not really believe in miracles that abrogated physical science laws, natural laws. Even more than the physical scientist, I think the social scientist has primitive man's views within the Church to cope with. They appear much more frequently in explaining social than they do in explaining physical phenomena. The social scientist finds these views of man disconcerting, whereas the physical scientist may be indifferent to them.

You were paraphrasing before something to the effect that Lowry Nelson was saying to Henry Eyring that "If you were as astute an observer of human and social phenomena as you are of physical qualities in chemistry then you would see why I have the difficulties that I do in the Church as a social scientist."

You remember my accounting of this better than I do.

You have spoken to the problem of time demands made on members of the Church in relation to President Smith's special message to you about your mission in life, and you have spoken of other confrontations between the views and doctrines of the Church and views and assumptions in the epistemology of the social and behavioral sciences. Seemingly most of these confrontations in your own mind have been decided in the favor of science and have come to a point of resolution. Are there areas of conflict about which you are still troubled and about which you have not made a resolution?

Yes, I do not find it pleasant to face death some ten or twenty years from now. I

would like to be able to believe in an afterlife. I would like to be able to resolve that particular question in favor of the Church teachings. So that if wishing would do it, I would love to have some evidence that there is an afterlife. In a sense, lacking it, I find myself terribly conscious of time, *the precious quality of time*. I am increasingly conscious of the necessity of having others catch the excitement of the business that I am in to carry on the unfinished tasks that remain in completing my mission in life. It is one of the reasons that I don't look forward to retirement at all, because at retirement you are cut off from working with young people who can get some of that unfinished work done. Immortality, in the sense of seeing the things that you stand for and work for continue after you die, becomes something that cannot be taken for granted. My resolution of the problem that death will cut short my mission occurs by relating more and more to the promising leaders I am training, in supporting them and increasing their commitment, sharpening their identities, helping them to get started early, giving them some sense of the tasks ahead. That is the opposite of the "pie-in-the-sky-by-and-by" notion. It is a precious reward to see that some of this passing of the torch comes about. I am thankful that my own self-discovery of a professional identity came as early as it did and that I have been able to be as influential as I have in this respect. I fondly imagine that if I do this job well, then if there is an afterlife, I will find that it was well done, and if there is not, that the work will continue, for the benefit of mankind as it were. That is one of the most troublesome, irreconcilables that I face. I am not going to lose an awful lot of sleep over it because I can't do an awful lot about it.

I have come to think that the larger issues of discrimination against blacks, women and children will work themselves out, not because the Church will get the requisite revelation to take care of them, but because the liberation will occur in the larger society in which we live whether the Church moves on the matter or not. So I am not inclined to fight on this particular front. I think it is a battle which is being won through the knowledge of evolution and the wider dissemination of social science concepts, ideas and values. So that I am not submitting my resignation from the Church over these issues as others have done.

I think a recent *Dialogue* article on this issue by Lester Bush, Jr. is beautifully done. It demonstrates that the Church has been struggling with the issue of the blacks from the beginning, that there have been diverse statements from the Church under pressure by virtually every President since the Church was organized. Bending to the expediency of the moment, precedents have been set up, reactionary precedents. Even leaders who took a progressive stand when they were marginal to power, took a reactionary stand on becoming president. They were stuck with precedents that they dared not repudiate.

The article was a case where a historian did a job of clarifying issues by providing the historical record. I have had a running battle with the people that I knew and trusted in the Church on this matter, but I have never had the clarification that was brought out in this particular article. I had not realized how long the Church authorities have been plagued with this problem!

I can't help but personally evaluate the tenor of your comments in the last few minutes. I see you in your later maturity in Erikson's stage of generativity rather than one of despair; one nurturing an incipient leadership. I glanced through the

Dialogue article while you were on the telephone a few moments ago, and I noted the beautiful sketches of old Italian homes and I recalled the story you told me about your family home and I have wondered since if that was an important factor in your feelings toward the Church as an organization or if it was incidental.

You mean the fact that the Church obliterated my ancestral home after purchasing it for a parking lot? It could have happened to any of the property owners adjacent to Church property. I would love to have a home that I could return to, but long ago Utah ceased to be that kind of home for me. Wolfe in *Look Homeward Angel* showed we can never go home again. It just is not possible. The city of my youth is itself just a gem of a city. But a city is not a home without people to return to. And people who return there are not our own home people but are former graduate student friends who are now colleagues. So that it would be like any other beautiful city, not a home, but one where lots of friends can be found. One of the recurring questions which I had to face as I returned to Utah was, "Do you still have a testimony?" I had to ask myself, "What is the nature of my testimony? What do I believe?" These were the recurring questions. Obviously to admit to yourself that you don't have a testimony, after having had one, is devastating—an identity crisis. One's religious development may be captured by the ebb and flow of his testimony. Now how does a scientist respond when he faces the query, "What do I know?" He can't go through a set of catechismic rituals that are implied by the eight year old or the twelve year old who is giving a testimony before a group—something approximating the memorized statement. He must make sharp, relative distinctions between "I would like to believe" and "I believe," and between "I had a past belief" and "I know." Now a testimony in the fullest sense seems to be introduced with the assertion, "I know." That is the most frequent rhetoric, "I know that," "I know that," "I know that," and "I know that." The characteristic of an educated man, on the other hand, is marked by the qualifications he puts on what he knows. Agnosticism is more compatible with education than is absolute knowledge. Growing religiously, instead of ebbing and flowing with respect to a fixed testimony of "I know," may consist of expanding the horizons of discovery of things that you know *not* well. And the goal of religious development might not be the serenity of certainty, an absolute acceptance on faith, but the capacity to sustain the tension of not knowing. To be able to live with uncertainty, to be able to cope with the insecurities of an exceedingly complex world in order to control it would be a higher achievement religiously, I think. Now this is the description of a different kind of religion, but it is a religion that is consonant with progress, growth and development.

An old friend of the family never failed, when I visited her in Utah, to ask me the question, "Do you still have a testimony?" She was the wife of a senior apostle. We traveled in Europe together when I was district president in Belgium. She was concerned about my shift from chemistry into sociology and she never failed to ask me the same question, and I resented it. I have started to redefine what a testimony is, and I now think that the testimony that I had in the mission field was not good enough—that it represented the best that I was capable of at that particular moment, but there was very little reflection in it. It represented my commitment to the mission field and to the Church. It represented my loyalty, but that is not what you are asking. I now differentiate between "I want to believe" and "I do believe,"

and there are very few times that I will use the term "I know." Well, there may be somewhere in that territory of a testimony a festering thorn that requires a bitter pulling.

I would say that one of the irreconcilables to me still is that I do not feel that my testimony, as I define it candidly and frankly, would be particularly welcome to my fellow members in the local ward. It is jarring to listeners to hear a testimony of this kind. It is jarring because of those who have gone before and those who will come afterwards. People do not come to testimony meeting to hear about doubts and uncertainties. For my part, there is something within me that is violated each time a person blandly says "I know" when I know damn well he doesn't. It irritates me just as a bland lie would. But I am imposing my own scientific standards for assessing what is true, the distinction between belief and wishfulness and knowledge, and the person giving a testimony is not making those distinctions. There are two languages, or perhaps better, two rhetorics rather than just one. And so I am irritated that members don't use these words in the way I think they ought to use them, and I am angry because I can't give my own testimony in my own way and be understood. There you have the ugly picture of marginality. There is not any place in a testimony meeting for a marginal member, even in the role of devil's advocate.

DIALOGUE WITH A BIOLOGICAL SCIENTIST

Would you describe for us the time in your life when you felt most involved in the Church? That may be now, when you were in the mission field, or some other time in your life.

I have always been involved in the Church some way or another. I have been in the elders' quorum presidency several times in my life. I guess at the time of my marriage, I was most highly involved because I had to develop up to the point that I could qualify for that important event; I did, so I guess that I have always been involved, I have always had some kind of a job in the Church. At this point, I am a high priest and serve in several capacities.

There is no one apex that you look back to as the time in your life that you felt most engaged in the activities of the Church?

I do not think that there has ever been any real high point or low point. Sometimes it is low. Maybe this is no progress.

What factors in your life have encouraged you to continue your activity in the Church?

I have a rather large family and, of course, they play a big part in my life. We continually try to maintain the standards of the Church. We have a family home evening every Monday as suggested. So my family plays a large part. I have three youngsters in college at this point. Two of them are at Utah State University. I prefer that university over Brigham Young University for scholarly

development, at least in the sciences. So that is where they are. I have one boy who is finishing up in psychology this year at the university where I teach.

So your own family, the family where you are a parent and have children, has encouraged you to remain involved in the Church.

Yes, I agree that the family is the center of our life, even though I don't spend as much time with them as I should, or possibly could, if it were not for my academic interests.

That is an area that I want to take up later, the time that is required in your profession. Could you describe your parent's family.

Most of my life we were raised in what you would call the mission field. This was in the Southwest. My family originated in Utah and Idaho and moved to Oregon and then down to the Mexican colonies. They were eventually kicked out of Mexico, and did not get very far. My parents were married in the temple and they had nine children, the first of whom died in Mexico. The other eight were raised and subsequently all were married in the temple. So we had some religious training, I guess, all the way through, or this would not have happened. Most of us met our mates either in school or down in that part of the country. We had a rather rigorous background in our religion even though we lived in the mission field.

Referring now to the question I asked earlier about your involvement in the Church, you felt that you had been pretty evenly involved over your life. Have you likewise felt about the same enthusiasm for the Church through your life, or was there a time you recall being more enthused about the gospel?

I don't know; this is a difficult question that I have evaded already once. I think that there have been more low points than there have been high points, we will put it that way. Periodically I have felt low points and I think it is probably due to my academic training, especially in the field that I have been working in. Because we deal with the species of animals, we deal with contraception, we deal with various phases of life, the growing of tissue ourselves. We deal with artificial insemination and ova transplant, which is dealing right at the heart of some of the taboos in our religious philosophy.

However, I feel very strongly about certain aspects of the work that I am doing and can rationalize with really no conflict of interest. Periodically we get to feeling that we are pretty important, and this is probably the downfall of many of us. But to separate fiction and fact and faith is very difficult at times.

When you say that in your work you deal with different species of animals and the growing of living tissue, contraception, and so on, what issues does this kind of work raise in your mind with the doctrines of the Church? What kind of conflicts would this cause for you as a member of the Church?

I will state one at the very outset. That is the phenomena of cloning. I don't know if you have ever heard of cloning or not. In a recent *Saturday Review* article

Senator Tunney states, "cloning of frogs, where a replica of an individual is developed from one of its somatic cells, has already been successful. The technology for the cloning of mammals will be available within 5 years, and, unless research is stopped, the technology for the cloning of human beings might be available within anything from 10 to 25 years." All right, now this is a reported fact. There are very few facts. Of course, this is where I must attempt to rationalize. But I do not know if I have completely—if we consider that animals were placed upon the earth, using the "Zap" idea. . .

The "Zap" idea?

In other words, we have the animal, we have the frog and many others, placed directly by God—"Zap"—upon the earth for the benefit of mankind, right? They have a specific regime of reproduction as you and I have. But we have been taught that even the animals have spirits of some sort. Now, if we can develop a frog out of a somatic cell, it is surely not natural, it is not a natural birth. It is not even a birth at all, it is just a growing process. This is one area that there has been a small conflict, at least in my mind. I think you can rationalize each of these. We have not created anything new. We have merely taken the things that have been placed here upon this earth for our use. But there is no reason to assume we cannot clone a human. In other words, eventually we may be able to take a piece of skin off the end of your finger and develop another you out of it. It is not unlikely that we will be able to do this in the next ten to twenty years; it is a complete possibility. Now, how are we going to put a new spirit, an exact you, into this new person? It is something to contemplate anyway.

But the second body that was cloned from one of the cells in my skin would be identical to my . . .

It would be exactly identical to you. In other words, you will grow to the same size under the same environment—so this raises some questions, you see, and it is not inconceivable that this is a "normal" process, because we don't really know how, at least I don't know how, each individual spirit was formed and we really have not been told this; I think we are not to that point yet. You see, the saving thing for me in this whole thing is that I believe and have been taught that God, the Eternal Father, has all power, and supposedly knows everything. And the only time that He has released this knowledge or given us the opportunity to have it is for our own salvation. If we are to become gods, at least in some stage of development we are going to have to develop this kind of expertise. All right, I don't think that He is going to allow us to develop any further than He wants us to at any particular time in life, if we state it that way. Any time that He wants us to fail in our experiments, He is going to provide this opportunity for us. Any time he wants us to succeed, He's going to allow us to. In other words, I don't think that He necessarily wanted His children in earlier dispensations to have all the information that we have today, the reason being that they could not handle it.

Going back to some of your earlier comments about working with different

species of animals and your comment that the gospel appears to teach a "Zap" theory of how things were created, how do you personally confront the issue of creation as taught by the scriptures and as you have been trained as a natural scientist?

Well, once again this is a confusing issue, because we don't have enough data on it in the scriptures. Apparently we don't need this information, and we probably could not understand it if we had it. We know that Adam existed; I think we know that Adam existed prior to the creation and, in fact, assisted in it; he must have been around some place, so you would almost have to think of him as being literally placed here—the "Zap" concept. This is not inconceivable. I guess that the real question arises as to how we presently date the bones and fossils which are found. Although we don't really know the date of Adam, as far as I am concerned, he could have lived in the garden for millions of years before they decided to take the step, and so . . .

The issue of historical time is of no concern to you then?

Well, not really. However, they are dating certain bones of supposed human bodies much before the time of the biblical idea of the beginning of man. But what is in your body was already here at the time of the creation; how this might affect the dating of your bones is really immaterial to me.

It may be, then, that the elements of the earth are eternal, and they were brought together at the creation, in fact they were all very old.

Yes, they could have been. I don't care, just pick a number, how old and how they were incorporated into various things. This plant here is taking nutrients from that soil that we placed there. That soil is—you tell me how old it is. Just because we happen to find Carbon 14 within the leaf of that new plant is really immaterial. Now as far as the species are concerned, again I must rationalize many things if we go to the time of Noah's Ark. This has always been a confusing issue to some. People have put their pencils to this and figured out how many bales of hay and everything else were necessary. I think each of us can realize how inconceivable this whole thing could have been. But in our day, we have created species. Right? We create a new species by a flip of the chromosomes in the placement of the genes. This is why there probably have not been enough humans born upon this earth yet to have two people who are exactly alike. I think that this is one of God's plans; through random assortment and combination and recombination of chromosomes and genes we have a tremendous opportunity for differences. This is why we are all different. This is why we grow differently and this is why we react differently. It is pretty well shown, or at least we can show now, that if Noah had taken a male and female pussycat upon the ark, there could have developed all of the various cats that we have ever heard about. Sometimes we picture the garden with lambs and cats and everything else all living peacefully together. But we don't know that this is exactly right, do we? In other words, if someone has drawn a picture of all animals, they are showing various species that we think of today, or at the time of the drawing. I am not so sure that all of them were there. You

take the sheep family and the goat family. There is only one small difference between the two species, and you can see exactly how one chromosome got split off and recombined so that you have a completely different kind of animal. You can see that, through a combination and recombination of genes, these things could actually have happened since the time of Noah.

Do you believe in Adam and Eve as personal beings?

I do and I believe all the human race came through them. I don't know really what they looked like, but look at the different types of humans we have today. My gosh, you can find anything, from giants to pygmies, different colors, different characteristics and certainly you would have to say that these have occurred through genetic assortment and genetic recombination.

It seems to me a more basic question now might be: Is there evolution from cats to cows and men, that kind of thing, not only within certain narrow families, but between them?

In general, no. I am speaking from fact, now, rather than from faith—we know that you cannot cross most species due to the fact that there is a different chromosome number between species. A few interspecies crosses have been made, but the offspring are sterile.

You are involved with faith and fact every day; you work with these kinds of things and that is why we are interested in talking to you. Does your discipline raise other issues?

Well, I guess you are wanting me to be the devil's advocate. I can do so, even though it is over matters that are not of great concern to me. For instance, you have heard a lot about the population explosion and the problems that we have as we look around at various countries, possibly our own here in a few years. The question that I really have is, "Why should there be so many people that we do not take care of properly? Why are we allowed to continue to reproduce?" This is a question which involves a fact. In our religious philosophy we are taught that we should have children—a certain number of spirits must come here—but why do some of them have to come under such horrible conditions of want and need? Why is it they are allowed to starve to death? From man's point of view, one of the ways of overcoming this is to curtail the number of people, rather than increase production. We know that we can increase production of food. But then why do you have such over-populated countries like India and China? It is an impossibility to raise enough food to keep them alive. Yet we say, yes, we should continue to have children. But we have not really been given the opportunity by the Lord to feed the world. We still have bad land, millions and millions of acres of land where the environment is so adverse that you can't do much with it. There is probably plenty of land here to raise crops for plenty of people, but we have not used them; maybe it is a challenge, I don't know. Maybe it is our job to try to feed the world, to overcome the situation.

That is right. Face squarely the question of population.

In my work we look at methods of population control. Birth control is directly against our religious philosophy so, of course, it becomes a conflict. But you see people starving to death, and you wonder why is it their lot in life, why must they be born under conditions where they never have an opportunity to be educated, where they never have an opportunity to do anything other than try to survive. So, yes, I am involved to some extent in a project on human contraception. Of course, we work with animals for the basic understanding of it. Ordinarily, I use this as a method of studying the normalcy of reproduction. This is the marvel to me in science, the scientific work that I am in—the marvel and greatness of the body. How important and how wonderful a system it really is, and how wonderful a system it was created to be, and we scratch a few surfaces now and then and we make tremendous breakthroughs. Yet, the body—human and animal—remains a challenge; the marvel is how little we really know about it.

The Church, of course, teaches that under normal circumstances we should not practice contraception. You find yourself professionally engaged in a project where you are working on this problem with animals, but hopefully for use with humans. How do you resolve this conflict in your life, then, as a member of the Church?

I feel that I have to know everything some day, and, whether or not you are stopping the conception, you are also learning about methods, either physical or physiological, and laws that govern the whole universe. I have to look at it from the standpoint that it is increased knowledge. How you use this knowledge is a different thing. In other words, if you have the knowledge of something, I think it is the application of this knowledge that becomes important, the rationale you put on the use of this newly gained knowledge. I have to come back to the idea that if we are not supposed to know how to do this, we are not going to learn it.

I mentioned earlier that I was interested in asking you about the issue of time demands made upon you by your profession and those made on you by the Church.

As far as demands are concerned, a university really makes no greater demand upon you than the eight-hour day. The only thing that occurs in this eight-hour day, especially in science, is one's own personal agenda. It is difficult for me because there are so many things I must find out. I spend, probably on the average, twelve to fourteen hours a day in my profession. There is a driving force within me that compels me to do this. My day starts early. We all get up at 5:30 a.m. so that we can eat breakfast together before the children leave for seminary at 6:00. As soon as they are gone, my day begins. I come back to work many, many times in the evening and most of all day Saturday and sometimes on Sunday, because there is this compelling, driving force in me. My knowledge has opened a tremendous number of doors for me all over the world. Not the knowledge that I have gained, but the knowledge that I have been given, to the extent that one of the real problems in my life has to do with capitalizing on some of the

findings. I like money. It seems like most everything that I touch turns towards that. I am involved in many different companies. This is a problem, too, a very serious problem.

Let me make this question more specific. Has this inner drive to achieve and to learn in your profession conflicted with the Church in the sense that possibly you have been called to do something but felt unable to do it because of the time required to learn what you wanted to learn?

I do not think that there is a direct conflict because I have not refused a position. But, by the same token, people know how busy I am and possibly leave me alone. In other words, I would have to say that my profession is more interesting to me than jobs in the Church. So if you stay busy enough, then I think that the attitude is always, "He is too busy to do that job so we won't call him," and that makes me just about as happy. I know that some people believe that Church jobs are most important and they work for these, not that they are looking for a job, but they make themselves more available for that position than some of us do. Do you understand what I am saying?

Yes, I do.

Now, my wife is Relief Society president, and to her, this is very important, and it is an important job; but she makes herself available for these things. I try not to make myself available. However, I am always available here in my work at the university because I like my work, and when my children have asked the question, "Why do you work so hard?" I have said, "Because it is not work. It is fun, it is a hobby." It would drive me nuts to have to come over here and work the extra hours that I put in if I did not like to. You see, there is a certain compelling force in some scientists to know the answer to a given question. Why, I do not know. There is no better balance of life. You have to balance certain things. We have to eat, so we rationalize to the point that we have to work. It is difficult for me to comply with the advice of the Saviour, to follow Him and give everything away, because I do not know of anyone who is going to feed me. Even welfare does not want to feed me. We see that in our little ward; they are perfectly content to let needy members be on state and federal welfare. We do not seem to turn our hands to do the job properly. We criticize rather than help many times, and this is an obvious thing in the wards that I have been in; the poor stay poor and we do not do a lot to help them out. As soon as widows get on state welfare, then ward welfare stops, and this is wrong. But my point is, that you have to still look out after yourself to a great extent.

I have just about used up the hour that I told you this would take. Are there any other things that you would like to express before I close the interview?

I think that the whole thing revolves around the faith that you have developed and the testimony that you have developed in the faith that you have. We have

to take many, many things on faith rather than on fact. There are very few facts in life. So most things come down to faith and I think that I have to rely on this principle of the gospel.

Would you give me an expression of your personal testimony then? Do you feel that it is most appropriate to say "I believe" the principles of the gospel or "I know"—as a scientist? Is there a clear distinction between what you believe and what you know in the Church?

"Know" is an interesting word. I have never had a vision. I have never had some of these extraordinary things that some people base their faith upon, or their knowledge upon. I guess I have probably used the term "belief" more than the term "knowledge" because there are very few facts. I guess to sum up my total concept, I would have to say when I bear my testimony that I believe with all my heart, with all my conviction, that this or that is true. There are very, very few facts, if any. Can you name me a fact? You can say there is a law of gravity. There is no law of gravity really. There is a law of gravity for this earth, but you go out 180 miles and there is no gravity. So almost nothing is a fact in my mind. And this is one of the lovely things that keeps me going. Being as there is really no fact, then you can discard evolution, you can discard a lot of things, can't you? But now, if I turned around and said, "I know that this is a fact in my religious philosophy," I think I would be a hypocrite. I believe that Jesus Christ existed and exists. All right? I have not seen Him so I cannot say I know. I have faith that He exists. So my belief is very, very strong. But again, my knowledge of this—I know that there are a lot of people that know, and I know that they feel very strongly toward this thing. And I think it is a lovely thing if they know. But I know nothing really for a fact. How does one overcome this? I do not know. Maybe you can give me the answer to it. I think that you feel that you know some of the things about which people bear their testimony, but I am not sure that they really know. They say this. And, unfortunately, I cannot say it exactly. I see there are certain bits of evidence. Now take the Book of Mormon, for example. You see, to me one of the wonderful things is that we have witnesses to it. It would be quite difficult for me to believe some of those stories. But they have signed witnesses. Now, to me, this is science. This is scientific. There were witnesses who said, "This is what occurred." More than one. Now this becomes more of a fact to me, you see, more of a fact.

Because there is more evidence in support of it?

Yes, there is more evidence for the support of the whole thing. When I perform an experiment, I do it over and over and over and other people do it over and over and over, and it almost becomes a fact, you see. Then it becomes a documented kind of thing. Likewise, something in the Church becomes more of a fact because we have certain witnesses for it.

Replication is possible by independent observers, and this is characteristic of scientific knowledge. That final clarification will be very helpful and I appreciate the sincerity and the honesty that has been evident in our discussion together.

DIALOGUE WITH A MEDICAL SCIENTIST

We are interested in talking about your religious experiences and feelings over the course of your academic pursuits. To begin with, would you describe the time in your life when you have been most involved in the Church. Was it in the mission field?

Well, I suppose that the time that I was most involved was in the mission field. I went into the mission field somewhat poorly prepared. I had only a few months of seminary and not much doctrinal knowledge about the Church. My father was not an active member of the Church, never has been in my lifetime, and my mother was only semi-active during certain periods of my youth so that my home experience did not provide as much Church background as it might have. In the mission field, I found this to be rather traumatic. Some of the most important challenges that I have ever had to face were in the mission field. In fact, at one point in the mission field I strongly considered approaching the mission president about being released because I felt I did not have sufficient convictions as to what it was all about. This wise, patient man, to whom I later became an assistant, had been a stake president for many years and had considerable experience with young people and pretty well knew how to deal with my anxieties and my conflicts and doubts. The last year I was in the mission field was one of intense religious involvement. I felt a strong and peaceful feeling almost every day of that last year. In fact, it was such a singular event in my life that I almost equate it with what I consider to be the ideal. I have often used that period as a reference point.

Coming back from the mission field, I made certain religious commitments—promises to myself—that I would read the scriptures daily, that I would accept any Church call which was given to me and that there would be nothing in the way of academic endeavours that I would allow to limit or conflict with my religious involvement.

My grades prior to going into the mission field were only mediocre. When I came back, I had five or six quarters of straight A's and was able to get into medical school. In fact, I was accepted at all of the schools to which I had applied. Part of that time, almost every day, was spent in scripture reading and in different kinds of Church involvement, and I had a strong feeling that this was a necessary component of life. As I look at my performance during that time, the ability to stick to the commitment, to work as hard as I had to work to get those kind of grades, was partly sustained by what I felt to be the religious activity that I was involved in.

When I got into medical school, I made the same commitment. In fact, when I got married, my wife and I were called by our bishop to stay in our ward rather than go into the student ward which was right on the campus. During medical school I taught Sunday School and was later an elder's quorum instructor and a ward teaching supervisor. I had some real difficulty adjusting academically to medical school and to the time commitment necessary, and did poorly in the beginning, but then I learned how to adjust and during my last two years, I was in

the top quarter of my class. That adjustment and the trauma associated with the poor performance initially have had a great impact on me.

Would you say that the last year of your mission—a period you refer to as “ideal”—was the time when you felt most enthusiastic about religious matters?

I would say that I feel enthusiastic now. I feel a great similarity between that mission field experience and my present relation to the Church. I do not know that there is a day goes by that I do not have some kind of internal manifestation as to the truthfulness of the Gospel or as to the workings of the Lord or as to the capacity of my priesthood with respect to my call. That is the main goal that I have worked at for 17 years. I feel that I have finally been able to bring the secular things into a semblance of control and into focus, in a way that is similar to that last year of the mission field, where I did not have such things to contend with. With great humility I feel that I have learned some of the secrets that are necessary in order to do that and I think that right now I have a real taste of what life can be like. Yet I am not satisfied at all with what I experience because I feel like I am just beginning to taste of an experience which can be so great and so internally satisfying and such a source of peace, that I want more of it. I am willing to pay the price that is necessary, through scripture reading, through commitment of time and other things that I can offer to the Church.

Now that you seem to be on top of the secular buffetings and internal pressures, so that you are able to feel that kind of spiritual richness in your life that you looked forward to, I am wondering if there are related problems that you confront in your life other than time demands. Were there or are there now any intellectual confrontations that you have with your religious beliefs?

Yes, the time in my earlier years when I was a Zoology major and teaching assistant in Comparative Anatomy at Brigham Young University. I have had some exposure to genetics. I have an appointment in three departments here, and I do get into genetics. Rather than there being any kind of conflict, I find it exactly the opposite. I find that everything that I learn and everything that I come to understand reinforces my testimony of the way things really are. I find absolutely no conflicts—absolutely none. Some of my colleagues might say that is because of a naive superficiality, but I do not think it is. I have delved into some of these matters deeply because I have wanted to know the answer. I think that in every area where there is a potential conflict, I find something to balance it that the Lord has helped me to realize. For those things with which there may not be something that directly counterbalances, I have found a plausible explanation in my own mind. Some explanations are rather complicated but most of them I have some documentation for from my readings or study, either secular or religious. To me, science is amazing in the way in which it is presently confirming the Gospel of Jesus Christ as restored to Joseph Smith. I think that Joseph Smith was so far ahead of his time in what he said and what he taught, that his advanced understanding is totally beyond the realm of coincidence and represents divine inspiration.

Is there a specific example you can give from zoology or genetics? Immediately you have reminded me that a man who had undergone training in those areas would confront the issue of evolution and the origin of man as taught by the Church.

Genetics to me is one basis for understanding why every individual is different from everyone else. The process of mutation and evolution within the human species is a limited evolution. There is no evidence that *Homo sapiens* have really changed at all during the time span of which we have knowledge. At the same time, one of the things that keeps overriding in my mind is the fact that things do not tend towards complex organization, the way the theory of evolution maintains that they must. Rather, things tend towards disorganization. Atmospheric conditions may have repeatedly created the potential for nitrogen, hydrogen and carbon atoms to come together to form a very simplified amino acid. But the chances of that amino acid hooking up with another amino acid are so statistically remote as to be, in my mind, completely beyond the realm of comprehension as an explanation of man's origin. When we look at the comparative anatomy of animal forms and find that there is a similarity, that there is a developmental continuity up to anthropoid forms, then as scientists we have a very difficult time really determining the exact transition between those species. If someone says to me, "Oh, there is so much that points to evolution as being the real source of man," I will say, "Friend, so much points against evolution as to call into serious question evolutionary arguments for man's creation or existence." When I look at the human body, when I look at the workings of the human body, when I see the intricacies of it in medical situations—its existence seems to me beyond the realm of coincidence. Everything about the body and the universe seems so well planned and so finely tuned. And when I look at the way in which evolution would have to have occurred to bring about the functions of man or animal, there is just nothing that I can find in anthropology, in geology or in zoology that in any way even begins to prove that in my mind.

I believe that there is a process of evolution. I believe that when we say "evolution" we have to say "Yes, Mendelian genetics are a fact; they are a reality." But to apply Mendelian genetics to an inter-species evolution from an amino acid to man is just not possible to my mind. I think that man's origin is far more explainable in the context of religious belief and by the power of the priesthood, than it is explainable by any theory originated and generated by man.

Are there any problems in your scientific training that tend to conflict with the teachings of the Church?

As far as the teachings of the Church are concerned, I am pretty orthodox. I am very conservative in my feelings. I can find some inconsistencies, yes; I can find things that are not in agreement between one general authority and another. I have also come to understand that there can be an interjection of individual interpretation into things. Individuals may have reached partial answers. I also feel that at times there is a rather harsh approach to some of the things that are psychological or that are psychosomatic. I feel that there may be more physical or chemical bases for some human illness than some may give credit for.

But no other specific things that would emerge out of your discipline naturally like. . .

Not really. In fact, to me medical practice is such that I find confirmatory evidence rather than contradictory evidence. The things that I sometimes find disturbing have to do with individuals rather than any kind of Church doctrine. I find nothing in Church doctrine which I feel to be incompatible with true science or any kind of compatible human life style.

Are there issues in your field of research and professional practice that present problems to others who do not hold as firmly as you to the teachings of the Church?

I would say that the greatest problems that I see in people who are in my profession have to do with an unwillingness to commit their time or means to the Church. If one adds to that disobedience (I put it that way knowing the harshness, perhaps, of that term) to certain laws and commandments of the Church and the attempt to rationalize such disobedience, you can account for most problems people have with the Church. Of the individuals I know who at one time had a knowledge and testimony of the Gospel and departed from it, their alienation from the Church has been caused by a love of worldly goods, by time pressures or by an inability to keep certain moral or physical commandments. A few times it has been because of implied interpersonal differences. In medicine or in science one has a way of developing something that is in a very real way independent of religion. One comes to feel sometimes that he or she has almost god-like powers of being able to thwart or turn back disease. At the same time, one also has the feeling in the research lab, such as the one next door here, that one can discover things that are new and that the discovering capacity is innate. If one finds that in the Church one does not have the commensurate satisfaction that one gains from one's scientific work, it is easy to delude oneself by saying, "My true calling in life is to be a healer and helper of people through medicine." What one really may not be saying to oneself is, "I am not getting satisfaction out of religion because I am not willing to put into it what I put into my profession or to my research endeavours." When one maintains balance, one finds, I feel, every bit as great a satisfaction in the religious experience. In fact, at times it greatly transcends what one experiences professionally, because of the fact that it is a different type of experience. Yet at the same time there can be a similarity with religious experience in everything else that one does. The discovery in the laboratory of the secrets of the universe causes at times a thrilling internal surge or burning that is similar to those feelings one experiences when engaged in priesthood functions. When medicine is practiced with the Spirit of the Lord, and when there is a seeking of divine guidance in the practice and the diagnosis or treatment of medical disease, there is a sweetness and an accompanying conviction that comes that causes one to feel, "Now I am truly doing what the Lord meant me to do with respect to my profession." As far as I am concerned, one's profession really is part of one's religion. After a period of time, it becomes not a secular endeavour but a religious endeavour. We believe that all truth is part of religion and, therefore, no matter what I do professionally, it is really part of my priesthood function.

As you have traced the history of your religious experience from your mission, through school, to the present, I did not get any indication that you were really meant to be a discoverer and let religion sit on the shelf. Have you ever experienced those feelings in your own life?

I think that one goes through an ego struggle in which one has to realize one's limitations and has to sit down and say, "I am not an Albert Einstein, I am not a Robert Good, I am not a Michael DeBakey," and to realize that if one is going to maintain a balance, there is a limit to that which one can achieve. I could tell you the names of individuals who probably spend about 70 or 80 hours a week in their medical and academic endeavours. They achieve more than I do. I have decided that in my own professional situation, my involvement will be one which has variety. I have a research lab; I administer a service laboratory operation that brings in over a half a million dollars a year. At the same time, I am involved with teaching and I see patients in clinical consultation. So the conflicts or the circumstances that have arisen in my life relate to how I am going to balance all of these things and how I am going to maintain myself at a level in which I am competent in my profession but in which I give to the Lord the time which the Lord through His chosen servants asks of me. There is a tempering that one has to go through; there is a discipline timewise that one has to exert and I think that it takes an effort to maintain the balance.

Seeing what others have gone through in becoming lukewarm or inactive in the Church has fortified me in determining that I am not going to fall prey to those deceptions mentioned previously, because I feel that they are self-deceptions. I feel that to maintain the balance one has to be willing to give that which he has promised in temple ordinances and other covenants, that is, a total commitment of one's time, one's means and one's abilities to the Lord should the Lord ask for those things at any time.

Let me probe a little bit now into the last thing you mentioned, your temple commitments. I have the feeling that your life is minutely organized and that you have made certain commitments to yourself, to the Lord, and to other people. Could you elaborate for me on the nature of those commitments? I know that in your parents' home you did not get the same kind of doctrinal foundation that a good number of Mormons do, but that you have risen, as it were, through commitments of some kind.

I think that I have come to understand somewhat my own weaknesses. I think I understand my own vulnerabilities and I work hard to avoid placing myself in situations where I might become vulnerable. I do not by any manner or means maintain that I have everything under control, because I do not. But I have learned certain defensive efforts that I can bring into play. One which I consider to be very effective relates to the promise of the Lord as given in I Corinthians 10:13 and also in Alma 18:27, that the Lord gives no temptations unto the children of men except as are common to all of us. It is helpful to know that my colleagues and my good friends have the same kinds of pressures that I do.

I have made a commitment to live the commandments of the Lord as fully as I am capable of doing. I think that this begins with the mental process. One of

the scriptures that I take greatest strength from, and I probably quote it to myself several times a day, is a scripture that has meaning that I cannot begin to describe to you because of the strength that I get from repeating the words to myself whenever there is a situation when my thoughts begin to go awry or where something comes up of a distracting nature. That scripture is found in Doctrine and Covenants 121:45-46: "Let thy bowels also be full of charity towards all men, and to the household of faith, and let virtue garnish thy thoughts unceasingly; then shall thy confidence wax strong in the presence of God, and the doctrines of the priesthood shall distill upon thy soul as the dews from Heaven. The Holy Ghost shall be thy constant companion, and thy sceptre an unchanging sceptre of righteousness and truth; thy dominion shall be an everlasting dominion, and without compulsory means it shall flow unto thee for ever and ever." And that to me is the whole process of life. My confidence—the confidence that I want to wax strong in the presence of God—is predicated upon my own mental processes. That is how I become a god, by bringing those processes under control. So if I happen to see a pretty girl who has got some kind of an enticing garment on or who does not have much of a garment on, then I keep my eyes from dwelling upon that. I have to look at people as I walk down a hall, but I keep my eyes where I can recognize facial features and not look at other body areas. If I am in a situation where there are temptations of another nature, then all I do is I just say to myself "Let thy bowels be full of charity. . ." and I repeat it to myself. It is long enough so that other things leave my mind by the time I am through. I cannot tell you how often I thrill inside from that experience.

You ask, "What commitments have you made?" Well, my commitment is that "as for me and my house, we are going to live the commandments of the Lord." I acknowledge the fact that I have got a long way to go. There are many things that I do not really have control of. At times, I still get mad or exasperated or impatient and so forth. Those are the things that I do not like, for charity suffereth long, charity wanteth not—that is my goal, that is my commitment—to be charitable, to learn to practice what the Lord has told us. When I read the scriptures and when I contemplate in the quietness of my own study just what the Lord has given us and how many keys and how many secrets He has manifested to us—it thrills me inside because I just begin to get a little bit of an inkling, a little bit of the taste of what eternity is really like—and that experience makes me hungry for similar experiences because that really is the only thing that I have ever experienced in life that has any kind of a lasting meaning.

Fortunately, I am blessed with a wife who feels the same way. I can share these things with her and I can thrill with her as we discuss these kinds of things that are of an eternal nature, and I feel very strongly that there is power on the other side of the veil that has great influence on us. There are things that go into making up the sacred nature of my testimony that I feel the Lord has given to me alone and are not to be shared. I cannot deny the presence of the Lord. I cannot deny the functionings and workings of the priesthood. Because I cannot deny it, the only logical and reasonable avenue open to me is to commit myself wholly to that which I know is the way of the Lord.

We have talked for over an hour. Are there any other things concerning your religious development you want to talk about?

There are a limited number of men that I know of who feel the same way that I do—to the same degree that I do. I sense this. There are certain individuals to whom I relate, to whom I resonate in a strong way because I know that they have the same magnitude of feeling about these things as I do.

I consider that each of us is a product of three very influential factors. The first factor is eternal intelligence. We are spirit children of God and even though our remembrances and recollections are shielded from us, there is still the influence of that innate core of our being. The second factor is that we are the product of Mendelian genetics—we are the product of the physical heritage that we absorb through our ancestors and through genetics. We are also the product of the environment in which we grow up and there are substantial influences of that environment.

I think another principle of my religious experience is that all of the things we do, as Alma points out, should be done unto the Lord, and that our counseling should be done with the Lord. I know without a shadow of a doubt that at the present time I should be here. I know without a shadow of a doubt that this is the very position that I should have right now, because of the fact that this is where the Lord through the Spirit has told me to live. I can tell you that the house I buy or the car I drive are mine or the man who runs my research laboratory works with me because of a spiritual conviction that that was the right thing to do at the time. When one comes to the point where one realizes that one learns slowly, line upon line, precept upon precept, as stated in the 98th section of the Doctrine and Covenants, and that one must bring into subjection to the will of the Lord all of the features of one's life, one then begins to realize the true measure of one's success in life. That is hard on one's ego because one must realize and acknowledge the fact that the direction, the strength, the sustenance for all those things comes from another source. Only to the degree that one learns to do that does one truly begin to realize the fullness of the cup that is there for us to drink of.

Let us just spend about five more minutes together for we have come to the end of the hour. Others we have interviewed—men who have undergone scientific training similar to yours—say they feel a little intellectual dishonesty in saying “I know” or in other people using those words without any qualification. From your comments I would guess that you have no qualms whatsoever about using the words, “I know.”

To me, religion is as scientific as anything I experience, because all I have to do is to plug in the formula of keeping my thoughts clean, of keeping charitable attitudes in my mind, of living the physical commandments of the Lord, of doing the things I am asked to do, to the degree that I know the Lord would have wanted, and then I can repeat that religious experience. There is a reproducibility there that I want to convey to you that is so important to me because all I have to do is to plug into the processes of the Lord to reproduce the experience and feel the peace. That is such a sustenance to me; I cannot really say, “I don't know.” If a person cannot say intellectually, “I know,” in my own mind I say to them, “Friend, I am sorry that you have not experienced what I have experienced, because I feel absolutely no intellectual dishonesty in saying to my

colleagues, or to those with whom I engage in religious conversation, that it is not belief with me, it is knowledge, in the context of the way the scriptures describe to me that knowledge.”

There are sacred things that go to make up the nature of my testimony, that allow me to say that I know that certain things are true—and there is no way that I cannot say that. It would be dishonest of me to say that I do not know, because I do know. I know every bit as much as if I looked with my eyes because I have another sense, I have another receptor, that is every bit as accurate as the receptor mechanisms in my eyes, my ears, my taste, my smell and my touch. It is as finely honed and as finely tuned as any of those things are. It is as reproducible as anything I can do otherwise. You know, even this kind of an interview is a spiritual experience to me, because again as I relate certain things there are feelings that come to me that I have come to recognize that are almost daily with me and are beyond the realm of coincidence. I knew, for ten days before I was called to the stake presidency, that that call was coming. And that was an experience that went on for every one of those ten days, and which was as real and reproducible as it was profound and intense—a magnificent and instructional experience. In fact, I would have been in real trouble if I had not been called to the stake presidency because it would have fouled up everything that I have learned to interpret. But it was there, it came. I feel that those who cannot intellectually feel comfortable with saying they know that God lives, they know that Jesus is the Christ, they know the Book of Mormon is true, are in some way missing the experiences that I have had. I have never been misled by that internal feeling. Now if you talk about statistics about how do you know something, that is a pretty good average.