

“Seek Ye Diligently and Teach One Another Words of Wisdom”

GEORGE R. HILL III

My dear young friends in the gospel of Jesus Christ, I am grateful for the opportunity of being with you this evening in the company of my sweetheart of fifty years, whom I met and fell in love with at the BYU.

My being invited to speak to you provides an opportunity for you to see that spending one’s professional life in scientific research does not preclude the development of faith in our Lord and Savior Jesus Christ and a firm testimony of the truth of his gospel. It may be useful to you if I share some of the experiences I have had as a professor, as a participant in and director of graduate research in physical chemistry and fuels engineering, as well as experiences twice as an elders quorum president, three times as a bishop, as a Regional Representative, and, currently, as a General Authority.

One of the very important basic concepts restored through the Prophet Joseph Smith was the concept of the intelligence being eternal. Some of the quotations with which you are very familiar are:

The glory of God is intelligence, or, in other words, light and truth. [D&C 93:36]

Man was also in the beginning with God. Intelligence, or the light of truth, was not created or made, neither indeed can be. [D&C 93:29]

Whatever principle of intelligence we attain unto in this life, it will rise with us in the resurrection. [D&C 130:18]

The Lord also gave to the Prophet Joseph Smith several revelations concerning the importance of study and learning. For example:

And as all have not faith, seek ye diligently and teach one another words of wisdom; yea, seek ye out of the best books words of wisdom; seek learning, even by study and also by faith.

Organize yourselves; prepare every needful thing; and establish a house, even a house of prayer, a house of fasting, a house of faith, a house of learn-

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ing, a house of glory, a house of order, a house of God. [D&C 88:118–19]

And do thou grant, Holy Father, that all those who shall worship in this house may be taught words of wisdom out of the best books, and that they may seek learning even by study, and also by faith, as thou hast said;

And that they may grow up in thee, and receive a fulness of the Holy Ghost, and be organized according to thy laws, and be prepared to obtain every needful thing. [D&C 109:14–15]

With this sharp focus on the importance of education, the prophet Brigham Young organized within three years of the arrival of the first company in the valley of the Great Salt Lake the University of Deseret, which, since 1892, has been known as the University of Utah. Individual stakes throughout Utah and southern Idaho organized stake academies that later became junior colleges and parts of the states' higher education systems. One interesting consequence of that devotion to the ideal of continuing education was an observation made from a study of people listed in *American Men of Science* that the state of Utah had the highest per capita percentage of representatives of any state in the union.

Counsel of the Prophet

Upon receiving the call from President Benson to be a member of the Quorum of the Seventy, I received a document that contained a statement he had made to the General Authorities two or three years earlier. It is:

The gospel can be viewed from two perspectives. In the broadest sense, the gospel embraces all truth, all light, all revealed knowledge to mankind. In a more restrictive sense, the gospel means the doctrine of the Fall, the consequences of the Fall of man that brought into the world physical and spiritual death, the atonement of Jesus Christ which brings to pass

immortality and eternal life, and the ordinances of salvation.

It is most important that you young folks understand the parameters that govern the two methods of truth discovery. Let me share with you my understanding of the “scientific method” and of the “revelation method” of discovering truth.

The objective of the scientific method is to determine “what” happens in a given system and “how” it happens by making objective, reproducible measurements. The same results must be obtained each time the same set of conditions prevail or the validity of the work is in question. No subjective data or feelings are admissible as valid data. Things that we know by our feelings (like love for our family or impressions from the Holy Ghost) are not discounted as being nonexistent, untrue, or unimportant. They simply lie outside the framework of the rules of the objective scientific method.

The revelation method of discovering (or rather of communicating) truth is subjective. It depends upon additional senses to those we use to measure our objective data by—it uses our feelings and our emotional networks rather than only our “external” senses, which are the basis for quantitative scientific measurement. The knowledge provided frequently answers the question “why”—a question outside the purview of the scientific method. The receipt of revealed information is not reproducible at will by the investigator since it requires the positive action of a second individual, usually the Lord, which is beyond the control of the investigator.

It is important to recognize that the body of truth we call the gospel, in the narrow sense—including the things we need to know and to do to obtain eternal life—were given to mankind by the revelation method. The Lord chose to reveal these basic truths directly to prophets, who recorded them for our use as

scriptures. He wisely chose to insure that these truths were clear and correct through direct communication, and has so testified.

The Lord wisely left a vast set of truths for man to discover through experience and through experimentation using the scientific method approach. It is necessary for each of us to develop our mind and our intelligence, recognizing the principle of eternal progress, to achieve our potential as full participants in the celestial kingdom. Thus, a large body of useful truths that are external to strict gospel truths has been accumulated over the ages to bless and improve our lives.

Maintain a Balance

We need balance in our lives. It was apparent to Sister Hill and me when we were married fifty years ago that the happiest people we knew had maintained a balance in their lives. They had worked hard to be successful in earning a livelihood, in developing good family relations, and had also maintained their testimonies of the gospel by being of service to others—by accepting and magnifying calls to serve.

I had grown up in a home where all three areas received sincere attention. The academic side was very strong. My father was the dean of agriculture and mother was the dean of home economics at USAC in Logan when they met, fell in love, and were married.

The scriptures “Seek learning . . . by study and faith,” “The glory of God is intelligence,” “Man is saved no faster than he gets knowledge,” and study “things in the earth, and under the earth” were a part of my upbringing. As a matter of fact, I can’t remember when I didn’t know that I was going to get a Ph.D. This was not ever a matter of conscious teaching—more a matter of example.

I also can’t remember a time that I didn’t enjoy the blessing of faith. Doubts and questions periodically arose and were discussed

with my parents and were resolved; the underlying basic faith in the Lord was always there.

With this realization of the need for balance, it was easy for Sister Hill and me to agree to accept calls from our Church leaders at the same time that we worked hard on our studies, on our research, and on our secular pursuits. Her constant support and encouragement have been wonderful.

Early in the fall of my first year as a graduate student candidate for the Ph.D. in chemistry at Cornell, I was called to be a counselor in the branch presidency. My LDS student peers and some of the faculty members advised me not to dilute my academic efforts by taking on this assignment since our future success depended upon doing well in course work and in research. Together, my wife and I prayed for guidance. I accepted the call as I did the subsequent call to serve as branch president.

Interestingly, toward the end of my doctorate research, several of my colleagues in the lab, individually, came to me with a complaint that I “goofed off” every weekend, yet when I came to the lab on Monday I seemed to have more success in my experiments and exams than they enjoyed, even though they worked hard seven days a week. I explained to them that I was not goofing off in my church duties but was busy on Saturday and Sunday doing other useful work. Even the Lord rested from his labors on the Sabbath.

A special event also verified our belief that the Lord blesses those who serve. Two years before I completed my Ph.D. requirements, our first child, Richard, scheduled his advent. Since Sister Hill was providing most of our income getting her P.H.T. (putting hubby through) as a secretary, we began plans for leaving the graduate work for a year or two for me to earn enough money to then come back and finish the program. At a propitious moment, the chairman of my Ph.D. committee, who was responsible for teaching the

freshman chemistry courses, asked if I would mind becoming a part-time freshman chemistry instructor to teach the influx of navy and army specialized training program students, alternating terms with him—at a salary that turned out to be one and a half times what Sister Hill was earning. After a respectable overnight consideration, I consented to help out. This enabled me not only to continue my research and complete the program, essentially on time, but to cover the doctor and hospital bills for Richard and also for Margaret, who arrived just two weeks before I was scheduled to begin my forty-year career at the University of Utah.

Make Decisions Beforehand

Another important bit of counsel that I received from my father as a young man was that we should decide what we would do in various situations where temptations were served up—while able to think rationally and unemotionally rather than waiting until the actual situation developed and the pressure of peers, or of emotions, made making the right decision difficult.

I'd like to give two illustrations of the value of this counsel—the first was when I was about thirteen. Two of my closest friends wanted me to try smoking with them behind their garage. I solved that problem by serving as their “look-out” rather than as a participant.

Almost forty years later the second example occurred. I was a member of a scientific team sent to Moscow, in the USSR, to work out an exchange agreement with the Russians in the field of magnetohydrodynamics. The research and development were going on simultaneously in both our nations. The Office of Coal Research, which I then directed, was charged with the responsibility by President Nixon to establish a “bridgehead of understanding” in this nonmilitary field.

Our agreement, which was very one-sided in the Russians' favor, included our furnishing

their twenty-five megawatt experimental power plant with a special superconducting magnet, to be made at the Argonne National Laboratory, and also to build for them a special channel for collecting the generated electric power using electrodes developed after a great deal of research at MIT. In return for our giving them this equipment, they agreed to permit our technical people to come to Russia at their invitation to observe the equipment in action.

On the evening prior to our signing the protocol agreement, I was invited to attend a dinner at the Bolshoi Theater Ballet Restaurant not far from Red Square with the president of the Kirzhinsky High Energy Institute, his wife, his vice president (who spoke good English), and his wife. I was the only American invited to the dinner. It is traditional at dinner meetings in Russia for the host to offer a toast to be accepted by drinking a small glass of vodka. Then the other party would propose a toast, consuming a second small glass of vodka in the process. This toasting procedure continues until everyone has had an opportunity to have his or her particular moment on the stage.

As my host presented the first toast for good relations between the United States and the USSR, I picked up, instead of the vodka glass, my glass of water and had a sip from it to complete the toast. I then proposed a toast and capped it off by taking another sip of water from my glass. I noticed that the wife of my host was becoming very agitated, and as her turn came to offer a toast she picked up a fresh glass of vodka, walked clear around the table to where I was seated, and put it in my hand. She then said, “Doctor Hill will drink with us.” She then went back to her place, lifted another glass of vodka, and offered a gracious toast. She then watched me closely to see that I responded by drinking the vodka. Quickly through my mind flashed the idea that since I was the only American there, no one would know that I had participated in drinking the alcoholic beverage and that if I

did not do it I risked offending this beautiful lady and her husband. But I also recalled an agreement I had made with my father years before that I would never drink alcohol as well as my covenant with the Lord to keep his commandments. So, I gently put down the vodka glass and had another sip of water.

The lady became furious. She got so upset that her husband had to take her out of the room. I thought, "Uh oh, I have probably ruined our chance to complete this mission. They likely will not sign the agreement at the meeting tomorrow."

After the dinner was over I retired to the hotel and spent a fitful night wondering if I had jeopardized the whole purpose of our mission.

The following noon we had a small luncheon before the protocol agreement was to be signed. The vice president of the institute made it a point to sit next to me, next also, to his boss, for the meal we were to partake of before we signed the agreement.

He posed a question early in the meal asking why I had not drunk the vodka when his boss's wife had made such an issue of it. I explained carefully that it was a matter of religious conviction.

He said, "Religious conviction, what's that?"

So I responded that I belonged to The Church of Jesus Christ of Latter-day Saints and that through a prophet the Lord had indicated that alcohol was not good for man and that I had agreed as a boy not to use it.

And then I said, "Why do you ask?" He responded, "My boss's wife has an alcoholism problem, and he wants to know what it was that made it possible for you not to drink alcohol when under that heavy social pressure."

Needless to say, I was relieved and elated, particularly as we finished signing the protocol agreement and I was able to return to the United States with the mission a success.

Resist Evil Thoughts

I received another important truth as a young man in a meeting in the tabernacle when President David O. McKay was giving one of his memorable addresses. In his talk he made the statement, "Sow a thought, reap an act, sow an act, reap a habit, sow a habit, reap a character, sow a character, reap an eternal destiny." Then he proceeded to explain that no one ever commits any sin or wrongdoing unless they have thought about it ahead of time; and it is the mulling over or retaining in our minds the evil thoughts that ultimately result in our carrying them out. This statement worried me because my friends would occasionally tell dirty jokes, and the ideas expressed would stick in my mind and I would mull them over. I did not want to do the things that they suggested, remembering that they were contrary to the will of the Lord. Again, having an understanding father was a real asset to me because, as I explained my concerns to him, he told me that it needn't be a problem if I recognized that you cannot think of two different things at the same time. He said that while we can't keep out of our sight and hearing things that are evil, we can kick them out of our minds if we are willing to think of something else to displace them, like being in some special place doing the kind of thing we would most rather be doing at that particular time.

I decided to test this. The next time such a thought was planted in my mind, I began to think of being carried in an airplane over Mount McKinley in Alaska with all my ski gear on and with a parachute attached. I would bail out of the plane and gracefully land on top of that majestic mountain, take off the parachute, and then begin to ski down through the magnificent snow fields, spraying powder snow up behind me as I made elegant turns and enjoyed the special joy of making "galaenda sprungs" off mighty cliffs, landing safely in the snow below as I made my way

down the mountain. Needless to say, the original thought vanished. As a matter of fact, as I've recounted this technique I have found it difficult to refocus on the basic theme of my talk!

Other ways of accomplishing the same thing, advocated by many of the Brethren, include thinking of a hymn that you love very much and running the words and the music through your mind, or reciting a scripture that you have learned or are trying to learn. All of these techniques are valid in that they displace the original thought and enable you to avoid thinking so long about something evil that you will do it.

Theory of Evolution

There has been much attention in the news recently about the teaching of evolution. While serving as the dean at the University of Utah's College of Mines and Mineral Industries, I had interesting discussions with my faculty members in the departments of geology, geography, and geophysics concerning the evidences for evolution and concerning the misunderstanding many people have about the scientific method.

In the process of discovering new scientific truths and in trying to find ultimate answers to specific questions, it is essential that we develop theories that relate the experimental observations to each other. The theory as enunciated will then suggest additional tests that can be made to determine the validity of the theory or to modify it, which is generally the case.

Competent scientists recognize that theories are not laws but serve the function of testing the ideas and of pursuing new relationships. As Elder John A. Widtsoe said:

Facts are harmless enough; but the inferences drawn from them, sometimes true, often false, may involve serious consequences. The biggest questions before the modern world concern themselves

with the inferences drawn from the recently accumulated body of truth. [p. 15]

In this scientific age men and women should understand the processes and limitations of science; and should be able to test for themselves the doctrines drawn from scientific investigation. Confusion of thought lies back of most of our human discord; clarity of thought is a saving issue in any day. [p. 15]

To gather existing knowledge; to discover new knowledge; to give man an increasing control over natural forces; and to make love of truth the greatest human passion—these are the objects of science. [p. 21]

A natural or scientific law is the statement of the recognition of the regularity that appears when like facts . . . are grouped together. [p. 29]

Facts based upon verifiable and verified observations form the basis of science. They are the building blocks of science, and there are no other. Failure to recognize facts as the only foundation of science is the cause of most controversies . . . between science and religion. [p. 32]

The Gospel of Jesus Christ accepts all truth. . . . There is no limitation placed upon the truth that may be accepted by the members of the Church. [p. 33]

Facts never change, but the inferences from them are changeable. [p. 41]

The careful man does not become so enamored of an hypothesis or a theory that he cannot distinguish it from a fact. [p. 46]

Theories of science can no more overthrow the facts of religion than the facts of science. . . . One cannot build a faith upon the theory of evolution, for this theory is of no higher order than any other

inference, and is therefore in a state of constant change. [pp. 110–11]

Whoever would find truth must:

- (1) *Desire truth,*
- (2) *Pray for it,*
- (3) *Study, and*
- (4) *Practice it.*

Those who . . . find truth . . . will receive the glorious and priceless possession called a testimony. [p. 120]

[John A. Widtsoe, *In Search of Truth* (Salt Lake City: Deseret Book Company, 1930)]

The theory of evolution as presently taught involves the gradual development of higher forms of life from lower stages of living matter. The changes in the genetic makeup that the offspring inherit are assumed to be random changes rather than having been arranged or directed by forces external to the system. These changes would be termed “spontaneous” in the scientific sense. This theory poses a major difficulty for one who understands the laws of chemistry, in particular the second law of thermodynamics. This law is based on observations over several hundred years and states,

Any spontaneous process occurs with an increase in the randomness or the disorder of the system. It is not possible for a spontaneous process to produce a system of higher order than the system possessed at the beginning of the change.

One example of such a spontaneous process would be the observation that a boulder at the top of Mount Timpanogos once dislodged will roll down the mountain; however, we know that we could wait a very, very long time and never see a rock at the base of the mountain spontaneously roll back up to the top of the mountain to increase its height, thus increasing the order in the system. The only way to

increase the order in the system (i.e., to get the rock to the top of the mountain) is for energy to be expended from outside the system or for someone to direct the process by seeing that the rock is carried to the top of the mountain.

One of the current explanations of the improvement in plant and animal species with time is that they have been subjected to cosmic radiation, which caused genetic changes that resulted in a higher order of offspring survivability than the parent possessed.

While taking a course at Argonne National Laboratory a number of years ago, I heard a lecture from a Dr. Thamisian, a renowned biologist-geneticist, who told us of his research findings. He had personally directed the irradiation of grasshoppers in their egg, larva, pupa, and adult stages with every kind of radiation that grasshoppers have received in the hundred million years or so of their existence, at levels of radiation greater than that insect family had received during the total period of its existence. He said he *had* caused many genetic changes. Some of these included the loss of a foreleg or an antenna, or some other change, which *was* inheritable. However, not one of these changes gave a *greater* viability or survivability to the offspring than was possessed by the parent. He further added that, while he still believed in evolution, the radiation-induced genetic change mechanism was evidently not the one that caused the development of higher order in species.

As Latter-day Saints, many of us recognize that the processes involved in evolution are valid as we see improved strains and varieties of plants and of animals developed through judicious selection of their parents. But we would have to agree with those who understand the second law of thermodynamics limitation that such changes can only occur if *guided* or if energy from outside is available to improve the system.

We are in the very fortunate position of understanding that the Lord is in charge of

the universe and that with his direction positive genetic changes can in fact occur. Improvements of the spontaneous type hypothesized by the devotees of the current theory of evolution have not been found to support that theory.

Thus, as Latter-day Saints, we are in the very favorable position of making contributions to genetics and to the understanding of evolution by knowing that there is a mechanism for this kind of long-term development, provided one recognizes the hand of the Lord in a guiding sense during the changes.

I have a basic hope in the back of my mind that many of us were involved in the design of what has come on the earth. And I hope to learn that I had something to do with the design of the praying mantis, that interesting, fascinating insect.

We are also blessed, as members of the Church, with the knowledge that Adam and Eve, our first parents, as they were placed in the Garden of Eden were not subject to death until they partook of the forbidden fruit. They and all of their descendants are spirit children of God, created in his image, and are thus different from all other forms of life on the earth. As literal children of God, we possess the inherent capability of becoming as he is.

Those of you desiring additional understanding of what I have spoken about here should read the address “The Earth and Man,” delivered in the Tabernacle by Dr. James E. Talmage of the Council of the Twelve in 1931.

Foreordination

It is vitally important that you young people recognize your uniqueness in time and place in this world. On a statistical basis, the probability that you would be here at this time as a member of The Church of Jesus Christ of Latter-day Saints with your understanding of the gospel and of the accessibility of inspiration and guidance is very small. It is the order of one in a thousand. Now, since we know the Lord loves all of his children, we need to

inquire whether our being here at this time with these blessings is by chance or whether there might be a purpose to it.

The Prophet Joseph Smith, after translating the book of Abraham, noted that Abraham was told that he was chosen before the foundation of this world and was among those foreordained to complete a particular mission. He also recalled Alma 13:3:

And this is the manner after which they were ordained—being called and prepared from the foundation of the world according to the foreknowledge of God, on account of their exceeding faith and good works.

The Prophet pondered and prayed about the concept. In one of his talks, Joseph Smith made this interesting statement concerning the foreordination of man: “Every man who has a calling to minister to the inhabitants of the world was ordained to that very purpose in the Grand Council of heaven before this world was” (*Teachings*, p. 365). To me this means that each one of you, in all probability, was foreordained or foredetermined to accomplish very specific things in your lifetime here on earth. Each of you has received and will receive callings, and each of you will be set apart to perform certain acts for the benefit of our brothers and sisters. Since that is the case, we have a special responsibility to keep the commandments of the Lord so that we can fulfill all of those foreordinations given to us in that Grand Council in Heaven.

It is also important that we know why we are rotated in service in the Church. It might be your calling to be a teacher in the Primary or a home teacher to particular individuals you can bless if you are sensitive to the inspiration of the Spirit. In the future you will enjoy other opportunities to serve. Callings we receive can have one of two purposes most frequently. One of them is that you are the individual who can bless someone or accomplish a specific purpose

for the Lord. Or it may be that the calling is to train you to be ready for another opportunity in the future. In either event, we need to accept the calls prayerfully, qualify through study to accomplish the assigned work, and then pray for guidance that we will say and do those things that will assist the Lord in his program of bringing to pass the immortality and eternal life of man.

May each of you do your very best to tune in to the spirit of the Holy Ghost by studying, by praying, by keeping the commandments of the Lord. We need to study the scriptures on a regular basis to be sure that our mental reservoir will contain those things that the Lord can impress us, through the Holy Ghost, to say or to do at the propitious moment. May the Lord bless you to be effective in all that lies before you, I pray in the name of Jesus Christ. Amen.