New Perspectives

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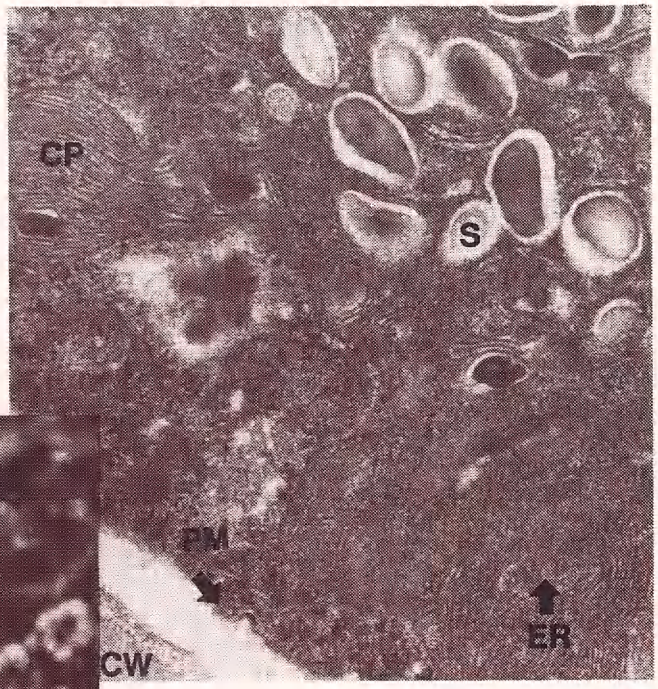

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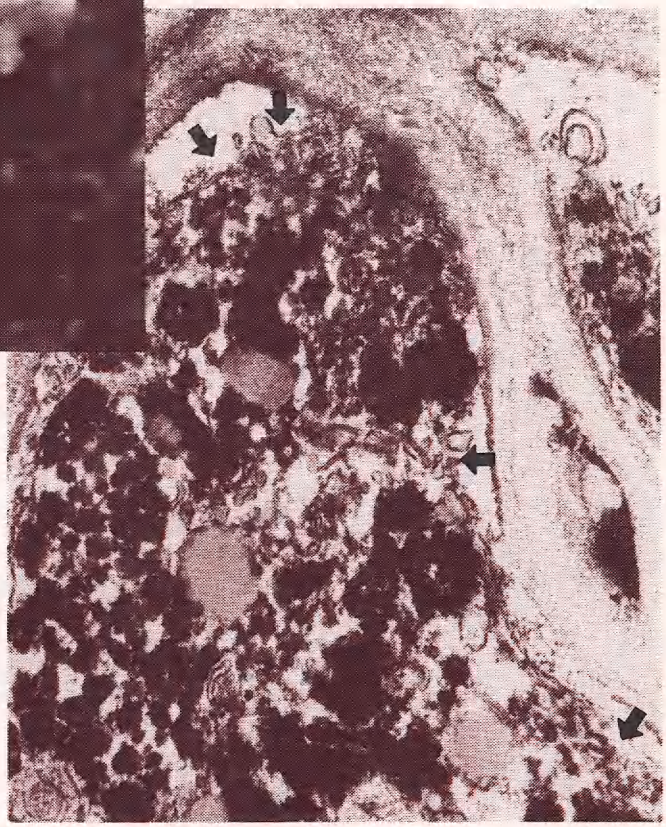

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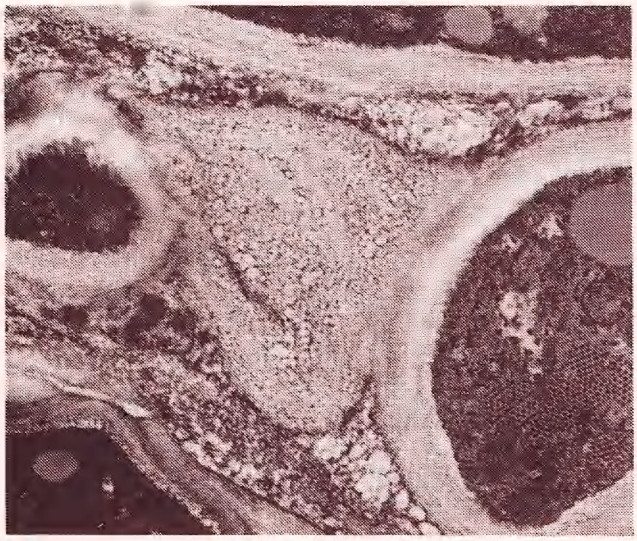

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Editorial

This is our first edition of *New Perspectives* as an editorial board. We are pleased with the large number and general high quality of articles which have been submitted.

We call your attention to several changes in the format which have been introduced with this edition. The editorial page and policy statement has been revised to include a style sheet statement for research articles in the future. We have included a table of contents for the first time and have organized the articles by type. We have also accepted some longer articles this time and will continue to do so, within limits. If you have a longer article in mind, which you have not submitted, let us know about it and we can negotiate.

For the last several issues, copies of *New Perspectives* have gone to BYU, to the Idaho Historical Society, and to the Library of Congress along with our copyright registration. We plan now to expand our exposure to include copies to all of the major college and university libraries in Idaho and Utah.

We hope you enjoy this and subsequent issues and that you plan to contribute in the future. If you have ideas or suggestions for us, please let us know.

Sincerely,

John Nielson, Editor
William Conway, Assistant Editor
Joe Romney, Assistant Editor

New Perspectives is published semi-annually by Ricks College. It welcomes research articles, reports of significant activities, essays, poetry, short stories, book reviews, art, photography, and other work of an academic or artistic nature.

Research articles should be submitted according to the *Chicago Manual of Style*, 13th edition (author date, page). Whenever possible, submission of a hard copy and computer disk is requested. Submit manuscripts to any one of the editors.

About the cover: (Magnified Photos of Lichens submitted by Lorentz Pearson, Biology Department.)

A. Lecanora melanophthalma, a foliose lichen common on lava rocks in the deserts of eastern Idaho. This species is very sensitive to atmospheric pollution and can seldom be found in the larger cities of the area. The cup-like structures are apothecia. Spores are produced in little sacs inside each apothecium, 8 spores in each ascus or sac. The entire plant body, or **thallus**, of this specimen is 2.5 cm (1 inch) in diameter.

B. Transmission electron microscope (TEM) picture of a very thin slice through the thallus showing part of a cell in the inner cortex tissue (or algal layer). The cell wall (CW) is seen at upper left; there is a gap between it and the plasma membrane (PM) caused by the membrane pulling away from the wall as the cell dried during preparation for TEM observation. At upper right is a chloroplast (CP) consisting of parallel bands called thylakoids (Th) and containing a pyrenoid with a starch grain adhering to it. Some free starch grains (S) are at lower right, some with other lichen substances adhering to them. Endoplasmic reticulum (ER) can be seen at lower left. (Magnified 37,550x)

C. A cell from the medulla or innermost tissue of the lichen body. This material was prepared more carefully than that in B and the plasma membrane is appressed tightly to the cell wall as it normally is in nature. The rigidly oriented crystalline particles in the cell at upper left (see arrow) are probably virus particles. Lichens are a perfect example of symbiosis: the cell in B is a phycobiont or algal cell; the cell in C is a mycobiont or fungal cell. (Magnified 37,550x)

D. A well prepared cell from the inner cortex or algal layer of a lichen exposed to 1,200 parts per million sulfur dioxide for 30 minutes. Not only has the plasma membrane pulled away from the cell wall in places, but it has also been torn, allowing potassium and other electrolytes to leak out of the cell (compare with B in which the plasma membrane has pulled away from the cell wall but is not torn). The membranes enclosing the chloroplasts and other organelles have been damaged resulting in an amorphous appearance; the thylakoids, for example, cannot be identified. When lichens that have been exposed to sulfur dioxide and other pollutants are immersed in distilled water, the leakage of electrolytes from damaged cells like these causes a significant increase in conductivity of the water in which they were immersed. (Magnified 37,550x)

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Letters

We welcome your short letters of comment on previous issues and articles or other topics of general faculty interest. Letters should not exceed 300 words.

An Open Letter to the Academic Vice President

Dear Dean,

Remembering the topic of our most recent discussion, after you invited comments on a Ricks mission statement, I return afresh to that subject. Preparing a mission statement could be as rigorous as choosing a logo.

Seems that a mission statement should answer questions like: What do we believe? What are we doing? What differentiates us? What are we? A mission statement should speak to teachers as they contemplate classes, to scholars as they study, to administrators as they direct. And it should embody verbal simplicity and power like the Church's statement, like Joseph's Articles of Faith, like the beatitudes. A creed affords no fuzz.

If we are behaviorists, we can talk about "student outcomes," as in the current mission statement; but a nobler mode might be to teach the principles and let (Is "letting" actually an option: Has anyone ever been coerced to act well? Without agency have human institutions ever worked? Has anyone ever been saved because someone else conditioned him for salvation? Joseph could not have meant "let" as in granting permission, but as in the imperative: "Let them govern themselves!" the students become their own governors.

Coming from me, the previous sentence is an understatement. How could we have any business other than "providing a quality education?" The teacher's stewardship must differ from that of the army officer, where the group objective is superior to any individual's interest. Our mission is within "quality education," not around it.

We of CES attempt to enter the world of the university, a world grown out of medieval secularism, todays cynical world mentioned last Friday by Bishop Eyring; but we enter through the ancient temple of faith, the fount of Bishop Eyring's curiosity and caring. Some say the two can't be comingled, these perpetual antagonists Athens and Jerusalem. Whether they can or cannot, our mere presence requires that we wrestle to reconcile them. Given: We are sponsored by the Church; We are called a college. If we are children of the university tradition, every teacher and every student has to ask himself about the connection between his discipline and his testimony:

To unify the disciplined mind and the disciple's spirit.

Some say reconciliation is unnecessary: we can just teach the gospel and disregard the secular sciences (as if to say, In CES we are not seeking the truth; we have the truth). Three fallacies leap to mind: God does not endorse ignorance; precious works from secular minds indubitable are here; and we are in the world. Besides, if we are to teach only the explicit religion, we have no need of a college, only an institute of religion. If we are not children of the university tradition, then we are all institute teachers and our "college" is a sham:

To learn from the best books, by study and faith.

Aside from the explicit teaching of religion, CES is the Church's attempt to answer the age-old question, What is the good life? World events too numerous for summary here make the need for education more poignant now, if that can be, than when Joseph organized the School of the Prophets. The stone cut out without hands grows geometrically; since George Albert Smith the Church has become both respectable and universal; the era of Ephraim as a minority in Zion comes on apace. Elsewhere, professional parasitism, ethical collapse, and blind eyes multiply:

To prepare minds, hands, and hearts for productivity and service.

I want a mission statement I can wear on my office wall or on my tie clip: concise, precise, purposeful. Lacking those, our statements of goal and method remain sometimes redundant, sometimes contradictory, sometimes ambiguous, reflecting our thoughts more clearly than we might wish.

For example: A mission is what one is doing or will do, a summit yet unclimbed. What's done is mission accomplished - history. Positing testimony and quality education as missions implies that they are not yet attained. Perhaps that is true, or perhaps their attainment is part of our history. But since we cannot control them in the present nor in the future, placing them in the mission statement obscures both goals and methods.

The good mission statement doesn't just state the obvious. It states the truth so that it seems obvious.

Sincerely yours,
Vaun Waddell

Dear Vaun,

Thanks for your perceptive comments on the Ricks mission statement. As I'm sure you fully understand, writing one that can fire the imagination while at the same time be both comprehensive and brief is a tall order.

I appreciate your continuing interest in helping us develop a statement that is worthy of our institution and that we can all be proud of.

I'm sure we haven't heard the last word on this yet. I quite like the three statements you highlighted in your letter. I'll be anxious to see how they are received across campus.

Best Wishes,
Dean Sorensen

Editor,

In "Logic and Religious Values" (spring 1989 issue of *New Perspectives),* Ron Messer points out how often a person not trained to think logically will move from a logical sequence to one that is not. For example,

"All pornography is wrong,
X-rated movies are pornographic,
therefore X-rated movies are wrong"

leads some Ricks College students to an unsustainable sequence:

"X-rated movies are wrong,
R-rated movies are not X-rated,
therefore R-rated movies are not wrong"

I enjoyed Ron's article partly because in the hundred or so term papers I read every semester I often detect faulty reasoning, sometimes humorous, sometimes possibly dangerous. I appreciate his reminder to us to watch for *hidden assumptions* and to be aware of the tendency among many students to assume that the converse of a true premise is also true. Even with experience in logic and the development of sound conclusions, we can miss a few faults in the papers we read, including some of the papers we have written ourselves. We owe it to our students and to ourselves to be aware of the things Ron called to our attention.

However, it seems to me that there may be some hidden assumptions in the closing paragraphs of Ron's paper in connection with his use of the word *liberal.* According to my unabridged dictionary a liberal is

> "One who advocates greater freedom in religious or political matters," and a liberal person is "generous in a large and noble way, bounteous, broadminded, not servile, not restricted, not narrowminded, and having a tendency toward democratic or republican forms of government rather than monarchical or dictatorial forms."

Synonyms are "generous, bountiful, munificent"; antonyms are "stingy, grudging, narrow, and bigoted." In American politics, Democrats tend to be liberal while Republicans are generally considered to be more conservative.

Recently, as we drove down the highway, I read aloud from the closing paragraphs of Ron's paper his statement, "Even a cursory reading of the lottery proposition should have frightened the most liberal citizens." My wife immediately asked, "Is he saying that only Democrats voted for the lottery?"

"I don't think so," I said, "But I am not sure." Subconsciously, she was developing one of Ron's hidden premises. In doing so, she interpreted his statement, "should have frightened the most liberal citizens" to mean "The most liberal citizens were not frightened by the lottery proposition and therefore voted for it." Her reasoning probably went like this:

> All of the most liberal citizens voted for the lottery
> Democrats are liberal citizens
> Therefore, all Democrats voted for the proposition.

She then developed the converse, which, of course, would not necessarily have been true even if the original premise had been:

> Republicans are not liberal citizens
> Therefore, Republicans did not vote for the proposition

In this case, of course, the hidden premise itself, that all liberals voted for the proposition, is false, and the conclusions based on it are likewise false.

In his other use of *liberal,* Ron starts out with a true premise, that in a liberal world we need to master reasoning ability. He applies this to virtue in general and especially to drugs and pornography. Therefore,

> If we live in a liberal world, we must guard our virtue carefully (which could also be stated: If we live in a world in which we have free agency, we must guard our virtue carefully)
> We live in a liberal world
> Therefore we must guard our virtue carefully.

But the parents of many of our students at Ricks, and some of the students as well, move on to the converse:

> Our students at Ricks College do not live in a liberal world; they live in a restrictive and conservative environment
> Therefore, they do not need to guard their virtue carefully (for there are no drugs, pornography, or other dangers here).

Worded differently and in more general terms:

> Therefore they do not need to develop their reasoning ability (they only need to memorize the premises; and, of course, go to class dressed and groomed according to the "standards" whether or not they understand why the standards exist)

Finally, I was very pleased to note that after using the word *liberal* in what seemed to be a rather negative way, and I don't suppose Ron meant it to be, he finished on a very positive note with what might be called the first article of faith of Mormon liberals: "I teach them correct principles, and they govern themselves." The key, Ron tells us, is to help our students draw accurate conclusions from true principles; I agree that this is important.

Lorentz Pearson, Biology

Editor:

I would like to answer Lorentz Pearson's criticism of my article 'Logic and Religious Values' by pointing out the errors in his logic; but I cannot, for the fault is in the ambiguity of the word 'liberal,' not in his criticism.

Original: *"Even a cursory reading of the lottery proposition should have frightened the most liberal citizens."*

The word 'liberal' carries too many connotations, both positive and negative; consequently, it was a poor choice in the sentence. For clarity I should have amended the sentence to read, "Even a cursory reading of the amendment should have frightened even those who favored the lottery."

Original: *"To live in a liberal world, we need to master the same reasoning ability."*

One critic wrote to me, "I saw in it at least one 'hidden' assumption with which I felt uncomfortable. It is, a world influence by liberals is necessarily an evil world. If that is what you meant, I'm sure you would have a hard time defending such a proposition even against some 'conservative' scholars."

When I think of 'liberal' as used in the sentence above, I think of a former professor at USC, one of the most brilliant men I have ever met: a prolific writer, a book critic for the LA Times, and an outstanding artist. And yet his conclusions appeared to me to be outrageous. He advocated absolute freedom in every facet of life, to the exclusion of what I perceived as one's responsibility to God and to society. In each class period he preached his philosophy to young eager minds.

Many of my students seem to think that testimony is all that is needed to get their point of view accepted, even by those who appear amoral such as my professor. Many are unable to sustain an argument, and resort to begging the question: 'We need stop signs because it is necessary to stop.' My point is that in a world where our point of view will increasingly be challenged, it isn't always enough just to say 'You are incorrect.' We must also be able to say 'You are incorrect because of premises 1, 2, 3, etc.

Original: *"No law should be passed whose only virtue is the good faith of the legislators."*

The critic continued: "I cannot think you believe that. If you do, then reasonably you must also believe that the Constitution of the United States is invalidated as a good law because it resulted entirely from only the "good faith" of its founders. I doubt that any scholar is omniscient enough to use phrases like 'No law should ever be passed. . . .'"

I should have been more conscious of the scope of the statement. I was still warmed up about the lottery and didn't realize I was challenging the entire Constitution of the United States. I do take issue with the rest of the critic's statement: "This leads to another statement which indicates the same point. You wrote: 'That is partially the reason we lost the lottery issue. Many voted it in, not because they were for it, but because they couldn't see the reasons to be against it.' My friend, you left yourself wide open with this statement. How many are "many"? And how do you know what voters thought when they voted? How do you know what motivated them to vote the way they did? All you really know is what you thought and what motivated you. You naturally assume that what you thought was right and what motivated you to vote the way you did was good and that all other good people would have thought the same as you and been motivated by the same good force as that by which you were motivated. Isn't that assumption pure dynamite in the world of scholarship?"

That criticism is intuitively correct. The author is simply insisting on me verifying my conclusions. I can't do that. I haven't the resources. Therefore, I am going to appeal to Karl Popper who provides another way to achieve the same results. Popper said you can falsify a universal statement, but cannot verify it. He added that you can verify a particular statement, but cannot falsify it.

Therefore, I am going to present the argument that led me to the conclusion in the first place, and thus build my case from simple induction. I am going to give a detailed analysis of the lottery amendment (in a separate article in this issue). Following that analysis, I am going to make some predictions, and then let time determine if I am correct.

Even if my predictions prove correct, that still leaves open the question, 'Did every voter already realize the implications and voted the lottery in anyway?' My assertion that the average voter did not is based somewhat on the literature about the lottery: the emotionalism, the denial of transparent implications, the narrow arguments of why the lottery would be good for Idaho. The very absence of addressing certain issues surrounding the lottery suggested to me that those issues were not definitively considered. Secondly I have noticed that we sometimes seem more persuaded by one liners, soap opera lives, and facial makeup than serious issues, even when selecting the President of the United States. I concluded that it was possible that some approached the lottery issue in the same superficial way.

Ronald K. Messer

Research Articles

The Dimensions of the Book of Mormon Plates

by Wesley D. Smith[1]
Department of Chemistry

Joseph Smith told such an elaborate story concerning the translation of the Book of Mormon, that, were it not true, we would expect to find his account full of contradictions. He described in great detail the actual size of the golden plates. Can his description and all its subtle implications stand up to careful analysis? One implication involves the enormous density of gold. Could he really have lifted and carried such a stack of plates? Another implication has to do with the length of the published Book of Mormon. Could the unsealed portion of the plates have been adequate to contain all the text plus all the material from the lost 116 pages of manuscript? That these questions can be answered in the affirmative gives added credence to Joseph Smith's testimony.

Description of the Plates

Although well over a dozen people saw or felt the plates in one way or another,[2] there is no record that anyone actually made any measurements on them. Nevertheless, from first-hand accounts, we can compile a number of quantitive particulars about the plates. These consist of individual estimates, based on the witnesses' best recollections--often after the passage of many years. As might be expected, they do not all agree to the nearest decimal point.

The descriptions derive from two types of sources: 1) words written by the witnesses themselves, and 2) accounts of interviews with the witnesses written by others. We take the former to be the more reliable.

Perhaps the best of these comes from Joseph Smith himself in the Wentworth Letter. He said the record was

> ". . . engraven on plates which had the appearance of gold. Each plate was six inches wide and eight inches long, and not quite so thick as common tin. They were filled with engravings, in Egyptian characters, and bound together in a volume as the leaves of a book, with three rings running through the whole. The volume was something near six inches in thickness, a part of which was sealed. The characters on the unsealed part were small, and beautifully engraved. The whole book exhibited many marks of antiquity in its construction, and much skill in the art of engraving."[3]

Emma Smith, Joseph's wife, said the plates, covered with a small linen table cloth, often lay out on a table in their home. She sometimes had to move them from place to place in doing her work.

> "I once felt the plates as they lay on the table, tracing their outline and shape. They seemed pliable like thick paper and would rustle with a metallic sound when the edges were moved by the thumb, as one does sometimes thumb the edges of a book."[4]

One night, Joseph put the plates inside a pillowcase and allowed the rest of his family to feel them. Around fifty years later, his younger brother, William, recalled,

> "I was permitted to lift them as they laid in a pillowcase, but not to see them, as it was contrary to the commands he [Joseph] had received. They weighed about 60 lbs. according to the best of my judgment."[5]
>
> "One could easily tell they were not a stone, hewn out to deceive or even a block of wood. Being a mixture of gold and copper, they were much heavier than stone, and very much heavier than wood.[6]

From these original words and other direct quotes, we have the following details:

1. *Appearance.* Significantly, both Joseph Smith and the Eight Witnesses[7] said only that the plates had the "appearance" of gold.

2. *Composition.* William Smith described the metal specifically as a mixture of gold and copper, although it is not clear how he or anyone else could have known that.

3. *Size of the Pages.* A quote by Lucy Smith,[8] the prophet's mother, corroborates Joseph's 6" x 8" description, but statements attributed to Martin Harris[9] and David Whitmer,[10] two of the Three Witnesses, give various other sizes (e.g., 7"x 8", 6" x 9", and 6" x 10").

4. *Thickness of the Pages.* Joseph Smith, Martin Harris, and David Whitmer[11] all compared the thickness of the metal leaves to that of "common" or "ordinary" tin. Whitmer also said the pages were about "as thick as parchment."[12] However, a printed interview with William Smith, who only felt the plates, states they were the thickness of panes of glass.[13]

5. *Height of the Sealed and Unsealed Portions.* Both Joseph Smith and William Smith[14] agree that the whole stack of plates was around six inches high, but Martin Harris said it was only about four inches in height.[15] David Whitmer, on one occasion, described one-third of the stack as loose, in plates, and the rest "solid with perceptible marks where the plates appeared to be sealed."[16] Another time he said "about half of the book was sealed."[17]

6. *Weight of the Plates.* William Smith maintained throughout his life that the plates weighed about sixty pounds. Even his deathbed statement[18] in 1893 reiterated that figure. Martin Harris put the weight in the 40- to 60-pound range.[19]

7. *Other Details.* John Whitmer, one of the Eight Witnesses, said, "I handled those plates; there were fine engravings on both sides."[20]

Here, we are less concerned that the witnesses agree on all the numbers as we are that the numbers are compatible among themselves. In particular, we want to examine whether a 6" x 8" x 6" bundle of gold-like metal plates could weigh as little as 50 to 60 pounds. And we want to determine whether the content of the Book of Mormon and the content of the lost 116-page manuscript could both fit on only 2 to 2 1/2 inches of those plates.

The Density of Gold and the Weight of the Plates

Gold is one of the densest substances known, every cubic inch of it weighing nearly seven-tenths of a pound.[21] As a naive first estimate, if we considered the plates as a 288 cubic inch (6" x 8" x 6") solid block of pure gold, we would find their weight

to be just over 200 pounds. But, of course, the stack of individual metal pages was not a solid block, and, further, the leaves were probably not made of pure gold either.

The Space Between the Pages. Any stack of thin metal sheets, even if the metal is machine-rolled to uniform thickness, will not lie perfectly flat together. Each sheet will be distorted enough to cause some empty space between it and its neighbors. This would be especially true if the sheets were hand-made and were covered on both sides with engravings. Thus, we would expect the Book of Mormon plates to weigh less than an equal-sized block of solid metal. Loveland[22] guessed they would weigh about half as much. Putnam,[23] a metallurgical technician, used a 40% figure. However, these were arbitrary estimates.

Samples of zinc and copper sheets[24] were stacked and measured. The actual height of the stack was compared to the sum of the sheets' individual thicknesses, and the percent empty space in the stack was determined from that ratio. *Table 1* shows that the empty space varied from 27% to 71%. The results depended on the kind of metal, the size of the sheets, and how they were stacked. But this test shows, by actual measurement, that the Book of Mormon plates could have weighed anywhere from 27% to 71% less than a similar block of solid metal.

Table 1

The Percent Empty Space in Stacks of Metal Sheets

Sample	Number of Sheets	Thickness of Sheets	Height of Stack	Percent Empty Space
Zinc (1/2" squares)	37	0.010 in.	0.51 in.	27%
Zinc (1/2" x 3" strips)	17	0.010 in.	0.24 in.	29%
Copper (8" x 10" sheets)	3	0.010 in.	0.055 in.	46%
Copper (1" squares, compressed)	50	0.002 in.	0.24 in.	58%
Copper (1" sqrs, free-standing)	50	0.002 in.	0.35 in.	71%

The Composition of the Metal. William Smith's description of the plates as "a mixture of gold and copper"[25] and Nephi's record that he "did make plates of ore" (I Nephi 19:1) seem to indicate that the metal was an alloy.[26] Such an alloy would have distinct advantages over pure gold, a very soft metal. Now only would it be lighter, but it would hold engravings more permanently and with less distortion.[27] Archeological findings, especially by Lothrop in Mexico, Guatemala, Panama, Colombia, and Peru, have unearthed numerous artifacts made of gold-copper alloys.[28] Many of the alloys also contained silver. In fact, the gold-copper-silver mixture was so common that it was given its own name, "tumbaga." It accounted for two-thirds by weight of the gold recovered in the Lothrop studies.[29] One hundred eighty-eight tumbaga artifacts varied widely in their composition, ranging from 9% to 90% gold, from 5% to 75% copper, and from 0% to 23% silver.[30] The remarkable thing about nearly all of these objects was that their "varied metallic content [was] not apparent to the eye owing to *mise en couleur* gilding."[31] By this process, the ancient Americans used an acid to dissolve away the surface copper and silver leaving behind a layer of the noble gold which they braised or burnished into an inert coating.[32] In other words, they had the technology to give any gold alloy, regardless of its distinctive color,[33] the surface appearance of pure gold.

Calculations[34] show that the densities of these alloys vary from as little as 0.3 pounds per cubic inch to nearly 0.7 pounds per cubic inch, the density of pure gold itself.

The Calculated Weight. Three variables are needed to calculate the weight of the plates: 1) their outer dimensions, 2) the density of the metal, and 3) the space between the pages. None of the three can be specified without some speculative assumptions. Which of the eyewitnesses was best at estimating the size of the plates? Which density best represents the metal involved? What is the most reliable figure for the amount of empty space between the leaves? We cannot answer any of these questions with total assurance; however, we do know the density must be between zero and 0.7 lbs/in^3 and the empty space[35] must be between 0 and 100%. Therefore, we can calculate the results of all possible combinations within these limits and be sure that the actual weight will be among the output. *Figure 1* shows the weights in pounds of 6" x 8" x 6" stacks of plates made with metals of various densities and with various spaces between them. (Similar plots could be made using dimensions different from Joseph Smith's 6" x 8" x 6".)

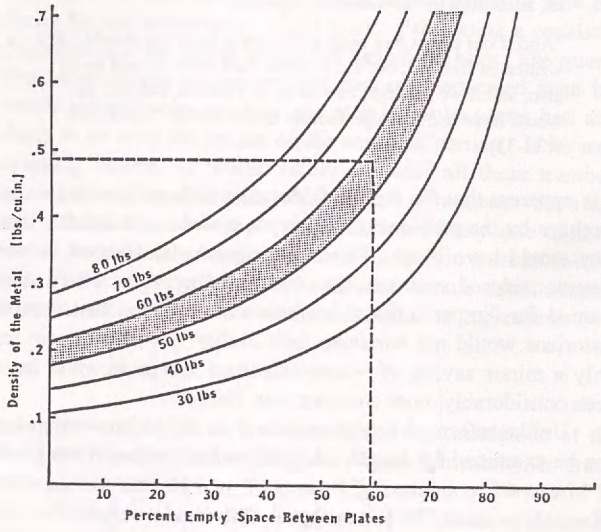


FIGURE 1. The weight in pounds of a 6" x 8" x 6" stack of metal plates as a function of the metal's density in pounds per cubic inch and the percent of empty space between the plates. For example (see dotted lines), if the metal had a density of 0.46 lbs/in^3, equal to that of a Colombian gold plate [Lothrop, *op. cit.*, 7:308], and there was 58% empty space between the pages, equal to that of the measured copper squares [Table 1], then the weight would be 56 pounds. The shaded area indicates the range of weights compatible with eyewitness reports (50-60 lbs).

Although we cannot tell which point on the graph represents the real weight of the Book of Mormon plates, we can conclude that there are literally hundreds of combinations of densities and spaces that result in weights around fifty to sixty pounds. Any plausible density--the tumbaga artifacts ranged from 0.3 to 0.7 lbs/in^3-can be coupled with a reasonable spacing parameter--measurements varied from 27% to 71%--to give a weight that is consistent with recorded testimony. It turns out, however, that the height of the unsealed portion of the plates--a seemly unrelated quantity--places additional restrictions on this calculation.

The Length of the Text and the Height of the Plates

English-language editions of the Book of Mormon contain over five hundred, closely-spaced, double-column pages of text. Printed on thin paper, they are themselves most of an inch thick. The plates, on the other hand, were engraved on metal sheets that were several times thicker than paper and had substantial amounts of empty space between them. Could a two- or two-and-a-half-inch stack of such sheets possibly contain that much information, let alone the contents of the 116 pages of lost manuscript? It could only if the language was compact enough and the individual plates were thin enough.

The Economy of the Language. It is difficult to get more than a qualitative feeling for the original Book of Mormon language. David Whitmer said each engraved character would make at least one full English word, and "frequently" a single symbol would translate into an entire sentence taking two lines of manuscript.[36]

Internal statements by Moroni indicate that the language can be compared to Hebrew. Worried about imprecise rhetoric in the writing, he explained,

> "And now, behold, we have written this record according to our knowledge, in the characters which are called among us the reformed Egyptian, being handed down and altered by us, according to our manner of speech.
>
> "And if our plates had been sufficiently large we should have written in Hebrew; but the Hebrew hath been altered by us also; and if we could have written in Hebrew, behold, ye would have had no imperfection in our record." (Mormon 9:32-33)

It is apparent that the Book of Mormon authors were restricted (perhaps by the problem of weight) to plates much smaller than they would have liked. Thus, they abandoned Hebrew, which they considered superior, for reformed Egyptian, which they blamed for "imperfections" in the record. Given that careful historians would not handicap their ability to communicate for only a minor saving of space, reformed Egyptian must have been considerably more compact than Hebrew.

Unlike reformed Egyptian, however, the Hebrew language can be examined for length. A Hebrew translation of the Book of Mormon[37] contained 623 pages of hand-drawn characters at 28 single-column lines per page. This was compared to the 1973 large-type edition of the English Book of Mormon which had 522 double-column pages at 48 lines per page. In characters adjusted to equal heights, the Hebrew measured just under half the length of the English.[38] Put another way, if the large-type English text were transferred as is, it would fit on 261 six-by-eight inch plates (one page per side); the equal-height Hebrew text would fill only 130. Judging from Moroni's comment, we would expect the reformed Egyptian to occupy fewer yet.

The Full Text on the Plates. The unsealed portion of the plates contained more than the books from I Nephi to Moroni; it also contained all the material in the 116-page foolscap manuscript lost by Martin Harris.[39] Oliver Cowdery's full-lenght manuscript of the Book of Mormon, the so-called "printer's copy" on foolscap paper, filled only 466 pages.[40] Thus, the plates held a fourth (116/466 = 0.25) again as much text as the published Book of Mormon and perhaps even more.[41] Therefore, we presume the full text on the plates to be at least 125% of the published amount.

The Thickness of the Sheets. The witnesses compared the metal pages to common tin, thick paper, and parchment. In the 19th century, ordinary "tin" was really tin-plated iron.[42] Since it was hand-made, it varied in thickness,[43] but it measured between 30 and 34 gage or about 8 to 12 thousandths of an inch thick.[44] Specimens of parchment,[45] from 15th century to modern times, were measured with a micrometer and were found to be from 9 to 12 thousandths of an inch thick. A manila file folder, taken as an example of thick paper, came out 11 thousandths. Thus, the witnesses seem to be describing a thickness in the vicinity of a hundredth of an inch (0.010 in.).

The Calculated Height of the Unsealed Portion. The variables involved in this calculation include the area of each plate, the size of the engraved characters, the English-equivalent length of the text on the metal record, the relative compactness of the reformed Egyptian, and the amount of height used by each plate. In contrast to the weight calculation, we cannot even set absolute upper and lower bounds on some of these variables without making assumptions. Nevertheless, we can establish limits which are generous enough to permit a valid conclusion.

Let us adopt, as a composite variable, the number of English pages that could be translated from the two sides of a single plate. By incorporating the area of the plates, the size of the characters, and the economy of the language, this allows us to combine several conjectures into one number. If we exchanged each piece of paper in the published Book of Mormon for a metal plate, then we would have exactly two pages of English per plate (one on each side). To fill six-by-eight-inch plates, the English letters would have to be the size of those in the large-type edition or just barely larger. Using the same-sized Hebrew characters, which carry about twice the information, we could thus get the equivalent of about four pages of English per plate. Since the reformed Egyptian language is even more compact and its engraved characters could have been smaller than the large-type English letters, four pages per plate is a probable minimum for this variable. Ten pages per plate is a conceivable maximum.

If we take 700 pages of English as the equivalent amount of text (134% of the published 522 pages, an arbitrary amount greater than the 125% of the presumed minimum) and 0.010 inch as the thickness of each sheet, then we can plot the height of the unsealed portion as a function of English pages per plate and the space between the plates. *Figure 2* is the result of these calculations.

Again we can conclude that there are many reasonable ways of making calculations that agree with the witnesses' claims.

The Two Calculations Taken Together

Either calculation alone allows a good deal of latitude in the conditions necessary to obtain consistent results, but both of them taken together are much more restrictive. The variables are interlocked in a precise way. The weight of the plates, W, is related to their outer-dimensional volume, V, and the density of their metal, D, by the equation,

$$W = VD\,(1 - S).$$

The height of the unsealed portion, H, is related to the number of English-equivalent pages of text in that portion, N, the number of those pages per plate, P, the thickness of each plate, T, according to the relation,

$$H = \frac{NT}{P}\,(1 + S).$$

The fraction of the plates' volume that is empty space, S, is the same in both equations. Eliminating that common variable, we have,

$$\frac{HP}{NT} = \frac{W}{VD} = 2$$

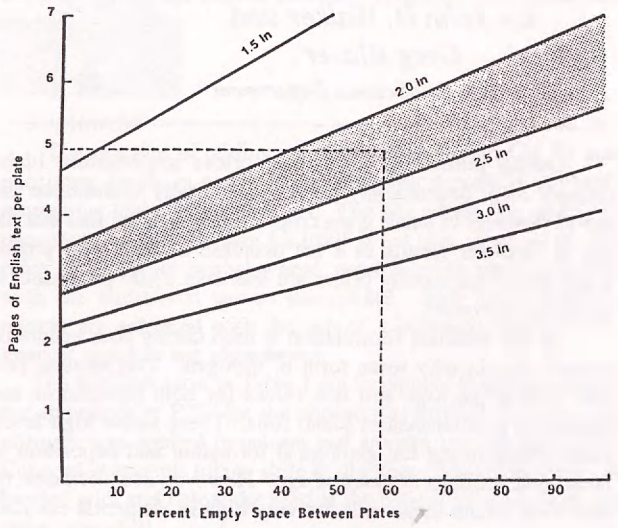


FIGURE 2. The height in inches of the unsealed portion of the plates as a function of the number of English-equivalent pages of text per plate and the percent of empty space between the plates (assuming plates 0.010 inch thick). Seven hundred pages of English is assumed as the total content of the unsealed portion. For example (see dotted lines), if there were 5 pages of English per plate and the same 58% empty space as the example in Fig. 1, then the height is 2.2 inches. The shaded area indicates heights consistent with the testimony of the witnesses (2.0 to 2.5 inches).

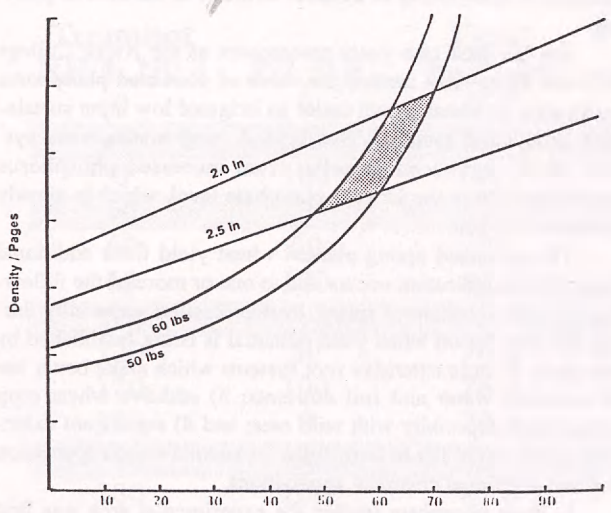


FIGURE 3 Fig. 1 and Fig. 2 Combined. Although it is not unique, the shaded areas show one relatively small range of parameters that yields both a weight of 50-60 lbs. and a height of 2.0-2.5 in.

Figure 3 is a combination of *Fig. 1* and *Fig. 2* and illustrates one example of how the variables interrelate. Not all of the quantities can be chosen at random. The figure shows the typically small range of associated parameters that yields both a set of plates weighing 50 to 60 pounds and an unsealed portion measuring 2 to 2 1/2 inches. The range is small because the variables have an opposing relationship. If the amount of space between the plates is increased, then the metal in the plates can have a greater gold content (i.e., they can be denser) and still weigh 50-60 pounds. On the other hand, that same increase in space allows for fewer plates in a 2 1/2 inch stack and requires an inordinately large number of English-equivalent pages to be contained on each plate. By contrast, if the space is decreased below the optimum, it becomes easier to fit the Book of Mormon text on the plates, but it implies that they must be made of an alloy with an unreasonably low gold content. Only when the space between the plates is just right can we calculate heights and weights that agree with the witnesses' descriptions.

This restrictive relationship among the variables allows us to estimate some of the attributes of the plates that are not recorded in history. Despite all the uncertainties in the witnesses' accounts, the density of the metal clusters around 0.4 to 0.6 lbs/in^3 (implying an alloy over half gold). The reformed Egyptian comes out about half again as compact as Hebrew so that 5 to 6 pages of English could be obtained from one plate. Only then do the calculations yield both a weight near 60 pounds and a height close to 2 inches.

The fact that each variable *does* have a plausible range shows that Joseph Smith's testimony cannot be impeached by an analysis of the plates' dimensions. More significantly, the fact that the allowable leeway is *small* becomes powerful new evidence for the authenticity of his story. Fabricating a consistent description of the plates would not have been easy. The quantities are so subtly interdependent that an uneducated farm boy would probably not see how the weight of the plates had anything to do with the height of the unsealed portion. If he were creating fiction, he would likely consider all these numbers among the trifles which he could choose at random. Yet a tiny underestimation of a slight exaggeration of any one of them would be exposed as a glaring contradiction in a study such as this. Thus, when we see how well each minute detail actually does fit with all the others, we cannot fail to be impressed.

Notes

1. The assistance of Professor Richard L. Anderson of the Religious Studies Center, Brigham Young University, is gratefully acknowledged.

2. Richard L. Anderson, *Investigating the Book of Mormon Witnesses* (Salt Lake City: Deseret Book Company, 1981).

3. Joseph Smith, *History of the Church of Jesus Christ of Latter-day Saints* (Salt Lake City: Deseret News Press, 1908), 4:537.

4. *Saints' Herald (Deloit, Iowa)*, 26 (1879):289.

5. William Smith, *William Smith on Mormonism* (Lamoni, Iowa, 1883), pp. 11-12.

6. William Smith, "Sermon in the Saints' Chapel," *Saints' Herald (Deloit, Iowa)*, 31 (1884): 643-644.

7. Joseph Smith, *op. cit.*, 1:57-58.

8. Henry Carswell, *City of Mormons: Three Days at Nauvoo* (1842).

9. Joel Tiffany, *Tiffany's Monthly*, 5 (Jan. 1859):165.

10. *Kansas City Daily Journal*, 5 June 1881; *Chicago Times*, 7 August 1875; *Chicago Tribune*, 17 December 1885.

11. *Ibid.*

12. *Kansas City Daily Journal*, 5 June 1881.

13. Dr. Murdock, *Origin of the Mormons* (1841).

14. *Ibid.*

15. Joel Tiffany, *op. cit.*

16. *Chicago Times*, 17 October 1881.

17. *Deseret News*, 21 August 1878.

18. Interview of William Smith with E.C. Briggs and J.W. Peterson, *Zion's Ensign* (Jan. 13, 1894):6.
19. Joel Tiffany, *op. cit.; Daily Iowa State Register*, 18 August 1870.
20. Joseph Smith, *op. cit.*, 3:307-8.
21. William F. Roeser and John Cochrane in *Metals Handbook,* Taylor Lyman, Ed., 8the ed. (Menlo Park, Ohio, American society of Metals: 1961), 1:1185-6.
22. Royce D. Loveland, private communication, 1969.
23. Read H. Putnam, "Were the Plates of Mormon of Tumbaga?" *Papers, Fifteenth Annual symposium on the Archaeology of the Scriptures*, B.Y.U. Continuing Education, 1961.
24. These particular metals were chosen only because they were readily available in the author's laboratory.
25. William Smith, "Sermon", *op. cit.*
26. For the metal to be pure gold, we need to assume that 1) William smith's statement represents an incorrect personal conjecture and 2) Nephi's ore refers to the mineral environment in which gold is always found but to which it is never chemically combined. Neither assumption is satisfying.
27. Read H. Putnam, *op. cit.*
28. Samuel Kirkland Lothrop, "Metals from the Cenote of Sacrifice, Chichen Itza, Yucatan," *Memoirs of the Peabody Museum of Archaeology and Ethnology, Harvard University,* vol. 110, 1952; *idem,* "Cocle, an Archeological Study of Central Panama," *loc. cit.*, vol. 7, 1937.
29. *Ibid.*, 10:94.
30. *Ibid.*, 10:94, 99, and 104; 7:79, and 308-309.
31. *Ibid.*, 10:29.
32. Read H. Putnam, *op. cit.*; Heather Lechtman, "Pre-Columbian Surface Metallurgy," *Scientific American* (June 1984), 20:56-63.
33. George H. Sistare, Jr. in *Metals Handbook, op. cit.*, 1:1186.
34. The density of an alloy was taken as the weighted average of its components' densities.
35. This represents an average empty space. The loose plates in the unsealed portion would have more space between them than the compressed ones in the sealed part.
36. *Chicago Tribune*, 17 October 1881; *Rochester Union and Advertiser*, 21 July 1884.
37. Microfilm cat. no. BX #3, Brigham Young University Library.
38. In fact, carefully measured samples showed the Hebrew to be even shorter; I Nephi 1 was only 42% as long, and Jacob 1, 44%.
39. Joseph Smith, *op. cit.*, 1:20-21.
40. Robert J. Matthews, "The New Publication of the Standard Works - 1979, 1981," *Brigham Young University Studies* 22 (Winter, 1982):396.
41. Joseph Smith and Martin Harris stopped translating on 14 June 1828. Emma Smith gave birth to a baby boy the very next day. It could have been, therefore, that the onset of Emma's labor rather than the completion of the Book of Lehi caused them to stop at page 116.
42. E. S. Hedges, *Tin in Social and Economic History* (New York: St. Martins, 1964), p. 164.
43. S. S. DeVoe, "The Perry Tin Shop of Saxtons River, Vermont," *Vermont History* 43 (1975):204-207.
44. C. L. Mantell, *Tin, Its Mining, Production, Technology, and Applications* (New York: Chemical Catalog Co., 1929), p. 242; S. C. Hoyt, Ed., *Metal Data* (New York: Reinhold, 1952).
45. Ronald Reed, *Specimens of Parchment* (Los Angeles: Dawsons' Book Shop, 1976).

$pring Wheat Responds to Phosphorus In Low Input Sustainable Agriculture

by John D. Walker and Greg Blaser
Crop and Soil Science Department

During periods of low wheat prices southeastern Idaho farmers often dramatically decrease or totally discontinue the use of fertilizer in small grain crops. Farmers often feel that the use of fertilizer results in a net decrease in their total profits when wheat commodity prices are less than $3.00 per bushel at area grain elevators.

If any fertilizer formulation is used during poor economic times it is primarily some form of nitrogen. This opinion prevails due to the high soil test values for both phosphorus and potassium in southeastern Idaho soils. These native high levels came about during the geological formation and deposition of these soils millions of years of ago. However, in most cases, by their very nature these soils are very high in elemental calcium. This calcium tends to tie-up or immobilize phosphorus and other elements needed for profitable crop growth.

It is generally considered by farm consultants and soil fertility experts that a soil test reading of 15 ppm of phosphate (using the sodium bicarbonate method) provides more than adequate phosphate levels for top wheat yields. Other crops such a potatoes require higher phosphorus levels than small grains to reach their maximum economic yields. It is for this reason that very little, if any, phosphorus is used by farmers when planting either wheat or barley. The one exception is the usage of small amounts of phosphorus as a starter fertilizer at the time of planting.

For the past two years researchers at the Ricks College Hillview Farm have studied the value of increased phosphorus application to wheat grown under an irrigated low input sustainable agricultural system. This L.I.S.A. crop management system shows significant benefits from increased phosphorus application above the 15 ppm phosphate level, which is already present in the soil.

The increased spring-planted wheat yield from additional phosphorus application occurs due to one or more of the following factors: 1) enhanced spring frost protection, especially during the time period when yield potential is being established by the plant; 2) more extensive root systems which make better use of available water and soil nutrients; 3) additive wheat crop competition especially with wild oats; and 4) significant extension of the useful life of herbicides for needed weed suppression without additional chemical applications.

In these phosphate studies the experimental area was first treated with 20 units of sulfur the fall before the experiment was begun to eliminate "hot spots" from previous crops grown on the site. Large plots (30 by 100 feet), replicated three times and randomized, were established so that standard farm size field equipment could be used. Three rates of phosphorus alone, and identical phosphorus rates in combination with three rates of nitrogen (plus check plots), were investigated for the purpose of determining the optimum L.I.S.A. fertility program in eastern Idaho spring wheat.

Reading Study Fall 1989

by Karl L. Edwards
Learning Ass't. Department

No one questions the value of skillful reading. Yet, much of what we do as faculty assumes a certain level of competency on the part of our students. This assumption was addressed in a study of reading competency this fall at Ricks College.

Sample:

The 92 students in the study were randomly chosen from Book of Mormon classes. The sample consisted of 39 men and 53 women, or 42% and 58% respectively. Eighty-five percent were from west of the Mississippi River, 9% were from east of the Mississippi, 5% were from Canada, and 1% was from a foreign country.

All students were tested with the Woodcock Reading Mastery Tests and approximately two-thirds had an additional evaluation measuring eye movement and fixations. In addition, age, ACT, GPA, and credit information was gathered and correlated with the results of the reading tests.

Tests:

The Woodcock Reading Mastery Tests produces separate measures of a student's ability to recognize words, to decode unfamiliar words, to know word meanings, and to comprehend passages. Results are reported in reading grade levels designated in 10ths of grades. Because this test was designed to detect reading problems, it measures no higher than grade 12.9, and to the extent that many of our students read above that level, the mean reading level reported in this study is not accurate. It is, however, an accurate measure of students who have reading deficiencies, and gives us good comparative information with a 1975 study done using the same instrument.

Results:

The results show that the mean reading grade level for Ricks College students is 11.7. While 25% of our students read below 11.7, only 11% demonstrated serious reading deficiencies.

This information is particularly interesting when compared with the 1975 study. In that study, the average reading grade level was 10.1 and 31% had serious reading deficiencies.

The table ont he next page gives a breakdown of reading ability by class, age, and sex.

1989 STUDY

	MEN			WOMEN			TOTALS		
Characteristics	Number	Average Reading Level	Percent Reading G.9.0	Number	Average Reading Level	Percent Reading G.9.0	Number	Average Reading Level	Percent Reading G.9.0
CLASS:									
Freshmen	28	11.8	14%	37	11.3	16%	65	11.5	15%
Sophomores	11	12.2	9%	16	12.2	6%	27	12.2	7%
AGE:									
18	18	11.9	11%	26	11.1	15%	44	11.4	14%
19	3	10.9	33%	20	11.9	10%	23	11.7	13%
20	0			4	12.8	0%	4	12.8	0%
21	8	12.0	1%	1	11.3	0%	9	11.9	10%
22	4	12.9	0%				4	12.9	0%
Over 21	10	12.2	10%	2	11.8	0%	12	12.1	10%
TOTAL:	39	11.9	5%	53	11.6	7%	92	11.7	11%

1975 STUDY

	MEN			WOMEN			TOTALS		
Characteristics	Number	Average Reading Level	Percent Reading G.9.0	Number	Average Reading Level	Percent Reading G.9.0	Number	Average Reading Level	Percent Reading G.9.0
CLASS:									
Freshmen	23	10.5	26%	61	10.2	31%	84	10.3	30%
Sophomores	7	9.0	29%	9	9.4	44%	16	9.2	38%
AGE:									
18	15	10.7	20%	52	10.1	33%	67	10.2	30%
19	3	10.7	33%	12	10.1	33%	15	10.2	33%
20	0			4	10.7	25%	4	10.7	25%
21	5	10.2	20%	2	8.6	50%	7	9.7	29%
22	3	7.6	33%	0			3	7.6	33%
Over 21	7	8.6	57%	0			7	8.6	57%
TOTAL:	30	10.2	27%	70	10.1	33%	100	10.1	31%

In addition to the differences of reading grade level (10.1 in 1975 and 11.7 in 1989), there is also a significantly smaller percentage of students with reading problems in 1989 (31% in 1975 and 11% in 1989).

ADDITIONAL RESULTS:

Correlations comparing reading skills and ACT information (using the enhanced ACT scores) shows that the composite ACT score has a .62 correlation with the total reading score, a .59 correlation with the passage comprehension score, and a .61 correlation with the word comprehension score. Other correlations were significant, but for prediction purposes, the composite ACT score was highest.

When looking at only students with reading difficulties, reading rate correlated with word recognition and word attack at .79 and .91 respectively. This indicates that the skill areas that slow readers need the most attention in are word recognition and word attack.

ADDITIONAL STUDY:

Using 11th grade reading material, the study also measured the average reading rate, the degree of comprehension, and the span of fixation and the time of fixation for each eye. The following table shows those results.

Reading Characteristic	Mean	Mode	Minimum	Maximum
Reading Rate (W/min)	236	240-270	115	643
Comprehension (%)	83	90	60	100
Left Eye Span (words)	1.12	1.15	.69	2.0
Right Eye Span (words)	1.14	1.15	.57	2.0
Left Eye Speed (per fix)	.29	.28	.19	.59
Right Eye Speed (per fix)	.30	.28	.17	.50

Reading Rate and Comprehension:

Research indicates that the national average college student reads 300 words per minute, and it suggests that students reading below 200 words per minute are not concentrating well enough to comprehend. Our research tends not to support this observation. We found no significant difference in comprehension between students with slower reading rates and students who read faster. There is, however, a significant correlation between reading speed and reading problems, that is, slower readers have more reading problems and particularly weaker word attack skills.

Fixations:

The eye and mind work together only when the eye stops moving and fixates on something. The Reading Lab now has the ability to measure how many fixations the eyes are making per second and how wide the fixations are. The technology also

determines to what extent the eyes are working in concert or whether one eye is doing all the work.

As can be seen from the table above, the average span is about 1.15 words and the number of fixations per seconds is between 3 and 4. This approximates national averages; the average person sees about 1.1 words per fixation and fixates about 4 times per second.

SUMMARY & IMPLICATIONS:

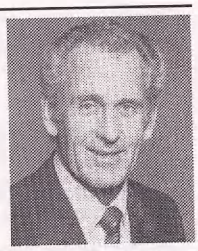
Students at Ricks College in 1989 are reading significantly better than those of 1975. This indicates either that we are drawing a better prepared student, or that the average student receives better preparation before coming to college, or both. Anecdotal information from those who have been at Ricks during both periods tends to favor the interpretation that we are drawing a better prepared student.

While we may feel good with this interpretation of whom we have as students, there remain numbers of students on campus who lack adequate reading skills for college work.

A significant portion of our students who need help, do not find it, and have a poor experience at Ricks. This study indicates that about 800 students need remedial reading help. The Reading Lab currently sees about 400 of these students during the year.

Our challenge is not to just become more sophisticated in the materials we present because we have better students, but also to take the time to identify and direct the weaker students to where they can get the attention they need. This is not easy considering that this student is often defensive, and resists being identified.

HENRY VAUGHAN



by Norman J. Gage
English Department

Henry Vaughan was born either in 1621 or 1622, the elder of twins, at Newton St. Bridget, Brecknockshire. His father, Thomas Vaughan Sr. was of an ancient Welsh family, and as such was a strong Royalist. His mother was Denise Morgan; her family was regionally influential with a number of relatives in responsible church and local government positions. Henry had three brothers and one sister. His twin, Thomas Jr., became a dedicated Hermatic philosopher after he was removed from his church office. Henry studied this same philosophy, which was the forerunner of modern chemistry, and was influenced somewhat by its precepts, both as a poet and as a physician.

Henry is, of course, best known to modern audiences as a metaphysical poet whose work ranges from his early profane poems to his later sacred poems. His early poems from Olor Iscanus, for example, treat rather frivolous subjects as would fit a young law student in 17th century England, including references to drinking and general carousing in that student environment. However, the subjects and tone of Henry's poetry had undergone an abrupt change by the time he published the first volume of his famous Silex Scintillans in 1650. And while critics have isolated some of the causes for this spiritual reversal in Henry's life, most readily admit that there is not clear biographical motivation to fully account for this magnificant change in his life.

The purpose of my research was to identify certain events in Vaughan's life that occurred between 1647 and 1650 that might have influenced this mighty change; which change, by the way, was both dramatic and permanent.

Perhaps one influence affecting the change can be found in Vaughan's pride in his family name. That he was proud of his ancestry is sure, as he adopted the title of "Silurist" to indicate his ancient and influential Welsh genealogy. Part of his religious emphasis might have been a reaction to his father's questionable honesty. Henry Vaughan Sr. spent a lot of time in court, and it appears that he was not often without fault in his numerous litigations. Henry's impeccable honesty starkly contrasts with his father's jaded honesty. This, however, is a minor influence towards Henry's conversion.

There were other things which seemingly had deeper affects on Henry. Perhaps the broken fortunes of Church and State provided greater cause for Henry's change than his family did. Certainly, Henry was heart-broken over contemporary civil and church developments. Henry, as well as his family, was deeply committed to the Royalist cause. The more he saw the rise of Puritanism and the growing popularity of Cromwell, the more Henry felt the order of his world crumbling. He might have felt that a faith and devotion to Christ was the only stable thing left in his life. (White p. 251) Certainly Vaughan had always been a Bible student, but there seems to have been greater contemplation of the scriptures during this time of his life than at any previous time. All of this might have, and almost surely did, influence his conversion.

Along with this, Vaughan was likely both a soldier (White p. 243) and a prisoner (White p. 247) in the wars that culminated in the Royalist catastrophe in 1647. During this time in his life he saw men killed in battle, and while he likely did not witness the deaths of R. W. who fell at Rowton Heath in 1645 or R. Hall, killed at Pontefract in 1648 (White p. 250 also Hutchinson p. 104), still the loss of these close friends had a sobering affect on him which likely influenced the spiritual change in his life.

When the deaths of these two dear friends are considered with the death of his younger brother, William, in July of 1648, one can easily see adequate motivation to project one so sensitive as Vaughan, into not only more serious study of the Bible, but also into the process of spiritual conversion that he so obviously experienced. (Rettet p. 14-18) Certainly the death of this much loved brother profoundly influenced Vaughan as is evidenced in such poems as "Joy of my Life," "Silence, and Stealth of Dayes," and "They Are All Gone Into The World of Light."

A final strong influence in Vaughan's life is worthy of mention. That is the works of George Herbert. Vaughan admits his debt to Herbert, and we see ideas, words, and phrases directly borrowed from "The Temple" in Vaughan's poems. But while the debt is great, it hardly accounts, in full, for the conversion in question. Herbert leavened Vaughan's work, but Vaughan's is a separate and unique voice, singing in its own richness the beauties of redemption through Jesus Christ. (White p. 245-247, Hutchinson p. 102-103, and Doughty p. 2-4)

All of these influences combined to bring about that great change of heart that critics call Vaughan's conversion. But even in combination, I do not believe they fully account for all that happened spiritually in Vaughan's life between 1647 and 1650. There is another dimension to Vaughan's spiritual development that is more spiritual, more personal, than that which could have come through external influences in his life. It could not have come through existing social, civil, or religious structures. Vaughan was Anglican, and he seems to subscribe to Anglican

My God and King! to thee
I bow my knee,
I bow my troubled soul, and greet
With my foul heart thy holy feet.
Cast it, or tread it! I shall do
Even what thou wilt, and Praise thee too.

My God, could I weep blood,
Gladly I would;
Or if thou wilt give me that art
Which through the eyes pours out the heart,
I will exhaust in all, and make
my self all tears, a weeping lake.
O! `tis an easie thing
to write and sing;
But to write true unfeigned verse
Is very hard! O God, disperse
These weights, and give my spirit leave
To act as well as to conceive!
O my God, hear my Cry;
or let me dye!--

In this poem we see the heart harrowed up with a consciousness of its own guilt. Again we have the tears: weeping to God, pleading to God for forgiveness, and for acceptance, and for sanctification. The images of tears and blood are, of course, Christ images of suffering and redemption; Vaughan expresses a willingness to suffer as Christ suffered if only he might be found acceptable to God. The final couplet suggests the extent of Vaughan's suffering and of his need.

As he prayed, wept, and suffered, even so was he answered and comforted; he made his heart, broken in repentance, a sacrifice to God and begged Him to accept his offering:

My God, thou that dids't dye for me,
These thy death fruits I offer thee.
Death that to me was life, and light
But darke, and deep pangs to thy sight.
Some drops of thy all-quickening blood
Fell on my heart, these made it bud
And put forth thus, though, lord, before
The ground was curs'd, and void of store.
Indeed, I had some here to hire
Which long resisted thy desire.
That ston'd thy servants, and did move
To have thee murther'd for thy love,
But, Lord, I have expell'd them, and so bent
Begge thou woulds't take thy Tenants Rent. (7 p. 138)

Vaughan realizes that the life and light provided for him through his repentance came only through the deep pains of Christ's suffering. But the blood of Christ found a place in Vaughan's heart, which before was hard, stony, and resistant to Christ's influence, and caused it to bud, blossom, and bear fruit. He has, at this point in his life "expell'd" his sins, and has offered himself as a tenant of Christ's grace.

The image of his budding through the touch of Christ's blood (sanctification) is furthered in "Disorder and Frailty" (7 p. 203).

I threaten heaven, and from my Cell
Of Clay, and frailty break, and bud
Touch'd by thy fire, and breath; Thy blood
Too, is my Dew, and springing well.

This poem includes many of Vaughan's best loved symbols. The "Cell of Clay" is mortality or more specifically, acting as a mortal or in a worldly way. He has broken the bondage of worldliness and "touch'd by the fire, and breath" he has been purified by the Spirit of God, the refiner's fire, and having received the spiritual breath of life, Vaughan is purified (Dew) and washed clean (springing well) and sanctified.

Through his spiritual cleansing, Vaughan gains some fascinating insights into spiritual things. He suggests several things which are not part of his Anglican canon. In his poem, "Death" we read a dialogue between the body and the soul. The soul says to the body:

. . . But thou
Shalt in thy mother's bosom sleepe
Whilst I each minute grone do know
How neeere Redemption creepes.

Then shall wee meet mixe again, and met`
Tis last good-night, our sunne shall never set. (7 p. 142)

This body will lie couched in the bosom of mother earth while the spirit will continue its progress to redemption. When redemption comes, the body and spirit will "meet to mixe again," to be reunited, and once reunited, there will be no more "good-nights" to the sleeping body. The sun will never set; there will be no more periods of night for spirit or body, but only an eternal day. The body will be literally resurrected, never to die again. Vaughan leaves little doubt that he subscribes to this doctrine of literal resurrection of both the body and the spirit, though his church does not. In "Resurrection and Immortality" (7 p. 145), he again states the same belief. The body laments that his covenant is with the dust, but the spirit chides the body, asking him if that is all he has taught the body.

For no thing can to nothing fall, but still
Incorporate by skill,
And then returns, and from the wombs of things
Such treasure brings
As Phenix-like renew'th
Both life, and youth;
. . . . . .
His passive cottage; which (though laid aside,)
Like some spruce Bride,
Shall one day rise, and cloath'd with shining light
All pure, and bright
Re-marry to the soule, for `tis most plaine
Though only fal'st to be refined againe.
. . . . . .
So shalt though then with me
(Both wing'd, and free,)
Rove in that mighty, and eternal light
Where no rude shade, or night
Shall dare approach us.

There are other insights that Vaughan received after his search, struggle, and sanctification. One of the most sensational is his view of the universe, expressed in relative Hermatic terms, in his poem "The World" (7 p. 231).

I saw Eternity the other night
Like a great Ring of pure and endless light,
All calm, as it was bright,
And round beneath it, Time in hours, days, years
Driv'n by the spheres
Like a vast shadow mov'd, In which the world
And all her train were hurl'd;

Eternity is pure and endless light, calm and bright. Below eternity (God's realm) is a timed environment into which the earth and its attendants, the moon and stars, is "hurl'd" or thrown. The obvious implications are that the earth and her "train" were moved from one environment (celestial) into its present state of mortality. This is an interesting and unique religious concept which has no relationship to Anglican doctrine.

These and other concepts, startling in their nature, have usually been interpreted as variations of the Hermatic Philosophy that Thomas Vaughan Jr. championed. I feel, however, that Vaughan borrowed less from the Hermitists than he was motivated and inspired by them. His words are simple and direct, "I saw eternity last night." That does not sound like a borrowing from anything.

Certainly, there were many influences in Vaughan's life that combined to produce the vigorous voice of light that we know in him. But the greatest influence was one that was invited into his life through his personal search and struggle of spirit that allowed that intricate interplay between man and God which gave issue to the inspiration and insight that, through Vaughan's humble and direct voice, we share. Pride in family, broken fortunes of church and state, war experiences, loss of friends and family members, influence of his mentor, George Herbert, impact of the Hermitists, surely all of these things helped mend and mold Henry Vaughan; but the more full, final leavening of his soul and voice was his acceptance of the Spirit of Christ. From this heavenly confluence, Vaughan "evokes a strange otherworldiness" that leaves him looking for a union with his God.

He is thy gracious friend,
And (O my soul awake!)
Did in pure love descend
To die here for thy sake,
If thou canst get but thither,
There growes the flowre of peace,
The Rose that cannot wither,
Thy fortresse, and thy ease:
Leave then thy foolish ranges;
For none, can thee secure,
But one, who never changes,
Thy God, thy life, thy cure. (7 p. 184)

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Two Tests in Hemingways's The Short Happy Life of Francis Macomber

by Phillip M. Harmon
English Department

In the common reading of Hemingway's short story about a man who first quails and then recovers his manhood, we generally focus on the protagonist, who, not unlike most of the rest of us, is hag-ridden by self doubt. Because he questions his own courage and is unsure how he would react when faced by a life-threatening crisis, he contrives a test for himself. Taking his wife and his check book he departs for Central Africa where he hires a guide, provides himself with the necessary kit and treks into the wilds looking to uncover and confront the very dangers that will answer his questions about himself.

He, of course, encounters just what he had hoped for and in his first test fails miserably, to his extreme embarrassment and consternation and that of his wife, who actually hadn't expected much of him in the first place. Not willing to admit to himself that he is really a coward, Macomber seeks and finds a second opportunity and this time acquits himself like the man he wishes to prove himself to be.

Thus far we have said nothing about this popular short story that has not already been said numerous times. The secondary plot of the story, however, has been less thoroughly discussed. It concerns Macomber's wife Margot who is disgusted with her husband's initial performance, takes her love elsewhere and finally shoots him to cover up, either consciously or unconsciously, her guilt and what must be the realization of her hastily committed error. Margot's story, you see, has been too easily passed over. For Margot, by any standard is also undergoing a test--in her case a much more crucial test or that of a more fundamental virtue than physical courage--and Margot fails her test far more miserably than Francis fails his. Because the conditions of the test cannot be duplicated, as they can in her husband's case, Margot has no opportunity for a second try.

When Margot married Francis, for whatever reason and whatever her expectations, she tied herself to an imperfect man. She had certainly known to some extent his character and his weaknesses as well as the strengths of his character and the personal qualities he undoubtedly possessed, and on this basis she made her choice and plighted her trough. Had she married any other man she would have had to accept limitations too, different ones perhaps, but probably just as many of them. Whether she had married her high school football captain, or Sir Galahad, or even a hero like the white hunter Robert Wilson, she would have had to accept the simple truth that there are no perfect men, and one marries for better or for worse because there is nothing else we can do in this imperfect world. We know little of what Francis Macomber is, but we can assume that he possesses one or more qualities which motivated Margot to choose

him. Apparently courage of the "stand-up-to-a-lion" sort was not what she had chosen a husband for. Margot says as much herself, "What importance is there to whether Francis is any good at killing lions?" She asks, "That's not his trade." She probably had no idea really whether he was that kind of a man or not, never having had the opportunity to see him face such a situation. It really didn't matter to her then, and it shouldn't now.

The point is that this test is Francis' Gethsemane, his personal confrontation with himself. Margot has just come along for the ride. If he fails his self-examination, he will know more about his limitations than he did before, but he will be no less than he was. Not one of the qualities for which Margot married him will have been removed. He will take her home no more nor less than he was when he brought her out to Africa.

If Francis Macomber emerges victorious from his greatest challenge, unfortunately, the same cannot be said for his wife. Margot, when she witnesses Francis' poor showing with the lion, has got to make then and there a rather vital decision, and she has to make it almost immediately. The question facing her now is how she is going to react to his failure. Wilson puts the vital question when he asks, "How should a woman act when she discovers her husband is a bloody coward?"

Marriage is a very special and unusual kind of relationship. When "the twain become one flesh" they literally contract to "share one another's burdens". When a man or woman succeeds or triumphs, one's partner shares in the joy of the moment as I remember doing a few years ago when I watched my wife receive a Woman of the Year award. I couldn't have been prouder, and I had both the right and the responsibility to feel that way. She is "bone of my bone and flesh of my flesh," and her victory is, to some extent, my victory. But by the same token when she fails--and we all fail--she has a perfect right to expect to be able to turn to my strength to augment hers in her hour of consternation and embarrassment. That's the way it is with a marriage. When the world turns its back on you and you see yourself as a complete failure, unworthy of anyone's trust, then there is that one shoulder that is always there, like a rock, to weep on and from which you draw renewed strength to press forward.

Margot almost offers her husband that kind of support and vicarious strength on the morning before they go out after the lion. She is being a bit sarcastic, of course, but he can probably overlook the cynical edge in her voice when she assures him, "You'll kill him marvelously. . . I know you will." But it is when he falters that she evinces that real weakness which reveals her as the complete failure she is. When Macomber returns to the car after running from the charging lion he reaches out instinctively for her hand, searching for the courage and the reassurance a man has a right to expect from his companion. But she removes her hand from his and thus communicates unmistakably that she will not be his source of strength. Instead, she leans forward and kisses Wilson, thus sending the clear message that when she is most needed she is a deserter and a traitor.

One cannot help but feel keenly the disappointment that must be macomber's when the one bastion of strength to which he has the right to retreat has been so rudely denied him. "Macomber did not know how Wilson felt about things either. He did not know how his wife felt except that she was through with him." When we consider the provocation that precipitates this desertion, we cannot help but be disappointed that at this--after all, so slight--one faltering step she turns tail and runs.

We hesitate to attempt to characterize Margot's altered feelings for Francis after he has successfully refuted her first rush to judgment. Following the running attack on the buffalo, she cannot help but see before her a changed man, and she must certainly wonder whether her first conclusions might not have been hasty and her defection ill-advised. We never really know. Events come so rapidly to a conclusion and her emotional outburst after she kills her husband is so obviously spontaneous and confused that we must resign all hope of analysis. It really doesn't matter. The friend who deserts you when he learns you have been left out of your rich uncle's will and then comes crawling back when you win the lottery is still no friend. Margot has shown her true colors and must be forever beneath our contempt.

POLYGAMY, POLITICS, POVERTY, AND THE BIRTH OF RICKS COLLEGE

by Lawrence Coates
History Department

The Mormons planted their first town of Franklin, Idaho in 1860 and then nurtured many other villages in southeastern Idaho. Soon, non-Mormons became afraid of Mormon political power, since the Saints selected Bishops as civil officers, banded together in tight social groups, proclaimed their church as the only true one, and condemned their critics. During the 1870's and 1880's, non-Mormons were rather evenly divided between Democrats and Republicans and resented the Mormons exercising the balance of power. So in 1880, Frederick Thomas Dubois and other Republicans launched a campaign to disqualify Mormon voters, using the anti-polygamy legislation as a weapon, knowing the Saints would defend their unusual marriage pattern at all costs. Although U. S. Marshall Dubois had few objections to polygamy, he simply fought to curb Mormon political power.

Intense anti-Mormon pressure became the catalyst for founding nearly forty church academies. Thomas Edwin Ricks, while fighting against extreme odds, provided outstanding leadership in establishing the Bannock Stake Academy in the upper Snake River Valley. And after fourteen years, the First Presidency requested the school be renamed Ricks Academy, honoring the recently deceased founder of Rexburg.

Before the birth of Rexburg, only five Mormons were convicted for practicing plural marriages. But then the numbers increased dramatically with forty-five in 1885, one hundred and nine in 1886, one hundred eighty in 1887, and eighty-four in 1888. Many others were prosecuted but not convicted, and among them was Thomas E. Ricks, who fled to England on a mission in May 1885, returned home two years later, and then went to Canada for a short time. In April 1888,he was caught in Logan, tried, and released when it was discovered none of his five wives lived in Utah except Ruth Dille, who testified she had divorced him and had not associated with him for six years. Ricks returned to Idaho, was arrested again, but not convicted due to lack of evidence.

Pressure from enforcing the Edmunds-Tucker Act moved President Wilford Woodruff to write thirty-three Stake Presidents on 14 June 1888 and urged them to form parochial schools. Otherwise, he said, our children "will grow up entirely ignorant of those principles of Salvation." It would "be criminal" not to "have schools where the Bible, the Book of Mormon and the Doctrine and Covenants can be used as textbooks; and where the principles of our religion. . .form a part. . .of the schools."

President Ricks formed the Bannock Stake Board of Education, even though most people had lived in the region less than five years, and led the way by persuading the Rexburg Saints "to dedicate the meeting house" and donate $186, forty pounds of wheat and two steers to remodel it." He went to Utah, ordered three dozen folding seats and desks for $40.00 per dozen, and asked President Woodruff for funds. Ricks also told Karl G. Maeser, administrator for church academies, that Jacob Spori would be a good principal. Maeser agreed and President Woodruff concurred.

Returning to Rexburg, Ricks pushed for the same school calendar as B. Y. Academy, asked tuition be set at $2.00, $3.00, or $4.00 depending on the grade, and urged adopting the same books as the public schools and approving the same regulations as Provo for watching the children "outside of school." Problems at the lumber mill postponed opening the academy until 12 November 1888, and within one week, eighty two students were enrolled. Six weeks later, the first term was history. The school reopened on 7 January and closed its first year on the last of April.

Anti-Mormon sentiment again surfaced, and Spori fled to Logan to escape being a witness in a case prosecuting Mormons "who had voted in Nov. 88." Undaunted, Ricks went to Logan, consulted Spori, and rehired Axel Nielson. These trials were overshadowed when Ricks's wife, Elizabeth Jane Shupe, passed away, leaving him with six dependent children on 1 July 1889. Despite his sadness, Ricks must have felt some satisfaction when he read the financial report on 25 August 1889, showing a surplus collected from $453.60 in tuition and $663.45 in donations, including $500.00 from tithing. Expenses included remodeling the meeting house, janitorial service and supplies, school utensils, wood, stationary, desks, and teachers salaries--partial pay to Jacob Spori, $183.60 to Axel Nielson, and $110 to Sarah Barnes.

Meanwhile, Ricks was pressured by U.S. Marshall Fred Dubois. Ricks was arrested, convicted on October 25, 1889, and sentenced to prison for having plural wives. This conviction over-shadowed his service to the Academy until sentence was set aside due to the manifesto on plural marriage. At the same time, Harvey Walker "Kentucky" Smith, an anti-Mormon, had the Rexburg Post Office renamed Kaintuck.

Despite these irritations, Ricks devoted many hours to a Stake of 4,000 members and to a school which began losing enrollment. In the spring of 1890, four students left the school, saying their father "could not afford to send them to town and pay board." Others enrolled in the "School of John Bramwell," which the Second Ward formed for those who worked on farms late in the season. The public school, however, posed the greatest threat--children were admitted free. Many Saints chafed at paying "exorbitant taxes," to people they believed were teaching "bitter Anti-Mormon" propaganda. But territorial law forced them to send their children to the public school or maintain an academy. Loyal patrons of the Academy labeled supporters of the public school as "careless saints."

Enrollment continued declining when the public school began offering free summer courses. Ricks met the challenge by hiring Sarah Barnes as teacher and Miss Luella Clegg, an intermediate student, to teach the first three readers. He then pushed for a primary school at Wilford and one at Menan. Ricks said we must not drive our children into the "free school of our enemies," or deprive them of an education. People want their children taught the Gospel and will "pay their debts in time." Education is not "a money scheme."

Principal Spori confessed the drop from ninety to forty-eight students left the school little more than a primary school. When the second year began in 1890, thirty-two fewer students enrolled than in 1888. Spori justified not reporting tuition loses, saying the students would have been injured had any teacher been dismissed to keep "the finances in balance" and after the winter, he thought the debts could be paid. But he said the people have taken little interest in the Academy. Even generous Saints fail to donate funds due to a devastating fire last summer and a very hard winter.

Spori continued in his heavy German accent, "People do perhaps not like (my) ways since the Academy is not better patronized. " So, he would be "willing. . .to step out. . .for a more suitable person." "Perhaps also his aims may not suit (some)," he declared, since he would not permit the gifted to exploit others. Learning ought not to be motivated by "flattery and coaxing no. . .tyranny and terror," he concluded, but "the conscience must be awakened. . .not by ambition, egotism, or fear but out of love for God." Teaching ten years in Europe, attending Logan college, and serving a four year foreign mission, Spori said, may not have been enough preparation for his "calling."

Ricks and Apostle Moses Thatcher urged Spori to remain as principal. But Spori said, having only forty-six children with three teachers and going deeper in debt shows bad financing, looks reckless, and "tends to undermine the reputation of our Academy." Spori concluded, we cannot dispose of Sister Barnes; it would only save $50.00 and someone would have to take her place. Nor can we release Brother Nielson--he graduated from Provo. It would seem disrespectful, if we released him. Spori said he would work on his farm, save the school $100, and still supervise the school "without any expense."

Maintaining a stable administration and faculty certainly was a major challenge. Spori resigned in 1891, and Charles Watkins served as principal until 1894, when George Cole became the administrator. Then, the demand for woman's rights surfaced in 1895 and Ricks hired Ada Turner to be "a lady superintendent. . .to instruct the Lady students privately once a week. . .against secret vices." Turner discovered pay inequities and threatened to leave unless she was paid the same as others. Ricks offered to pro rate her salary according to the amount paid to other teachers, providing she "teach to the end of the term." In 1899, shortages prompted faculty member C. Hyldahl to suggest the Board "dispense with his services." At the same time, Principal Cole offered to leave the classroom to "Miss Southworth," if the Board found him other employment. The Board agreed, providing he continue serving as principal for the remainder of the year. For the next academic year, the Board hired Douglas Todd.

In addition, Ricks fought to maintain a high level of interest in the Academy as the political pressures declined. Ricks discussed this concern with Maeser who said it was "obligatory" for the principal, a teacher, or a Board member to attend "the annual convention of all the church schools." He added, the Board must have four meetings a year and replace all lethargic members. "Every single member. . .is duty bound. . .to promote the church school, until it is so well established that it can stand on its own. . .Call missionaries, Board members, the principal, and the faculty to prompt the interests of Academy. Awaken interest in religion classes. Bishops who are neither warm nor cold. . .should be reported to the Stake President. No one should stand in the road of God's work. Ricks proposed eliminating indifferent Board members and the active ones all "should promise to give the Academy their support or resign." Some relinquished their membership on the board.

Maeser told Ricks to "hold a faculty meeting every week and have Board members attend." Send a committee to the Academy one day for every ten weeks and report their findings to the Board. Once a year have all board members visit the

principal, teachers, and students. Teach students to show affection by tipping their hats. Maeser said organize a "seminary" and "establish" religion classes in every ward to supplement the public schools. Report any Bishop, who fails "to start these classes and if any family fails to send their children, the Bishop should investigate."

The most persistent challenge, however, was matching income and expenses. The first crisis occurred in 1890, when enrollment dropped below fifty students. Ricks pushed to cut expenses. When Axel Nielson offered to return for $60 a month if the classroom was remodeled, Ricks agreed these were reasonable requests, but said we cannot afford three teachers. Instead, Ricks rehired Spori as the teacher, gave him some helpers, retained the same tuition fees, and curtailed the dances--one every two or three weeks. But this financial crunch was too great for Principal Spori; he resigned, saying he had to put his "house in order and be in debt to nobody."

The second crisis came during the depressions years from 1893 to 1897. The Board considered closing the school in 1893-94, but instead cut salaries thirty-three percent, "deducted" days absent from wages, and called "special missionaries" to raise funds. When these measures failed, the deficit doubled to $886.89, and the Board assessed Ricks and thirteen others to clear this debt. The next year Ricks again faced closing the school, but insisted "that every effort be made to carry out another term." The Board paid teachers "1/3 cash and 2/3 in produce," and Maeser asked the S. S. Union and the Y.M.M.I.A. for aid. Priesthood leaders called "twenty special Elders" to go from house to house collecting anything they could get, and Ricks instructed them "in the best methods to raise funds." During the eighth year, the Board asked the teachers to "labor for the same salaries as last year." Letters explaining the school's financial needs were sent to the President of the Church, the Sunday School Union, and the Y.M.M.I.A. Boards. Principal Cole visited all wards, while the teachers canvassed house to house in Rexburg and in outlying settlements. Rexburg 1st Ward agreed to "pay 1/3" of the expenses for running the Academy, while the 2nd Ward assumed "2/3 of the expenses" of maintaining the building.

These financial troubles forced the Academy to either borrow money or close the doors in 1897 when a $300 note came due that could not be paid; the Board paid the interest and extended the note. In January, Ricks asked the General Church Board for more money, but Maeser replied, none could be given "until after Jan. 1, '99." In desperation, the Board set the school year for thirty- two weeks, lowered the principal's salary to $520 and faculty wages to $100 for men and $30 for women per month, and rented the upper room of the Rexburg ZCMI Store. The Board also required tuition be paid in cash, abolished credits and rebates, and discounted tuition paid in produce ten percent.

Despite all these hardships--declining enrollment, growing deficit, increasing apathy--Ricks worked for a permanent building. He began in 1888. Three years later, the Board looked at sites in the upper valley, selected Rexburg, formed a committee to find land, decided to build with stone, and set the 1 January 1891 for dedication. But no permanent building was started during the first ten years.

Even though in March 1897, Maeser said twenty-six of the original forty academies had failed, Ricks still insisted on constructing a permanent building. Instead, the Board rented the ZCMI Store for classrooms. President Ricks raised the issue in May 1899, but the Board postponed any discussion until September due to large debts and concern over building a railroad to West Yellowstone. William F. Rigby, a member of the Board and a representative in the Idaho State Legislature, influenced the Oregon Short line to build the railroad. But it was necessary to raise funds for a right-of-way. The People's Railroad Committee formed and picked Ricks as chairman. Collecting funds for the railroad and the academy placed a strain on many communities.

In September, President Ricks again pressed for a building and the Board picked Thomas E. Bassett as "general manager." He immediately wrote a description of the land, secured a title, acquired water rights, and hired an architect. But in March, Bassett said his financial interests as manager conflicted with his ecclesiastical duties and position as secretary-treasure to the Board. Ricks insisted Bassett continue serving and be paid "5 percent" of the funds already collected, ten percent of all future funds, and twenty percent for collecting outstanding debts. The Board ratified this proposal. On 25 June 1900, George Q. Cannon from the First Presidency laid the corner stone for the building, containing the symbols mentioned in Wilford Woodruff's plea for an academy, "a Bible, book of Mormon, Doctrine & Covenants, Pearl of Great Price and Hymn book."

Construction and operation costs created a third crisis. So, Ricks asked the First Presidency for more money, since the people failed to make a "liberal donation." He also asked Presiding Bishop Preston for a loan from "Tithing wheat. . .to pay" the bills. Not enough funds were generated, so the Board had to postpone paying contractors. One contractor was promised $390.79 before December 31, but the Board could only pay $250. In another case, the Board borrowed $100 "from the school fund" to pay the Rexburg ZCMI Store. Finally, after sixteen month, Superintendent Bassett asked for $50 per month, but said he would take half this figure. The Board gave him $25 a month for his previous service and promised him $50 a month or $600 annually for construction plus $100 for secretarial service.

Early in 1901, Bassett said there were practically no funds and people "were constantly crowding him for their pay and not having any. . .(money) made his position very unpleasant." He asked permission to issue certificates numbered according to the sequence the work was completed, but the Board rejected the idea. He said, unless some arrangements were made to "satisfy the men," he wanted to be released as manager. So, the Board suspended construction, until funds could be collected to pay "back indebtedness" and raise Bassett's pay to $900 annually. Bishops canvassed their people for money, but fell $60 short of paying faculty in March. So, Ricks borrowed $56, and a Board member paid $4 tuition to pay the faculty.

Thomes E. Ricks met with the board for the last time on the 17 of May 1901, and construction of the building dominated the agenda. The Board wrote to the "Utah Mortgage and Loan Corporation," saying they were uncertain when construction would resume. And Ricks signed letters asking for a $2,000 assessment from each ward. Struggling with limited funds, the Board proposed buying the Rexburg ZCMI Store rather than making a temporary roof over the new building. Ricks did not live to see the building completed, but he left an impressive record of service to the Bannock Stake Board of Education. It was nearly perfect; he conducted ninety-five of the ninety-nine board meetings and eighteen executive sessions during his life time. He attended nearly thirty more board meetings than any other person.

The future of the Academy seemed uncertain at the passing of Thomas Ricks on 28 September 1901. Had the anti-polygamy politics of the late nineteenth century not driven Thomas E. Ricks into founding the Bannock Stake Academy, there would have been no Ricks College Centennial in 1989. Many Board members, students, faculty, bishops, principals, janitors, and saints throughout the upper Snake River Valley

donated their meager resources, hearts, and devotion in keeping the Academy alive during these early troubled years, when so many other Church Academies failed. During the first thirteen years, however, Thomas Ricks stood above the crowd in rendering service to the Academy with his contribution in money, time, energy, and leadership. Despite being hounded by marshals, he encouraged many people to give to this worthy cause, borrowed large sums of money, organized men to solicit funds, held board and executive meetings, and wrestled many problems: enormous debt, faculty turnover, inadequate physical facilities, insufficient educational resources, apathy, and competition from free public education. Men and women today can look with pride on the name, Ricks, for it represents sacrifice, devotion, and persistence for educational excellence--the qualities of Thomas Edwin Ricks.

Models of Behavior: Applications and Implications

by Gordon Timothy
Psychology Department

Throughout history, models have been a major part of thinking and of studies in most fields of research and thought (Rubinstein, 1975, Naisbitt, 1982). Ranging from the theoretical to the practical, models have been used in education, social sciences, natural sciences, industrial sciences, arts, and literature, as well as in everyday thinking and conversing.

Models are comparisons made to make phenomena understandable. A model exists by the making of comparisons as description, explanation, and prediction: one thing is like another thing. The known represents the unknown. The simple represents the complex. And the comparison can go both ways. One can ask "How is A like B?" and conversely, "How is B like A?"

A model guides thinking, teaching, and learning. It controls questions asked, patterns of idea organization, kinds of evidence that are acceptable, and systems of values used. The model used predisposes one to use some ways of thinking and ignore other possibilities(Rubinstein, 1975).

There is more order than randomness in the way models have been used (Rubinstein, 1975). An orderly and predictable pattern of similarities between different fields and disciplines is clear at a given time in history. That order may be useful to describe and explain change and development, and to identify ways to make teaching and learning processes more effective, including curriculum and design decisions both in individual courses, and in general education decisions.

In Megatrends, Naisbitt (1982) described world ages based on the percentage of the work force engaged in a particular kind of work, progressing from the Stone Age, to the Agricultural Age, to the Industrial Age, to the present Information Age. His pattern is useful and can be further developed as in Figure 1 below.

In each age, while different models are used by different people, the use of one kind of model is more typical than others. The models in vogue at a given time change with technology used, and with the number of people using that technology. Thus, the model used by many people can clarify kinds of learning, and how it has progressed through time.

Figure 1.

Ages, Models and In-vogue Thinking

Stone Age: ----------		---------->
Rocks, Containers	Metaphysics:	Definition/Control
	Epistemology:	Opinion/Logic
	Ethics/Aesthetics:	Punishment/Reward
Agricultural Age: ----------		---------->
Plants, Animals (cultivated)	Metaphysics:	Classes/Stages
	Epistemology:	Consensus/Authority
	Ethics/Aesthetics:	Conformity/Law
Industrial Age: ----------		---------->
Machines	Metaphysics:	Analysis/Synthesis
	Epistemology:	Practicality
	Ethics/Aesthetics:	Principle
Information Age: --------		-------->
Computers	Metaphysics:	Extension/Inference
	Epistemology:	Contexts
	Ethics/Aesthetics:	Causes
		Next:---->
Gods? Cultures? Worlds?	Knowing Good and Evil Back to the Future? Retreat or a Repeat? Regression, or Progression?	

Stone Age

There is no history of the Stone Age. Typical speculation, supported by archeological data, the observation of children, and the analysis of presumably stone age people are that sun, moon, clouds, rocks, animate beings, man-made weapons and containers were probable models used to understand things including the self.

If people are like rocks and containers,thinking, teaching and learning will be guided by questions which stress identity/definition, i.e. name, location, bounds, limits, roles; rules followed; and cause/effect, i.e. controls and forces, including sources and techniques, (with emphasis on the external world).

The evidence acceptable for believing an idea in the stone age thought is basically personal experience, definition and opinion, with allowance for proof by logic and values. Since life depends on what one believes, the show-me attitude is crucial to survival.

Importance, goodness and beauty of a thing is based on its contribution to survival and on selfishness. Right and wrong is based on personal preference, fear, and force. Beauty is in the eye of the beholder. Control is strengthened and weakened by punishments and rewards. Morality is based on force: "might makes right."

Stone Age Education:

When these stone age models are applied to education, the student becomes a container to be filled, or a rock to be moved. Control is external, so the student is passive. The teacher is the controller of behavior and the environment, to decide what is to be, and to fill the student with facts. Materials are aids to memory, getting it "in there". Processes used are lecture, recitation, drill, and testing.

There is survival value in this type of education in a tentative and uncivilized world. For the beginning student, there should be an authoritative teacher who can tell one how things work and what is important, and how one can tell what is true, and how to make sense of things.

But there are also drawbacks. Note the old teacher's poem:

"Ram it in. Cram it in. Student's heads are hollow.
Shove it in, push it in. There's plenty more to follow."
--Anon.

Should students be passive? Should teachers be the only source of power? Time and experience have shown this approach to be more effective at some ages and in some cultures more than others.

Agricultural Age

The Agricultural Age came into being as survival dictated the need for cooperation, for civilization, culture, group protec-

tion, cultivation of plants, domestication of animals, and the building of permanent residences. Stone Age models were modified as new dimensions were added, using new technology. Comparisons were made with cultivated soil and plants, domesticated animals, tools and processes of cultivation, growth, building, etc.

If people are like plants or animals being domesticated, questions asked reflect needed concerns: Differentiation/classification, i.e. kinds, parts, attributes, similarities, rules differences, comparison, contrast, etc.; development and growth, i.e. stages, ages, processes, order, timing, direction of change, patterns, differential effects of environmental factors at different ages; structures, i.e. relationships, patterns, etc. both within and between/among groups.

More civilized ways of validating or proving ideas are used, depending on group consensus, conformity, agreement, respect for authority and prestige, formalized laws and standards. Polls and elections become ways of resolving differences, with occasional defections, wars, and so forth.

Importance, goodness, right and wrong, and beauty are defined by group standards and group accepted authoritative declarations, by public opinion, by law, and by cultural "totems and taboos", mores, etc. Beauty is defined by expert opinion and historical agreement. Morality is an internalization (socialization) of community standards based on a desire to be a "good" or "nice" person, conforming for the good of the group, based on law, decisions of committees, authorities, legislatures, congresses, and judges.

Agricultural Age Education

In the agricultural age, students and their minds become growing things, not passive, but striving for growth. They have needs to be met and nurtured. They need the right treatment at the right time in the right place. Teachers become "sowers of seeds," "herders of the flock," guards, tenders, socializers, guides and guardians of cultural survival. Materials become need meeters: seeds, feed, fertilizers, water and sunlight. Structure and timing of materials becomes important; content must reflect social structures, laws, morality, and expert opinion. Processes of education are cultivators, pruners, fertilizers, etc. i.e. group discussion, discovery, projects, consensus, etc.

The education of this age is more civilized and civilizing and more reasonable than in the stone age. It brings unity from diversity. It allows greater and deeper progress in every field. It permits survival with fewer skirmishes, and with more security.

It is also more complicated. There comes to be so much of it that some students start to doubt its worth: "A B.S. degree is just that, a bunch of B. S.; An M.S. degree is more of the same; and a Ph.D. is just piling it higher and deeper." (Anon.) And when differences become great, the results are wars on a much more massive scale.

Industrial Age

As agriculture became more sophisticated, more people worked on refining and making tools and then machines to help the work. This change brought about the Industrial Age. Models from previous ages were modified with the new technology.

If people are like machines, the questions asked about them need to stress systemic relationships i.e. constituents, properties, interactions, dynamical laws of operation, analytic precision, consistency, specialization, validity, reliability, standardization.

Practical proofs become more important than individual or group validation. Answers need to be precise, to work; to explain, to predict, to allow control, to be consistent with other events and information. The scientific method becomes a vital check on validity.

Importance and goodness, right and wrong, and beauty become dictated by major principles of practicality, simplicity, parsimony, consistency, precision, efficiency, or the illusion of these. Standards are made more precise, less dependent on logic, consensus, and authority, and based more on correlational and predictive surety. Morality comes to depend on principles that are chosen as being beyond reproach.

Industrial Age Education

In the industrial age, students become machines to "turn on," with wheels turning, etc. They act nearly independently, but again must have the right materials and fuels provided at the right time and place. Teachers become technicians who fine tune, "push the right buttons," mechanics who repair and grease the wheels, managers of time and energy flow; providers of materials, catalysts for change, manipulators of conditions. Materials become part of an assembly line of production, catalysts for change, and fuel for energy. Processes of education become means of production: work; a job for which the teacher is accountable for management of materials, time, and energy i.e. mastery learning, teaching machines, and novice to expert techniques.

The gain of the industrial age is precision and certainty. Each practical skill and concept becomes sure and techniques of checking each one becomes vital to any student and teacher.

As earlier values are challenged by new standards of practicality, and abandoned with progress, however, moral crises occur. Change consistent with prior experience is absorbed. Change that challenges tends to revolutionize and forces one to either reject the new values as immoral, or to return to earlier forms of structuring, validating, and valuing on that concern to find ways to find the needed certainty in morality.

Information Age

The information age is relatively new. Hopefully, typical questions and models of the past are being continued, with the addition of new technology. With the fast paced addition of more and more precise information and data, more and more people are needed just to manage access, and communicate that data to keep industry flowing. With that need, technology answers with data processing machines, and the computer.

If a person is a multi-purpose information processor, questions become focused on when, where, under what conditions, and how to access, use, and organize the great amount of information available. The context of use and situational demands become vital to understanding.

Proof of answers become dependent upon situational need, value systems, on cultural bias, and on "schools of thought".

Importance, goodness, right, wrong and beauty must be assessed relative to background, context of use or comparison.

Information Age Education

In the information age, students become processors that take in data and programs, process it by rules, and put out appropriate projects, products, and behaviors. Teachers become information processors as well. Materials become data with processing algorhythms and heuristics and selection rules for contexts and situations in which to use the data, processes and rules. Processes come to stress transfer, generalizability, specificity and matching the data with the right algorhythm or heuristic, stressing flexibility, individuality, context and relatively as the basis of creative functions i.e. Multipurpose, multi-method, multi-value (Shavelson, 1988).

There is a sense of magic in this age. Anything can be done with the right input and program. There seems to be no end to the possibilities.

If one is not careful, if one has not learned or ignores the lessons of previous ages, all things tend to become equal and diffuse out of context. Sometimes, sadly, when earlier stages are incomplete, or where competition between stages occurs,

morality also becomes situational and personalized. It seems dangerous to begin with the information age. The earlier ages should be completed first.

Next: Back to the Future?

Which way will we go in the future? Will we return to the barbarism of the stone age, with morality based only on personal desire, with survival being all important? Or will we find a higher niche that builds on the positive parts of the past? Or in the scheme of developmental possibilities, must we use a combination of both?

If, as Naisbitt (1982) suggests, the need for food, clothing, and safety brought about the agricultural age from the hunter-gathering stone age, and the industrial age came about as the need for tools for agriculture progressed, and the information age fills the need to make industry more streamlined and individual, then the next phase will probably stress the necessity of knowing which information is better or worse, true and false.

As competition for information increases, and availability of information becomes costly, disinformation becomes more crucial to cultural, industrial, political, and religious competition. The use and dissemination of false information becomes widespread. national leaders send false leads to their competitors; candidates play "dirty tricks" on their competitors; tobacco, alcohol, and drug producers send out misleading information to counter research critical of their products.

As this trend continues, the effort of many people may be needed to separate truth from falsehoods. The believability of information may become a very important and time-consuming quest. The result could be a return to the quest for survival on a basic level, with some sources of education and information becoming enemies of other sources. It may become as important to shut off attention to data as to direct it.

The trustworthiness of sources may become a standard. It is likely that ultimate sources of truth will become necessary because of time requirements. Eventually, Gog and Magog may be those ultimate sources for different groups. Then one or the other must win and the other be annihilated.

Another possibility: Growth Step by Step:

While much of the world falls apart, it is possible that the same situation can be used for improvement. One may progress through the ages well and productively if stages are not skipped or left incomplete. Instead of going back to the stone age, one may go ahead to a new vista perhaps like the stone age in some ways, but on a higher level, having maintained principles learned along the way.

Next Age Education

A comparison of theories of development and of history gives credence to the use of these eras as developmental stages. Psychological theories i.e. Freud and Erickson's Personality, Piaget's cognitive, Kohlberg's moral (Atkinson, 1987); Corey's Group change theories; historical domination of philosophical systems (Hilgard, 1987); Bruner's (1956 steps of validation of ideas; Musical, literary, artistic, political, economic history; the history of school structures and organization (Bruner, 1985) each parallels these eras.

Perhaps in any topic the order of learning should be dictated by appropriate concerns of where the students are developmentally in that topic.

Metaphysically, questions should be dealt with in order of the ages: identity/definition and cause/effect should be first; classification, structures, and development, second; analysis, synthesis, and precision, should be third, followed by extension, inference, and contextual application.

Epistemologically, personal theories should develop first, followed by consensual discussion, followed by practical proofs, and then separating proofs by spheres of application.

Ethically/aesthetically, leadership forced opinion should be developed first, and then give place to social opinion which should yield to principles, which will need to be tempered by application in context, all with proper concern for the reality of morality.

Practically, paranormal, philosophical pre-science should lead to biological, geological, anatomical concerns which should lead to physics, chemistry, and physiology which should lead to sociology, history, economic, and psychology which should then lead to religion, politics, and scientific philosophy.

Perhaps the school curriculum should be guided with progression between courses guided by era related concerns? Perhaps a particular class should be presented such that students progress through the ages in that topic. The possibilities are enormous if the developmental qualities are verifiable. The next step is to identify counter arguments to this proposal, to build simple models of the larger model and test them for difficulties, and refine or eliminate the proposal as is appropriate.

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The Next One Hundred Years

by Scott Ferguson

Admissions and Scholarships

Since 1984, Ricks has grown from 6100 students to 8100--an increase of 2,000 students. Before Fall 1989, we managed to grow without denying admission to a single worthy student. But now, with the increasing number of applicants, we cannot continue with the same policies and procedures we have used in the past.

This paper will address what options have been discussed and implemented. It will also point out what we can expect for the future. Finally, it will discuss several fundamental values that have guided policy development at Ricks College over the past 100 years. In the next decade we face the challenge of maintaining these values as we enforce an enrollment ceiling.

The Admissions office and President's Staff spent several months last year drafting and discussing proposals. Our goal was to find a way of limiting enrollment without affecting our open-door policy. Below are several of the options we discussed:

1. Change the academic probation and suspension policies.
2. Move the admissions application deadline from August 1st to June 1st.
3. Use Summer School as an alternative for those students who either missed the application deadline or did not take the ACT.
4. Change the residual ACT assessment policy, which allows students to take the test after being admitted to Ricks.
5. Require mandatory Summer School attendance for our less prepared students.
6. Create an evening school option for those students who completed their application after the deadline but could not attend Summer School.

We have dealt with these options in various ways.

1. Ricks College and the College of Eastern Utah are the only two schools in the intermountain area whose academic probation policies allow students to fall below a 2.0 GPA. where space is now a premium, we can expect those attending to perform at a minimum standard of at least a 2.0 GPA. This last spring President Christensen gave offi cial approval to adopt this standard.
2. We moved the admissions deadline application from August 1st to June 1st. This gave the Admission Office the ability to better control the flow of applications. Once our office had received enough applications, we used the dead line as a lever to refer students to Spring Semester or to other options.
3. We are referring students into alternate entry dates such as Summer School and Spring Semester. This is useful because fewer students will accept this as an alternative and it helps fill less popular terms. It also allows us to reduce enrollment without having to say "no".
4. During the years where the enrollment was declining, we admitted students without an ACT if they would take the test at Ricks the first day of class. Beginning Fall Semester 1989, we required new students to complete this requirement before being admitted. We continued to make exceptions for returning missionaries.
5. Mandatory Summer School Admission differs from using Summer as an alternate entry date. We use grades and test scores as the criteria for the selection rather than lateness of application materials. Our initial proposal argued the less prepared student could benefit from attending Summer School. We determined this by establishing a predicted GPA for every student.
   Students with a predicted GPA below 1.888 would have to attend a Summer session before they could enroll for Fall. We felt we could redirect several hundred less prepared students either into Summer or into choosing a different school. Fall enrollment, however, was contingent on their successfully completing Summer School. Although this idea was popular initially, it was discarded because of our desire to retain an open admission policy.
6. The popularity of Evening School increased as enthusiasm for mandatory admissions into Summer School decreased. In 1989 we still had 400 students too many for Fall Semester. By offering afternoon and evening courses, we enrolled an additional 350 students without over-burdening day school. This also allowed us to use our facilities more effectively.

In summary, this year has been a year of change. Flexibility in administering policies has been replaced by firmness and commitment to a standard. After all, making an exception for one student results in frustration for another. We are using the facilities more effectively and have admitted a more qualified student.

By June 1, 1989, we had admitted as many new students as we targeted. Thereafter we made exceptions for returning missionaries, former students and hardship cases. Other than this, we did not admit any new students into day school after the June 1st deadline.

Moving the deadline to June 1st allowed us to refer several hundred students into Summer School and an additional 450 students into Evening School.

Dropping the residual ACT brought us a more committed student. Research conducted by Alan Clark shows students who take the residual ACT, do not do as well as those tested on the national test dates. They also performed below the Ricks average and their dropout rate was much higher. In past years, we have admitted as many as 500 students without an ACT; this year we made very few exceptions.

Each of the new policies has influenced this year's enrollment.

Summer School	--300 students encouraged to attend Summer School because of low preparation index (predicted GPA). Record enrollments were set each term. --100 students attended to be eligible for Fall.
Evening School	--450 students referred to Night School, 352 attended.
Residual ACT	--350 students were incomplete and not eligible for Fall Semester.
June 1 Deadline	--A total of 900 students affected by the deadline in one way or another.

By requiring the ACT, we have admitted a better student--a more committed student. Summer School enrollment set a record, Fall Semester enrollment is at an all time high even after our efforts to limit. We have a full Night School--a record enrollment of 8,136 students.

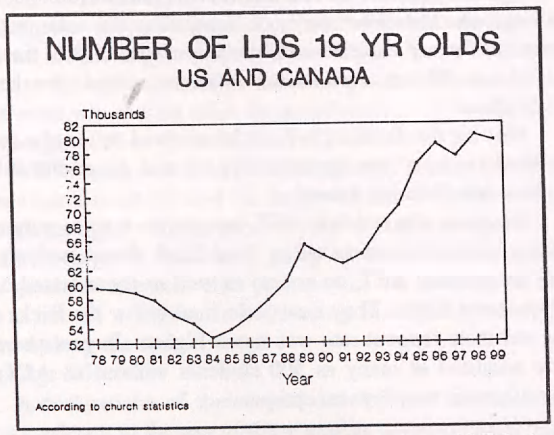
What can we expect for next year? Are we moving into an era of selective admissions? What are the implications for the future? What can we expect for the next decade?

To answer these and other questions, it helps to identify several other factors in addition to those policy considerations already discussed. First, each of us at Ricks is making every effort to promote excellence in our programs. We have worked hard to improve the quality of our publications and our message to the public. The finest advertising we receive is when our satisfied students express sincere appreciation to their friends and relatives for the "Ricks Experience." From one who has represented the school extensively, I can assure you, we enjoy this kind of publicity.

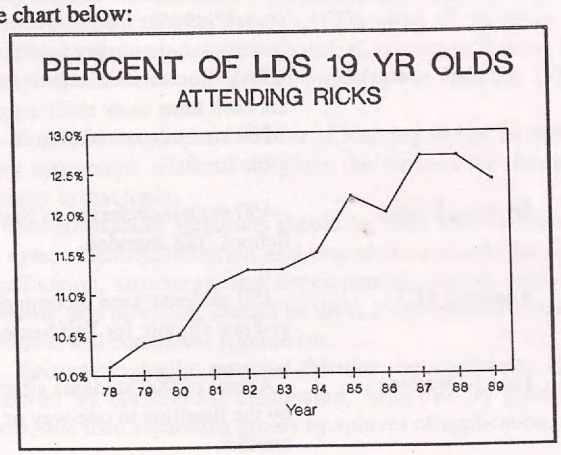
Secondly, our scholarship budget has increased 170% since 1984. When we include private monies the increase goes as high as a 200%. This has been a blessing to our students. In past years some students have sacrificed scholarships from other schools to attend Ricks--even though they did not get a scholarship from us. Students no longer need to make this sacrifice. We can now afford to recognize solid academic performance with fair scholarships. This is having a positive effect on the number of student scholars we are attracting.

Third, in 1985 the Board of Trustees reduced the tuition 20%. This put a $400.00 difference between us and BYU. It also made us more competitive with other two-year schools.

Fourth, and perhaps the biggest factor to consider, is our changing demographics. The available pool of LDS students has been on the increase since 1984. See chart below:

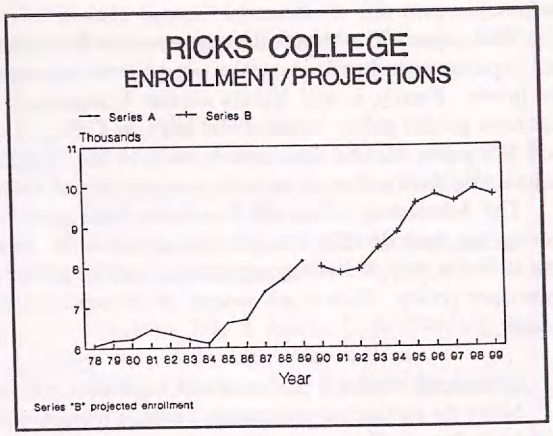


There is a correlation between the number of LDS nineteen year olds in the U. S. and Canada and the enrollment at Ricks. Since 1984, we have increased our share of the market 2.7%. See chart below:



What does this mean for future classes and teachers? Demographics show we should continue to experience full enrollments. Although we may take a slight dip over the next three years, the potential pool will still exceed the enrollment ceiling level of 7500 students. Because of this potential dip, we may need to adjust next year. Adjustments might include the policy considerations outlined at the beginning of the article or developing new strategies depending on the needs of the institution.

What about five years from now or even ten? By the year 1996, we are projecting a potential enrollment of about ten thousand students. See chart below:



There are some fundamental concepts that should be considered as we make plans. First, we are an open-admission school. The direction we are receiving shows this is not changing.

Second, the four points of the Mission Statement clearly define our role in the Church Educational System. We are here to build testimonies of the restored gospel and encourage each student to live its principles. In tandem with this, we prepare students for future educational opportunities and employment through the excellent training we can provide. Any changes we make should be consistent with our Mission Statement.

A third concept is we should all guard against the tendency to become cavalier. That is, as an institution becomes more secure, those within become less caring and nurturing. Our nurturing atmosphere has always set us apart from other institutions.

Fourth, the size of campus is not changing. We need to keep space for the "second chance" student. A place for the less prepared. some of our greatest accomplishments are with these students.

It is now time for the institution as a whole to wrestle with keeping the "Ricks experience" alive during this surge of unprecedented interest. Perhaps the time has come to review our Mission Statement in the light of our present situation. Our challenge is to clearly identify our mission and to develop policies and procedures consistent with it as face an ever increasing number of student applicants.

Literature

ON BENDED KNEE

by Larry E. Saunders
Mathematics Department

"Behold, my Beloved Son in whom
I have glorified my name."

Oh, My Saviour - Is it thou?
How can it be
right here and now!
I'm filled with fright
I see the light
but it's too bright
Almost I flee
on bended knee. . .

"Arise and come
that ye may thrust
your hands into my side
and feel the prints of nails
in feet and hands
and know that I am he."

Oh, My Saviour - it is thou!
My eyes can see
and with my hands
I'm asked to touch
but they're not clean
how can I gaze
how can I thrust
and yet I must. . .

"Arise and come
that ye may thrust
your hands into my side
and feel the prints of nails
in feet and hands
and know that I am he."

Oh my Saviour it is thou
I bathe thy feet
with my own tears
and wonder how
the stripes thou bore
have healed me more
my soul doth fly
my eyes yet cry. . .

"Arise and come
for now ye know
your faith hath made you whole
and feel the gift of love
my Father gives
to those that follow me."

Careful Education

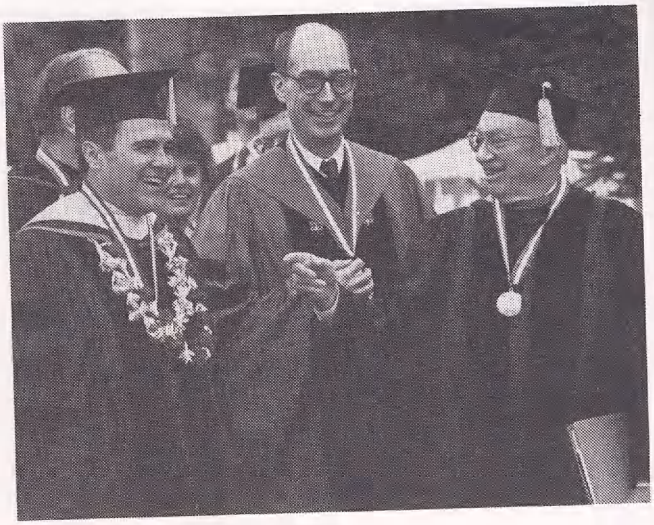
by Dianne Dibb Forbis
English Department

Professor Pate's career
forswears careening,
so when Sam
(let's call him Samuel)
fell
awkwardly across the crucial
threshold to academe,
Pate claimed him
to drain him
of a thousand bowls of
mushy Frosted Flakes,
to fill him with tight
hymned hors d'oeuvres.
Samuel demurred.
Pate persevered.
Samuel persisted in lunging,
veering, spinning,
chewing rarely,
and all the time grinning,
Pate grimaced
and gained advantage only
by soft multiple choice morsels
that enticed a try
at sterner stuff
until enough viscous swell
had been swallowed
that Samuel didn't seem
to slush.
And then hooray
one sunrise day
the shadowed student
started parroting dimly
Pate's personally monogrammed
paradigms.
So now, with some luck,
the lad may bag
sniffing and giggling at
every scraggy flower
and will solemnly scour
perfect petal tips
in search of scholarship.

Autumn Walk
by Dianne Dibb Forbis

Fall.
I feel the pull
to lolling.
Let me not be so
tightly intent upon
old caravaning purpose
that I miss rollicking
respite
in gold-threaded tents

of restive tentative.
Let me learn
to squeeze last crisp trill
from dried diva leaves
while I sing along
cracked
silly
leftover songs.
Let me dare to stare
unrelentlessly at
rusting frills
and dab my own drab
with grabs of royal
red-to-purple purposing.
Let me suck in acrid air,
sorting rare pungence,
snorting caustic gentility
while gibbering.
Let me not
straight
smooth
stride with haste
a raucous-laced season,
never landsliding loose
enough loud seasoning
to taste.



The Renewal

by Colleen S. Peterson
English Department

The snow yields its white beauty
To the warmth of its enemy.

The crocus bursts through their barriers--
Contrasting their colors to a white wilderness.

The brown earth impatiently waits to unveil itself
From the suffocation of its kidnapper.

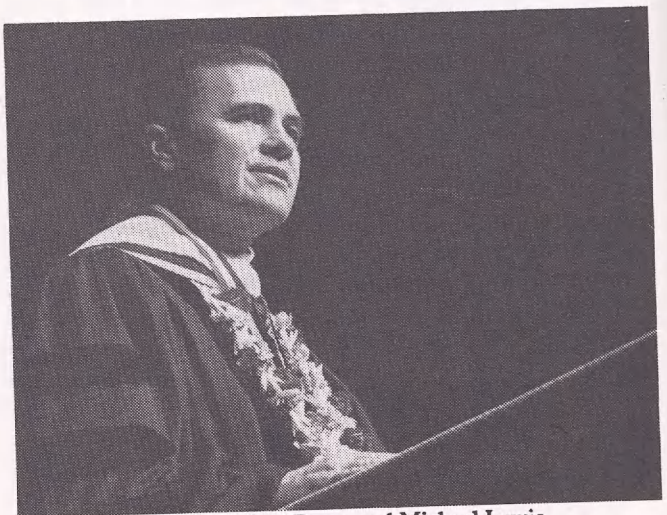
The trees banish a heavy, white frosting;
They yearn for the lightness of a refreshing green.

The whole earth pleads for spring--
The promise of the resurrection.

The enemy of my faith tempts me to stay
Under his facade of blackness,

While the valleys are inviting me to immerse myself
In their offers of fresh, green hope.

The buds of my dreams pushes my soul to blossom,
I long for the spring of my existence.



Inauguration photos by Rod Boam and Michael Lewis

TIME FLIES

By Paul A. Birch
Computer Services

"Space, dimensions, time, perception. . .to keep up on all this stuff is really quite technical. They ought to pay me more! That's it. . .it's time for a raise! As soon as I get back, ah, yes, that's what I'll do. What a genius. . ."

At that moment the tall, lanky, shabbily dressed man who had been muttering to himself walked directly into Verner as they both rounded the corner. Not bumping him on the side or merely grazing, but hitting him dead center. Such a centered hit, in fact, that both men tumbled to the sidewalk along the busy street. The tall man, with unkempt brown hair, unshaven face and a growling stomach had an unworried expression smeared all over his face. He was the first to his feet, offering his hand to help Verner up. They eyeballed each other at first with suspicion, then with cautious relief, as if glad to see that it wasn't a motorcycle gang in an ugly mood that they had stumbled into. Before Verner could pardon himself, the other man spoke through dry, cracked lips.

"Careful, son! You almost missed me!"

"Oh, uhh, yes. . .sorry, I wasn't. . ."

"Well, whatever it was that you weren't doing, I'm glad you weren't doing it now. Come on, I've got to catch my flight!"

Verner wrinkled his brow and peered cautiously at the other man, who was wearing a battered old derby and a gray trench coat, which seemed to be strange, this being the middle of July. The statement had caught him off guard.

"The flight! You know, swoosh! Up in the air, very fast. . .oh, wait, you don't know me, do you?"

"Nor do I want to." Verner's thoughts oozed out all over his face in the form of expressions of perplexity. But the man kept rambling on as if Verner were an old friend from the fraternity, or street gang. . .or something.

"I am Slog, " he stated matter-of-factly, then in a hushed tone bent over closer to Verner. With hands cupped about his mouth. he made the startling revelation, "and I am the timekeeper of the universe."

Verner stood with a blank look on his face, trying to rally his scattered thoughts into one cohesive pattern. Finally his eyes opened wide and his "Oh, I see now, you're crazy!" look broke out on his face. This expression, also, Slog ignored, trying desperately to get this message across to another person who seemed to choose not to believe him, but would rather stand there and change expressions on his face occasionally to let people know what he was thinking, or that he was thinking. But Slog continued in the face of adversity.

"I know, I know. You don't believe me. Just like everyone else, you probably want to ask me "Gee, what does the timekeeper of the universe do? Are you ever late? How about some nachos?" But, you see, I really do need to be running. So, are you coming?"

Verner, by now displaying his "Gosh, silly me, I can't believe I'm doing this" look, relented without knowing why. Something about this strange creature intrigued him, and he almost felt compelled to go along and see what would come of it. He glanced anxiously at his watch, not wanting to be late back to work, but then again, not really wanting to go back to work. He prided himself on his punctuality, but that drive for timeliness seemed to be pushing him towards this, "Slog" person, and so he gave in. Within five minutes they were both in Verner's car speeding down the street, Slog navigating and Verner wearing his "What, me worry?" look, listening as Slog's story slowly unraveled.

"You see. . .oh what was your name? Never mind, it doesn't matter anyway; I'll call you Hourman. You see, Hourman, I set the time mechanisms for each dimension, each galaxy, each solar system, even each planet in the universe. Do you know how big the universe is? It is really big! One day, as you call it here on earth, I'm on the Alpha Herculi system resetting their time-space resonant modulator, and the next I'm over in Andromeda rebalancing the fragments of a time-matter collision. Now that's a touchy situation. One fragment to many on one side of the spectrum, and BOOM! Ha, I think I was sweating for two years after that one!"

"Uh, yeah, I know how you feel." That was all that presented itself for Verner to say at the moment. Not a very good selection, he thought. But then, what do you say to a person that is apparently very unbalanced. Was he going to go BOOM!, too? Verner just decided to listen and see. He let his "I want to keep quiet."look do all the talking.

"You see, time is different in each section of the universe, just like the weather is different in each region on a planet. But they're all hooked into the Big Watch. That's where I come in. I make sure that each time sector is running at the right speed so that the Big Watch is running at the right speed. And you thought that Swiss watches were complex!"

"Anyway, the boss says, "Earth, over there in the Milky Way. . .just take a left at M33. . .needs its time drive reconfigured. People are getting off track, trying to make time go slower or faster." You see, when you make it go faster, you miss out on events, both good and bad. By making it go slower, you postpone events, again, good and bad. People want to control time, but that's my job! Hey, I've got seniority! So, the big guy says "Slog, it could get messy over there if it isn't fixed right away. Take care of it, will ya?" So what am I supposed to say? No, perhaps? I'm just a little too close to my pension. So here I am. The job is done, and I'm heading back to headquarters. Take a right here, two blocks down, then a left. Five miles straight out. That's where I catch my flight."

Verner, even though he was driving with a rubber-room candidate, couldn't help himself, and had to ask the question. His "I'm dying to ask a question" look gave him away.

"So, is the earth time slowed down now?"

"For the time being. You see, in timekeeper school, we learned the universal law of time, matter, energy, and everything else. Basically, it says that the speed of time is inversely proportional to the speed at which people want it to go. When I reconfigure a planet's time, I try to compensate a little bit for it, but it usually doesn't help ,much. I end up back at the same place in a few million years anyway, doing it all over again. By the way, every Galactic time Commission has renewed my license the last two thousand centuries in a row! I think that says something of my work."

"Oh.", said Verner, that being the only word that clanked around in his mind at the time. Slog continued cheerfully on.

"I get a lot of wisecracks about my job, especially from those clowns from the Stellar Energy Regulatory Board. They're jealous because they think I have a nice, cushy job. When I was green at the job, I accidentally let a couple of centuries slip through the time vortex. You haven't seen surprised unless you saw the people on Belax IV when they woke up the next morning two hundred years late for work! I heard comments like "Slog, where does the time go?", or "Slog, don't let time slip away!" That's ok, though. When they were trying to

in a broad easy Australian crawl, his head sloping gently into the water on the right side, coming up for air with his mouth gaping open on the left side before dipping his face down and under once again. His legs often put up a splash. Her mother lay on her back and did an attempt at a backstroke, but succeeded instead in whiling away the time in relaxation. Sheila couldn't swim. It was her scourge and open sin in a family of swimmers. It was all right for Kitty and Peggy not to swim and to play in the sandy shore with their metal pail, with a blue rocking horse on its side. It was okay for them to dig in the dirt with their Betty Crocker free silverware spoons, if their mama didn't catch them, but Sheila was older. And to her father, whose mother was an honorary member of the Polar Bear club in New York City and swam twelve months out of the year even when there was snow on the ground to this man it was not all right that his daughter could not swim. But Sheila was scared. She had seen advertisements for The Creature From the Black Lagoon at the Saturday matinees and had wanted to go, but her mother said that the movie was on the B list from the Legion of Decency. So she couldn't go. Still she thought of that creature and how maybe one of them lived in the green gravel pit. Maybe it was a green lagoon, or maybe there were sharks there. Her parents said there weren't. They hadn't believed her either at first when she ran screaming out of the water at Padre Island because a wave came up in front of her not with a school of mullet, but with a long dark figure buckled over with a fin. The undertow had been strong against her legs as she forged her way back to shore, her hands waving, shark, shark, and they hadn't listened. But in a few minutes they came running out, their arms flailing. Only a small sand shark, it was the largest fish she had seen except for the giant catfish at the base of Roosevelt Dam.

She knew that the sharks were not really there, but then again, it felt like they were there, and that frightened her, and she could see in her mind's eye just as clear as if they had been of the characters from the Bobbsey Twins or Nancy Drew, except she was certain that Nancy Drew was fiction. When she looked into the depths by the sandy shore, she thought to herself, "They don't know. Maybe there are sharks down there, just waiting to bite us." And so she remained near shore, her father or mother long ago having given up holding her up under her stomach, showing her how to dog paddle, having called her names and having tried to shame her. Sheila was afraid. There were lots of things her parents didn't know about, lots of things she couldn't talk to them about, and her fear of swimming was one of them. So today when they got out of the water for iced tea and her dad pointed out a dead snake, she wanted to get away by herself.

The family was alone down there by the Brazos. Perhaps they would seine for minnows, under the cool of the Padgett bridge, where the tall cement pillars cast dark blue shadows across the tricky river. Dead sticks, bleached and sand, scoured lay about. Once the family had seined for minnows and the net came up full of tiny fish struggling and sparkling in the sun like the shining dime she found in the glass of water for the tooth left overnight for the tooth fairy.

Her mother shouted "be careful" warnings while she spread out the army blanket, "Be careful of rattlers, of sticks, of quicksand, of deep holes--and you, Sheila--Don't wander off by yourself too far. Look after your sisters. Don't fight with your sisters. You're supposed to love them. My sisters and I always got along."

Sheila liked to go by herself into the shadow of the pillars and listen to the rhythm of the cars crossing overhead. She liked the whistling daring birds who built their nests in the crannies tucked above. She heard her mother's warnings behind her, not to go too far, etc., and she agreed. It wasn't that hot, like it usually was in that time of the afternoon. It was almost as if the fall was going to come sooner than supposed. Before long it would be October, and she could wear sweaters and read all the books she wanted and go back to school. Sheila felt bad that she could not swim. But somehow she could not let go, whether it was of the swimming pool's side or the sandy part of the shore.

She let herself meander and remembered her mother's warnings not to get out of sight. She wouldn't go far, just far enough to imagine something else than being who she was. Sometimes she imagined she was an Indian princess, or an English lady from long ago, or Cinderella, or Rapunzel. But today she thought of the little garden back home that was so much work and fun. The watermelons were small, and there wasn't much corn, but the family worked in the garden together. There she could forget that she couldn't swim. Once her parents had taken her to a giant watermelon patch where you could pick all you wanted for ten cents apiece, and some of the watermelons were orange inside instead of red, but she still wouldn't put salt on them. Or sugar. They ate them at the city park on old copies of the Megargel Enterprise.

Today she watched buzzards and then heard a dog barking, and for a minute was scared. Up ahead, with her family not too far away behind her, was a clump or high weeds. She heard a man talking to a dog. She turned in the trail. There in the River stood a tall man with white hair. His overalls were rolled up haphazardly at two separate lengths above the knees. He was pulling a flapping golden fish out of the water.

"Howdy, young lady, " he said. "Quiet, Ginger. She won't hurt you. She likes kids." And as if to prove him right, the dog lay down with panting tongue and a happy tail that kicked up a little cloud of dust. It whined. "You can pet her. Ginger is friendly, likes kids," he said while chasing around in the sand after the flapping fish. "Must be a five pounder. What do you think, young lady?"

"Yes, sir, it sure looks like a five pounder, " Sheila said without slinking back and forgetting completely that she was never supposed to talk to strangers, and never did, but this time everything was okay. This time it didn't matter. And her mother's anxious voice that she carried around in her head never even stirred. She petted the dog. It was shaggy, black and white, friendly.

The man held the fish up to the sunlight. It was golden like something from a fairy tale. "Yellow cat," he said. "Ever eat a yellow cat?"

"Yes, sir. My daddy catches them. And I help him hunt bullfrogs."

"Sounds like you're a big help to your folks. I saw you over there and wondered where you people were from."

"We're from Megargel, sir."

"Come down here often."

"Yes, sir."

"Go seinin' and swimmin'."

"Yes, sir."

"Fishin'?"

"Once, and we caught lots of those little golden fish."

"Sunnies."

"Yes, sir."

"Swimmin', huh?"

"Yes, sir, but I can't swim."

"Oh, I see. You're sure about that?" He let the fish go, setting it down in the deeper water. Sheila watched it curl into the depths and slide away with the river's current. A shadow passed over her and the fisherman. She looked up. Piles of blue flat-bottomed clouds marched up from the south, going north all the

way across the sky.

"Yes, sir, I'm sure."

"Think we'll have some rain, maybe a storm?"

"I was in a tornado, in the cellar. It blew away lots of houses in our town."

"Oh, yes, Megargel. I recall that now. You fared okay, I see." He smiled down at her while he brought a squirming worm to the hook. "You know how to do this?"

"I do. I do it lots of times for my daddy. He lets me fish for sunnies."

He looked very absorbed with his worm. "You were down in the cellar. What was it like?"

"Peggy had hold of my hand and the grownups were yelling, but not my mama and daddy, and then when we left my legs hurt. My hair stood up down in the cellar under the ground. It was dark down there. Peggy asked me if I was scared. And I told her I was. But Dorothy got taken up by the tornado to a different place, and all she had to be scared of was witches. There are lots of witches in the Wizard of Oz. Have you read the Wizard of Oz?"

"Years ago, young lady. Years ago. Witches, huh."

"Lots of times I wish that tornado had carried me away just like Dorothy."

"To Oz? Surely not to Oz. You wouldn't want to go there."

"I wouldn't?" Her eyes grew big.

"Oh, no. Not to a land where there are witches and things are not what they seem. You would want to go somewhere else, young lady."

She felt very keenly the impact of what he was saying. "Where would I want to go? To New York?" She had been many times to visit her Irish grandparents in New York.

"No, not New York."

"But where then?" She looked at him eagerly.

The old man's hair blew in the wind like a long ago forgotten flag, soft. "Down the River, down this River. That's where you would want to go. I'll wager that there are just a whole passel of people who would wand to be like you and to be able to go down this River."

What he said didn't quite make sense to Sheila. "But I don't see how I could go down this River. Isn't it deep, and isn't there quicksand, and my daddy said there are big Alligator Garfish in some places. We saw a dead one on another river bank last year."

"Young lady, young lady, you have a lot to learn." He laughed and threw out the line. "This is a very special River, this Brazos, the queen of all rivers, and it flows right into the Gulf of Mexico."

"It does? Oh, no. Then there are sharks in it. They must come up right from Padre Island up this River. But can they get into the gravel pit?"

"What do you think?"

"Maybe. Maybe they can."

"Anything is possible, now isn't it?"

"But are there sharks in the gravel pit?"

The storm in the west was building up and the day seemed to be waning. The old man walked out deeper this time with the fishing pole. "No, Ma'am. No sharks in that Padgett gravel pit. None whatsoever."

And she believed him. Suddenly it was as if there had never even been any thoughts of dark circling blue figures in the depths of the gravel pit. Her parents had told her there were not, but the sharks stayed down there in her mind, yet the fisherman told her there weren't sharks, and it made everything okay. Everything was okay.

"What would be nice about going down this river, sir?"

"It's nice and easy on a river. It's always new and clean, always an adventure. You can camp out, be close to the earth."

"But what if my boat tipped over? What would I do?"

"Why you would swim or float along with the current, and you would like it."

"Are you sure?"

He chuckled to himself. "Now, didn't I say that anything is possible. I don't have all the answers, but I do know something, Young lady, I know that you are going to be a fine swimmer."

She was stunned. "How do you know?"

"Didn't I say anything is possible?"

"But, I'm scared. I can't let go."

"You don't have to let go. You just have to float and think about the river. Think about floatin' along and cookin' shinin' fish over a campfire, and think of Ginger here taking after a coon or think of all those things you like to think about."

She wanted to try. "Can I try now?"

"You better. It'll be time for you to head on home soon, I'll wager."

She stepped into the water. It was warm.

"But what if there is quicksand?" she protested as she waded in up to her thighs. "What if I drown?"

"You won't drown. You want to go down this River some day, all the way to the sea?"

"Yes, sir."

"The thing to do is to lie down in the water and to think."

And so she did, and she whiled away the time talking to him about her family and school and reading and her stories, and the water seemed friendly so that she forgot that she was in it almost; and then Ginger barked chasing after a rabbit. "Ginger, old girl, get back here," he laughed and took out over the weedy dune. He would be back, she felt confident about that, so she stared up at the sky and let her legs float up to feel the gentle tug of the river. Tiny minnows nibbled her toes. Where was he? Was he coming back? When? She thought of school starting in two weeks, and she wondered who her teacher would be. She thought of the sharks and how they weren't in the gravel pit. She thought of the book she was reading and the books she would write someday.

"She--la! She--la!"

She thought of the River going all the way to the sea, to the Gulf of Mexico. She thought of what she was going to be when she grew up. She would lead expeditions down this river. And maybe the old man could show her how. They would. . .

"She--la! Come on. Get out of the water. We're going home."

Her mother's voice calling to her over the distance. Home. And then suddenly she realized that she wasn't holding on to anything. She was on her back, floating gently south in the clear water and not one of her hands or feet was touching. It was a miracle. She felt as light and free as the River. "I can swim," she thought. She touched quickly so that she could assure herself that she would not drown, and let go slowly again. "I can swim," she thought. She watched the sand float gently to the bottom as she sloshed out of the water and put on her flip flops.

"She--la!" The voice more urgent this time. But she had to tell the fisherman first. He had to know. She ran to the top of the dune. She could see the tangle of mesquites on the far side of the River. And, faintly in the distance she heard the dog barking. But no fisherman.

"I'm coming, Mama, just a minute." She started down the dune toward the far side of the River toward the sound of the barking dog.

Her father's voice. "Sheila. You get over here. Don't talk back to your mother. You better hurry or you'll get left."

She knew now she would have to go. Her daddy got mad

sometimes. It was not good when her daddy was mad. She started back reluctantly. It didn't seem fair. The fisherman ought to see that she could swim. She wanted to show her family, but they were in the car when she got there. "Shake the sand off your feet, and be sure you sit on the towel. Kitty, stop pushing Peggy."

"You kids settle down or you're in for trouble." It was their father who said this. They got quiet. Her dad was mad, probably. It was best to be quiet, but she had to tell him.

"Daddy, I think I can float now. I was floating over there by that dune."

Her dad turned around. "That's good, Sheila. You let go?"

"Yes, sir."

"How did you decide to do that?"

"A man told me how."

"When?"

"Over there by the dune."

"Honey, we watched you the whole time. Where did you come up with this story? There wasn't any man over there." Her mother said this without turning in the front seat.

"He was fishing in the river."

"Sheila," her mother just laughed and shook her heard and winked at her dad. Sheila didn't like it when she did that.

Her smiling dad looked at her in the rear view mirror. "Next time we come to the gravel pit, you show me how you can float. Not long you'll be swimming like a fish, like your Grandma."

Sheila felt proud then as they left the cool river bottom for another hot tomorrow in the garage apartment. She shook her hair--curly and still smelling of her mother's Toni home permanent--out of her eyes. And then, she saw across the river a moving figure, glistening in the fading sun. She was sure. It must be him.

"Daddy, Daddy, I see him."

"What's that, Sheila?" he called over the sound of the air rushing in through the Ford's front window.

"I see him."

"Who?"

"I see the hermit. It's him. I see him."

Instantly her sisters sat up, took notice. "Where? Where?"

"Hurry, Daddy. Let's go talk to him!" she pleaded.

The Ford pulled reluctantly up the dirt road and bounced across the bridge. Nothing seemed to have changed in the abandoned yard. No hermit in sight.

The car slowed by the mound. "He's gone. He's probably gone back into the earth," Sheila said wistfully.

"Aw, Sheila. You're just maginin' things," Kitty said. And the car moved on.

"I saw him," Sheila protested quietly, her whole body turned in the seat, her eyes locked onto the departing mound and river. "I saw him."

And as if to verify what she insisted, she saw a black and white border collie jump up into the wagon--but no hermit. Maybe next time, or if not then, maybe the time after that.

What must it be like, she wondered, to live alone down in the dark of that dirt hill. She had to know. She had to talk to that hermit again.

There were things she had to know about the River, things only he could tell her.

She had questions, questions only he could answer.

She had to talk to that hermit.

Essays, Speeches, Reports

GRAND CANYON SUITE

By Donnell Hunter
English Department

As my footing on Mt. Teewinot became more and more uncertain, I began to doubt my sanity when I accepted Ed Williams's invitation to join his 1987 Field Expedition. I like outdoor education. I had taught Discovery five summers. But I was only fifty then. Now, each slow step up into the granite reminded me I was facing more than a mere virility crisis. I was just plain old. I should have had sense to say no. Ed had already hinted about next year, but I wasn't making any promises. This definitely should be my last year of such foolishness.

Our last big trip would be to Grand Canyon. "The North Rim is over 8,000 feet," Ed said, "we could be camping in snow, but at Phantom Ranch it might be 100 degrees in the shade. We don't start climbing out till afternoon because the Devil's Staircase is like an oven when the sun beats down. We'll all be in better shape by then." Not exactly a thrilling prospect. Maybe I'd be lucky; maybe I'd break a leg on Teewinot; or maybe bad weather or some kind of divine intervention would cancel that part of the expedition.

No such luck. Wednesday morning, October 6, I shouldered my pack at the North Kaibab trailhead. Like Ed predicted, the North Rim had been cold--ice on the mud puddles. Instead of feeling in six weeks better shape, I just felt six weeks older. Ed and half the students were a day ahead of us because the Park Service won't allow more than 16 people to camp together in one group. I filled my canteen and took my place at the end of the line. That way I wouldn't have to climb back up if some student got in trouble. I'd hike at my own pace, catch the rest when they stopped for the night at Cottonwood. Chanting names of various strata of rock--one of Ed's geology assignments--my students soon left me in their dust. When I stepped aside later for a mule train on its way back up the switchbacks I'd just come down, I was tempted to hitch a ride. The mules made the trail even dustier.

Cottonwood Campground (elevation 4,000 ft.) is located alongside Bright Angel Creek: good water, a chance to soak our feet. After supper I looked up at the lights of Grand Canyon Lodge on the North Rim. Had we really dropped down that far? The students rehearsed their lessons again. I was learning more geology than I wanted to know. I crawled into my sleeping bag and slept like a rock.

Next morning on a side trip to Ribbon Falls, I heard a Canyon Wren singing full tilt. A poem started to form.

I. Ribbon Falls

Canyon wrens apprentice here,
learning trills, descending scales.
The Anasazi taught them how,
then fled, leaving corn,
but taking their song.
After that we read Lyell, and wrens
learned new words for stone:

Kaibab, Toroweap, Coconino
(layer by layer we go down)
Supai, Redwall, Temple Butte

(under oceans now)
Muav, Bright Angel, Tapeats,
(fossil shells and seaweed on the beach)
Dot formation, Shinumo, and Hakatai.

My pack felt lighter, my gait stronger. Our trail wound through the cool, narrow canyons of Bright Angel Creek. High red walls of stone blocked out the sun. Ravens scolded. A Peregrine Falcon stooped from a cliff. When the canyon widened out, I stopped for a snack, took off my boots to cool my feet in the creek. A raven glided down to a rock ten feet away and gurgled something. His eyes were pleading. I knew Park regulations forbid feeding wildlife, but what the heck, I thought, didn't ravens once bring bread to Elijah? It's time someone returned the favor. I tossed him a Ritz cracker. Did his croaking response mean "thank you"?

At Phantom Ranch (2400 ft.), a bustling village at the bottom of the canyon I bought a tall glass of lemonade in the dining hall. Ed's group was still waiting at Bright Angel Campground for afternoon shadows. We bade them good-bye.

At a Park Service campfire program that night a ranger said John Wesley Powell stopped to mend boats here during his exploration of the Colorado River and gave Bright Angel Creek its name. Of the three million plus visitors who come to Grand Canyon each year, fewer than one percent (30,000) make it to Phantom Ranch. Most park visitors spend less than an hour outside their cars.

II. At Phantom Ranch

Where have all the phantoms gone?
Tonight a ring-tailed cat stalks
our food along the pack bar calling roll:
She takes granola before tea
or chocolate, but any stray
crumb in bag or backpack will do.
Who are these strangers, she asks,
who hike so far to change my diet
and pollute the stream?
On the trail this morning, halfway
down from Phantom Canyon a phantom
raven lit beside me on a rock
and gurgled my name. *Wrong,*
I lied, *my name's Elijah,*
bring me bread. Evidently,
these are not prophetic times.
He taught me how phantoms have evolved
exotic tastes: Ritz crackers are o.k.,
but they'll turn up a haughty beak
if you proffer them an apple core.

Next day while most of the students lolled on the beach of the Colorado (which, incidentally, isn't colored red like its Spanish name suggests), I set out to explore. Two suspension bridges cross the river. Their cables were snaked down from the South Rim by columns of men because they were too long and too heavy to bring down on mules. I walked across the black bridge of South Kaibab Trail then followed the short River Trail downstream toward the silver bridge of Bright Angel. On a side trip fifty steps up a little niche in the canyon wall I thought of a passage by Anna Craven in *I Heard the Owl Call My Name:* "If man were to vanish from this planet tomorrow, here he would leave no trace that he ever was."

III. Off the River Trail

Flash floods carved this niche
in Vishnu Schist laced with pink
granite dikes where the sun
never comes except at noon
and stone holds its cool.
No river sounds reach us here.

Then a jet trails its silver scream
across the sky and I forgot
the *kiva*, the Anasazi fire pit.
Bright angel Campground looms half
a mile away and Phantom Ranch, complete
with street lights, a dining hall:
just one more chapter in America's flush
toilet wilderness: 30,000 visitors a year.

On the silver bridge I met a man named Duncan, all smiles and friendly, a retired science teacher who wanted to see for himself the things he had been teaching all these years.

We packed up at four o'clock and hit the trail. Because the way the Kaibab Plateau is tilted, we had to climb only 5,000 feet to the South Rim, instead of the 6,000 we had dropped from the North. At a pay phone by the ranger's cabin, I dialed home. "It's really amazing," I told Nita, "maybe you could come next year."

A mile or so of easy walking along the river, then Bright Angel Trail veered left. I looked up where it led--up, up, and up:

IV. Bright Angel Trail

No matter what you've heard or read,
the Colorado's green, and it's best
to travel Bright Angel Trail at night

or in shadows of late afternoon. First, you hug
poisoned Garden Creek: KEEP OUT. BEWARE.
Up a dry wash and the Devil's Corkscrew awaits

you there. Tonight I see no angels, dull or bright.
Whoever made this trail, if he didn't
have an angel handy, probably needed dynamite.

Half a mile after we left the river there was Duncan again, seated in a portable lawn chair.

"I've got a bit of a bad heart."

"Are you sure you're o.k.?"

"Oh, I'll be all right. I just have to take it slow. That's why I brought this chair."

Our final campsite was Indian Gardens. Posted beside the sign warning us to dump out our boots in the morning in case a scorpion had taken up residence during the night, a letter from the Park Service explained that for safety reasons they were cutting some of the old cottonwoods planted in the year my father was born. In the middle of the night I looked out my tent door to see deer wandering through camp and heard Duncan making his slow way up the trail.

V. Meeting Duncan on Bright Angel Trail

He was all smiles and retired
from teaching junior high
until his heart and blood
pressure threatened to stop

calling roll. "I wanted to see
for myself," he said, "I'll be
all right as long as I take it slow."

We left him there, plodded up
the Devil's Staircase trying to catch
our breath, to climb the next
switchback and the next
before the moon found us
still on the trail alone.

From my tent in Indian Gardens
at 3 a.m. I heard the tap
of Duncan's walking stick--
ten steps and pause--and remembered
how he said good-bye: "A man's
got to die somewhere, and I can't
think of a better place than here."

The ancient Anasazi raised corn, squash, and other crops at Indian Gardens because of the good water supply. Their ruins are found throughout the Grand Canyon area. No one knows why they left. Their descendants might be called Hopi or Zuni or Laguna today. We don't really know much about them, but since we are scholars, we are willing to speculate a lot from what little evidence we have.

There is a story about David Patten and a man who walked alongside him one day. Patten was on horseback. The man was hairy and tall as Patten's shoulders. He said he had been condemned to walk the earth forever because he killed his brother. Some Mormons think the stranger was Cain and find it easy to connect David Patten's story with sightings of Sasquatch in the Northwest. Whether we call our stories "fiction" or "history," we are still dealing with an imaginative reconstruction of the past.

As the temperature decreased, the shrill night sounds of the insects at Indian Gardens also lowered in pitch. I thought about David Patten, about Sasquatch and the Anasazi and other ancient peoples whose cultures we overlay with new cultures of our own.

VI. Sasquatch at Indian Gardens

Unable to die each night I wait
for Anasazi ghosts to gather round
the old stone rings. The sweat lodge
and kiva empty, we have no need for fire,
but take turns telling stories one by one.

They talk about devil men haunting dreams
and how the shaman blasphemed the river
until their bones recycled as leaves.
I tell about my former home: devil's club,
and fern, the trillium waking robins in the rain.
Sometimes I mention that guy from Oregon
who wanted to prove my existence by shooting me.
Armed with infra-red scope, he raised ten thousand
dollars and, like D. B. Cooper, vanished
somewhere over Washington.

But it wasn't his threats made me leave,
nor blood on my hands. I've dealt with both
before. It was the reruns, the same old cycle
again and again, these creatures who come
by boat or train, knowing everything
except who or how to love.

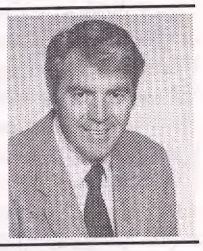
Next morning I heard more German and Japanese than English spoken on the trail. Near the top I met the last of the bright angels--Ed Williams with a jug of orange juice and some doughnuts. He offered to carry my pack, but I wouldn't let him (virility crisis?). I wanted it to slow me down enough to enjoy the presence of the Grand Canyon just a few moments more. ". .. and next year, Ed, when we come back, I hope we can. . ."

Epilogue

I signed up again for the Field Expedition but surrendered my post to Phil Harmon to accept a visiting professorship at BYU. When winter semester ended, Nita and I drove down to St. George and Zion's National Park. Zion's canyons stirred deep. I felt something inside tugging me farther south. The road to the North Rim was still closed, so we drove the extra 100 miles to the South Rim. We hiked half an hour down Bright Angel Trail, as far as the Coconino, then back up because we needed to drive to Kanab before dark. At the curve of one switchback Nita took some pictures of a desert bighorn. Someday we want to go back, this time to the North Rim, and retrace my steps of 1987. Just to see if all the ghosts (including Duncan's) are still there.

THE LOTTERY AMENDMENT, A CLOSE LOOK

By Ronald K. Messer
English Department



This article examines the Constitutional Amendment on the Idaho State Lottery. "SHALL SECTION 20, ARTICLE III, OF THE CONSTITUTION OF THE STATE OF IDAHO BE AMENDED TO PROHIBIT ANY LOTTERY OR GIFT ENTERPRISE EXCEPT: A STATE LOTTERY AUTHORIZED BY THE STATE, OR PARI-MUTUEL BETTING, OR CHARITABLE GAMES OF CHANCE OPERATED BY A CHARITABLE ORGANIZATION FOR CHARITABLE PURPOSES, IF CONDUCTED IN CONFORMITY WITH LAW?"

The wording is misleading.

(1) Those who skimmed it, even if they opposed gambling, were likely to vote yes, thinking they were voting no.

(2) Some may have been led to assume that the law already permitted gambling, and the amendment further suggested this interpretation: "If adopted, this proposed constitution change would prohibit the Legislature or the people from authorizing any game of chance, lottery, gift enterprise or gambling except in three narrow areas."

(3) The phrases "authorized by the state," "in conformity with law," & "a charitable organization for charitable purposes" have such positive connotations that one almost felt guilty voting against such a wonderful thing.

The purpose of this essay is two fold: One, to examine the three 'narrow' areas of the amendment; and Two, to predict the future of gambling in the United States if allowed to continue in its present course.

THREE 'NARROW' AREAS.

1. "A state lottery authorized by the state only if it is conducted in conformity with the law."

We have such a respect for THE LAW that because we assume that whatever is illegal is wrong, we sometimes assume

that whatever is legal is right. That can be destructive. Under our system whatever is not forbidden by law is implicitly permitted by law. Our system works only because the majority of people have inherent moral restraints. That creates a dilemma. Whereas the law may have the power to make an otherwise neutral act immoral if one believes that it is immoral to break the law; the law does not have the power to make something inherently immoral moral.

2. "Pari-mutuel betting, only if enacted into law and conducted in conformity with the law."

'Pari-mutuel' means " a system of betting on races in which those backing the winners divide, in proportion to their wagers, the total amount bet, minus a percentage for the track operators, taxes, etc." In Idaho, pari-mutuel betting is synonymous with horse racing. It can also mean car racing, dog racing, track and field events, etc.

Pari-mutuel betting, like the lottery itself, has no qualifiers except 'if conducted in conformity with the law.' There is no limit to the kinds of races, nor are there guidelines for distribution of funds from betting on races.

3. "Charitable games of chance only if operated by qualified charitable organizations only for the pursuit of charitable purposes and only if conducted in conformity with the law."

If the purpose of the amendment was only to institute a lottery, then why the added phrases: gift enterprises, pari-mutuel betting, and games of chance, terms broad enough to include the resurrection of the titanic. 'Games of chance' are supposedly bound by four walls: (a) charitable games of chance, (b) operated by qualified charitable organizations, (c) for the pursuit of charitable purposes, (d) if conducted in conformity with the law. But those are brittle boundaries, and will, with the first clink of a coin, come tumbling down.

(a) "Charitable games of chance."

There is no such thing as a charitable game of chance.' A game cannot have compassion. It would seem too trivial to mention, except the word implies that it somehow restricts the types of games of chance. But it doesn't.

All games of chance are possible under the amendment as it is presently worded whether blackjack, craps, 21, roulette, slot machines, etc.

(b) "Operated by qualified charitable organizations"

'Organization' can refer to anything. The restricting words are 'qualified' and 'charitable.' But 'qualified' isn't spelled out in the law. It is a whimsical phrase and offers no protection against misconduct. 'Charitable' is equally ambiguous and can be a euphemism for almost anything. And considering that the type of activities are games of chance, we have opened the doors for organized crime to come into Idaho under the auspices of 'charitable organizations.'

(c) "For the pursuit of charitable purposes."

There is no limit to what can be defined as 'charitable purposes.' One such 'charitable purpose' has already been announced--education. But that really isn't the issue. Even if all the 'profit' is given to education, what about the 90% that falls under 'expenses'?

Is it possible that what we think is profit is to those running the games merely overhead, and to them the profit is in what we are told is the overhead. I saw a sign on a marquee in Las Vegas that said '97% return on slots.' Is that 97% return profit or overhead? It depends on point of view. And why wasn't a full public disclosure clause built into the amendment?

(d) "If conducted in conformity with the law."

Here is a paradox of our system. It takes thousands of people to pass a law; it takes only one person to interpret it. No matter how high sounding and moral the legislators are, no matter how great their intent, they too are bound by all the implications of the laws they pass. And if there is even a slight possibility that someone can use it for personal gain, regardless of its consequences for the people of Idaho, then someone at some time will use it.

We must assume for our own protection that whatever is possible under law is also probable, especially if it involves high profit.

In conclusion, the word 'narrow' as used is misleading. The sentence in which it appears is a tautology. It should have read: "If adopted, this proposed constitution change would prohibit the Legislature or the people from authorizing any game of chance, lottery, gift enterprise or gambling unless it is a game of chance, lottery, gift enterprise, or gambling." The scope of the amendment is almost limitless: state lottery, gift enterprise, pari-mutuel betting, games of chance. Each is a bag of poisonous spiders waiting to burst, held only by the thin gossamer called 'charitable.'

A FEW PREDICTIONS

We are joining Lotto to make the lottery more attractive. That means that we are bound by criteria decided on in states other than our own. And as we join even other states such as California and New York and Nevada, we will also inherit their rules, and it will all be in conformity with the law. We can do that without another amendment because of the foresight of those who wrote the original amendment. Therefore, I want to make a few conservative predictions, some of which will occur in the next decade.

The Lottery and Youth

1. The profit margin is too large for the promoters to ignore any age group, particularly the youth. The age when one is able to participate in the lottery will be reduced. But age restrictions are largely ignored anyway if it is profitable: look at the sale of alcohol and drugs to our youth.

2. Gaming will reach into the high schools and become a major pastime for our teenagers. It will consume 50% or more of their income. High school sports will be primary targets. Students will set up their own lotteries. In some inner-city schools a minor mafia will arise patterned after organized crime. Gaming will also reach into the elementary schools.

Just as our youth get together for video parties, they will get together for lotto parties. Gaming software will be rented at Video shops. Gaming will be reflected in the arcade games for youth. Pac Man will be replaced by 'Lotto Man.' A society that can make candy cigarettes, set up condom vending machines in high school lavatories, and permit the sale of drugs to children will have little difficulty encouraging youth to spend money gambling.

The Lottery and High-Tech

3. Japan will play a large role in the future of gambling because gaming technology will require computers of the future, and Japan is on the cutting edge. They may even emerge as a center for world gambling.

4. The lottery will turn to a credit card system, connected to a state and national computer. Atlantic City is already experimenting with it. You will receive advertisements in the mail to buy this or that gaming card just like Visa.

5. The gaming cards will be as international as Visa and others. Soon there will be just one credit card for all purposes, connected to a central brain. Your finger print will eventually replace the card, voice recognition will follow.

6. We will join a full national network, perhaps even international, in which we will have a jackpot of tens of millions of dollars, as well as houses, cars, boats, etc.

7. The lotteries will consolidate, working on the same principle as the Jerry Lewis Telethon, switching from local to national lotteries, available 24 hours a day.

8. The types of gaming will be unlimited: Casino type as well as sports. This will come to Idaho in the next decade because our law accommodates it. But it will eventually be in every state.
9. The games themselves will be very creative. Many will take on harmless sounding names after popular TV game shows; others will be euphemisms so innocent sounding we will allow our children to play. Still others will take on popular games such as monopoly. In addition they will be very high tech: holographic images, holophonic sound. Like special effect, action movies the lottery must be ever more exciting. Technology will play a central role.
10. Unlimited gaming will be available in all homes. It may appear first as a computer program. It will soon be main stream TV. But TV, computers, & telephones will be a single console, with two-way communication. Networking, however, will replace all communication and everything--banks, casinos, movie theaters, shopping centers, religion--will be in our living room in 3-D. Just as you can switch channels now with a remote, you will be able to actually program your TV and even participate in the action.
11. Slot machines will appear in convenience stores, but as money becomes obsolete, laser discs will be used. We will still get the bells and whistles.
12. The first thing you will see in airports when you deplane will be lotto machines. They will also be set up in hotel and motel lobbies, and in many other areas where people pause. You will be offered huge discounts from 'high class' hotels. You may play from your room or from your voice-activated car phone.
13. Most stores will sell lottery tickets. But 'ticket' will be a dead metaphor such as 'dialing' the phone. It will be an electronic blip. 'Lotto Mania' will be the buzz word.

<u>The Lottery and Accompanying Social Problems</u>

14. The time will come when gambling, next to drugs, crime, and sexually transmitted diseases, will be the biggest social evil in the United States. The fault will be placed on the weakness of individuals rather than on the attitude of the government. It will be treated with the same philosophy we treat Aids or Venereal Disease. We won't preach abstinence. We will preach 'Safe Gaming' and 'responsible credit.'
15. A minority will suffer acute addiction. Many, however, will suffer a low simmering addiction. It will first affect the poor; blacks will be particularly vulnerable. It will take the same path, however, as the drug traffic and move through all income levels. Divorces, bankruptcies, abuse, & crime will increase because of money stress.
16. Organized crime will increase in both state and national government, its leaders becoming respected consultants.
17. Computer crime will increase. Crime will be more sophisticated, however. Clumsy criminals will be easier to detect and trace down because their gaming habits will be monitored by police electronically. Local, state, and federal police as well as the IRS will exchange information in a central computer network, and all will monitor the gaming habits of the citizens.
18. A new psychology will emerge to deal with the social problems in the upper middle class. Columns will appear in the tabloids, books will be written with such titles as "I'm Game, You're Game" advising us on how to deal with the stress of gaming. Of course the books will teach us how to keep the game but get rid of the guilt. Stress centers and GA (gaming anonymous) groups will emerge in every city to treat addiction. Detoxification centers will flourish.
19. A new philosophy will emerge based on Heisenberg's uncertainty principle, to show how all of life is based on probability, and gaming is therefore in harmony with cosmic forces.
20. Privacy will be valued by all, but commanded by none. Those who think they have it the most will have it the least. It will simply be given away. Because all machines will be hooked to one central computer, and every time you play, the computer gets more information about your habits. That information will be sold to advertisers.
21. The attitudes of many who opposed the lottery initially will relax. Those who continue to oppose it will be considered fanatics. The Mormon Church, the last opponent, will be the target of a lot of criticism both from within and from without. The prophet will be accused of being out of touch.

The lottery will be promoted in such attractive ways that we will think no more harm of participating in it than we do in participating in Publisher's Clearing House. It will be combined in the advertising practices of fast food and other popular chain stores. It will become difficult, even for the most fastidious, to distinguish between gambling and gaming.

<u>The Lottery and Business</u>

22. Many will pursue gaming as a career, but tens of thousands will pursue it as a serious hobby. It will compete with the stock market and be just as respectable. It will also be represented on Wall Street. Business will compute it into their policies. Banks for instance will give better interest rates to those who control their gambling. Gaming debts accrued or gaming habits will be a factor in all large loans, and many other business transactions.
23. Gaming will be a major employment tool in the state, as well as in other states and in the federal government. It will become bigger than Chrysler or Ford or Sears. In fact it will be the number one source of revenue in every state. It will be impossible to vote it out because so many jobs will depend on it. Few politicians will speak against it.
24. Special charitable causes will raise their funds through the lottery, adding dignity to the epidemic. However, none of the funds will be used to help those who practice 'unsafe gaming.' We will all have to share that burden in taxes.
25. A complex system of laws will emerge to control the lottery, further reducing our freedoms. Some laws may even be biased against those who don't play. Because the gambling establishments will hire thousands, they will be subsidized when improperly managed.
26. The IRS will monitor the lottery closely, and be the first to encourage centralizing the information. They will use it to determine tax assessments and audits.

REMARKS FROM A PARENT OF A GRADUATE

A talk given at the Graduation Banquet
April 1987

By J. Vance Hendricks
Counseling Department

This assignment is awesome and humbling as I try to represent so many people from so many diverse backgrounds--people from Rigby and Roberts, from Richmond and Redlands, from a thousand towns and cities in 50 states and 28 countries, is indeed an impossibility. However, I am certain that the feelings in my heart are shared by many of you.

First to you students, may I tell you how proud we are of you. Cathryn, our graduate this year, is the fourth of our children--Diane's and mine---to graduate from Ricks. In a meeting yesterday in this building, some friends and colleagues were reminiscing and indeed bragging about our children. And someone astutely observed that "my wisdom was in selecting the mother of my children. " I certainly agree with that, It is evident now. Someone has penned this sentiment about students. It's called "Finger Pointing."

College professors were heard to say:
"Such inadequacies in a student are a shame,
But lack of high school preparation is to blame."

While the high school people said:
"Good heavens, what stupidity! The boy acts a fool.
The fault, of course, is the elementary school."

And the elementary school persons would say:
"Would that from such a dunce I might be spared!
The kindergarten teacher sends them up so unprepared."

And the kindergarten people say:
"Never such a lack of training did I see.
What sort of a person can that mother be."

And the mother said:
"You stupid child! But you're not to blame.
Your father's folks were all the same."

Now, that is not the way we feel! We are so proud of you, you graduates, and of what you have accomplished and of what you are accomplishing.

Next, may we as parents of these graduates say "thank you" to the institution which is Ricks College. We are grateful for the mortar and bricks, the equipment, and facilities which are here.

But even beyond this, we are grateful to the Joe Christensens, the Dean Sorensens, and to the 100 other men and women who manage this great enterprise--the administrators of the college.

Thank you Robert Hicks and Bruce Forebush for cleaning the blackboards and polishing the tile; Greg Liggett for keeping us warm in the winter and cool in the summer; Lois Peterson for feeding us; and Lois Pond for registering us. Thank you to each of the 250 of you who are staff that make this thing go.

And especially thank you, Norman Gage and Ron Messer, who taught Susan and inspired her to do graduate work, then accepted her back as a colleague now that she teaches here part-time.

To Donnel Hunter and Boyd Holdaway and Douglas Ladle who leave their families in the summer to teach Discovery. Donnel taught Patty, our second, about courage and sacrifice in a canoe, in a storm, on a lake in Yellowstone. Later, dressed in the white of a temple sealer, he assisted Susan and Dennis to make covenants which have eternal implications.

Thank you Scott Samuelson and Larry Thompson for pushing Cathy toward excellence. She is a Spori Scholar and will continue her studies at BYU.

Thank you Alan Bossard and Richard Stallings for your influence on Keith, who tomorrow will take the last test in his first year at law school; and for your influence on Anne, who will be a freshman at Ricks one year from now. Because of you, she has spent five months as a page in the halls of the congress of this nation. Her life will be forever enriched.

Thank you Nick Baldwin, who with a microphone around your neck, perched on a steel fence in a classroom called "an arena," shouted encouragement to a spindly-legged 13-year-old Chris as he raced down the wall on a young mare. And then you concluded with a hearty, "Great ride, Chris!," the smile on his face bespeaking self-confidence as he grew toward manhood.

Thank you to each of the 274 faculty members at this school for all you have done for us.

Thank you to each of the nine of you who served in our three stake presidencies; to the 36 of you on high councils; to the 99 of you in the 33 bishoprics; to the 45 women in our stake Relief Societies; and the others who are clerks and executive secretaries for the tens-of-thousands of hours of free, loving service to our children who are members of your wards. Thanks to all of you.

As parents, again to you our sons and daughters who are graduating: We know how much you want to be adults in your life, and we are pleased with the responsible action that you have taken. May I suggest to you as Brother Lynn Scoresby at BYU has suggested, that to be an adult, you must be able to do the following three things:

First, you must be able to work at a task without supervision and finish it.

Second, you must be able to live with money in your pocket and not spend it.

And third, you must be able to receive an insult and not seek revenge.

We hope that your experience at Ricks College will help you to be adult in these ways.

And now finally, a moment of reflection. We remember when you were small. We held you on our laps, we read to you from books with bright-colored pictures, and we dreamed of this day.

One of these books told of a land in which lived a man called "Oz," and of a little girl who with three companions trekked down the "yellow-brick-road." Dorothy wanted to go home---back to Kansas; the lion wanted courage; the tin-woodsman, a heart; and the scraggly scarecrow wanted brains. Let me remind you of what he, the scarecrow, learned from the Wizard of Oz.

After Dorothy met the scarecrow and took him down from his pole, they slept, (or rather she did), in a small cottage in the woods--where, in the morning when she awoke, she said, "We must go and search for water. . . to wash my face clean after the dust of the road, and to drink."

"It must be inconvenient to be made of flesh," said the Scarecrow thoughtfully, "for you must sleep, and eat, and drink. However, you have brains, and it is worth a lot of bother to be able to think properly."

When the travelers finally met Oz face to face and presented him with their problem, the Scarecrow said, "But can't you give me brains?," to which Oz replied, "You don't need them. Experience is the only thing that brings knowledge, and the longer you are on earth the more experience you are sure to get."

"That may be true," said Scarecrow, "but I shall be very unhappy until you give me some brains."

"Well," said the false wizard with a sigh, "I'm not much of a magician, but if you will come to me tomorrow, I will stuff your head with brains. You must find out for yourself how to use them, though." (From The Wizard of Oz)

It is our prayer that you will learn for yourself how to use the brains that have been enhanced at this "Emerald City" called Ricks from "Oz-like" people you have known here.

In the name of Jesus Christ, amen.

BEFORE ZION

By Richard G. Graham

Physics Department

An enterprise method to help bridge the gap between businesses prevalent today and those of the anticipated Zion is briefly described.

Records and history describing Zion are limited but a general outline of methods and attitudes can be drawn. Enterprise is funded from a general reserve of funds and resources. A person studies out an enterprise project in sufficient detail for managers of a reserve to make an accurate evaluation. Help and resources are provided to bring the project into operation. After the project has stabilized, surpluses above the individual's actual needs are returned to the reserve. The system flourishes because of complete flexibility of operational methods across the entire spectrum of individual interests. The major incentive is "virtue is its own reward" or the sheer joy of doing a job well, just to do it well.

Some major problems facing young families or individuals today will be presented. Solutions patterned after the stewardship in Zion will be suggested that could be adopted now.

First there is the backwards timing of wages. The financial needs of a family with infants to teenagers are greater than at any other time. Their wages, however, are primarily based on neophyte skills and experiences. Second is the separation of parents from each other and children because of travel or job isolation. This has become such a norm of present life that it is hard to think of (or want) alternatives.

Suppose the following points:

1. Parents with young families have lots of energy and determination.
2. Cottage or home type developing, manufacturing and processing are available. The work and processing are mostly done by machinery that can be monitored and cared for it by either parent.
3. The cost of equipment and backing is provided from a fund maintained by eight or ten community financial backers.
4. The family gets most of the profit from production so its financial needs are really met.
5. They provide what the equipment and processing need most: time, care and availability.
6. The backers receive a moderate but sufficient return.
7. Buildings and land are a minimum investment.

As an example, suppose that a couple are advised that there is a need for oak bookcases of a certain size. They find that several groups in their area are making oak bookcases but only produce a few of this size. They are advised to talk with the area distributor that markets bookcases. The distributor is interested and can probably market all that this couple can make. More visits are made by the couple to the other groups going over methods, equipment, supplies, housing, safety, noise, costs and bottom-line profit. At this point this project still fits in with their goals in life.

Several sessions are spent with the managers of a reserve fund in their community discussing setup and operating costs. Their initial request is modified: it is tighter and more comprehensive. Some aspects that would have been nice but not really necessary have been cut. Others, such as minimum living expenses through setup and start up, have been added.

Equipment is ordered and the work area laid out. Time is spent with one of the bookcase makers zeroing in on operational details. A few practice runs make the sight, sound and feel of the equipment comfortable. While the overall success of this project can not be guaranteed, the couple have the assurance that comes from being in control of their part of the project. Careful investigation and planning bring risk to an acceptable minimum.

The couple live in a modest home in a commercially zoned area that allows limited home manufacturing. The garage is chosen as the work place (a time-honored practice) to keep overhead costs to the minimum. Moderate rewiring, lighting, heating, equipment sound suppression, dust control, benches and shelving are adequate preparation.

After two weeks their operation is near the planned production and quality levels. The distributor can rely on specific production goals. The work is tiring and sometimes monotonous. Switching tasks and trading each other off make it tolerable even at first and quite acceptable later.

Operating at the goal levels with the majority of the profit going to the couple puts them on a solid financial budget. This is their equipment and product. They immediately sense when servicing is needed and respond with quality. This care for the equipment and skilled handling results in a product that is worth its price. Having the major part of the profit where it is needed rather than tied up in lands and buildings is a major advantage. Adding the satisfactions of control and quality work to an adequate income are very powerful and stabilizing incentives.

Other major advantages are proximity of family members. Unexpected needs that need extra caring can be easily met by adjusting the schedule to work a little later that day or earlier the next morning. Regular events that need to be shared can be accommodated similarly. This control allows a warmth to be radiated to the family (and others) that the work is important and so are they. Both can receive quality care. Growing up immersed in the work-life of such parents is of immense help in children becoming caring, capable and assured.

While woodwork was used an example, all the ranges of services and skills could be accommodated. Accounting, secretarial, delivery, assembly, finishing, sales, distributing, etc. could all be set up along the same principles: an individual or parent serving a number of users: large enough number to provide financial support but small enough to provide prompt, responsive service. These would be like credit union at their best in attitude and innovation but with a different direction.

Where assembly requires several people and more extensive equipment, several units could be clustered together. Service such as secretarial, printing, general machine shop work

could be shared. This would also be comfortable setting for people who like company.

The reserve pool would be one of several in the community. The initial start would be by pooling funds. The members would have to be of great moral quality and courage: helping others get this better start would require an initial sacrifice. Rather than unlimited accumulating, a limit to actual needs is self-imposed. Satisfaction would come from seeing resources used equitably.

About ten projects would be funded at any given time. Losses from unplanned disruptions would be averaged out by the gains from the others.

Implicit in this description are individuals who can be relied on. They get the work done, take care of the equipment, order supplies, do quality work, etc. In short, they are self-starters, new on the scene, who have little capital and skills. For people who are not as reliable, a more traditional structure would still be needed: structured jobs and management. Completion of assigned tasks would provide them with enough support to meet their needs (like everyone else.) The reward passed up is that of independence of action.

WHO'S GOING TO FIX YOUR CAR?

By Dondavid S. Powell

Automotive Department

You have been scrimping, saving, and planning, putting off buying your dream car until you have paid off enough other things to be able to afford the monthly payments your new car will cost. Finally you feel that you are ready to take the plunge. You then spend hours/days/weeks/months planning, test-driving, then finally buying this car of your dreams. You sign the papers and proudly take delivery on one of America's most recognized symbols of status and freedom. Unfortunately, more often than not, when your new car requires repairs, your dream becomes a nightmare!

The average cost of a new car today is around $15,500, which is truly a bargain considering the explosion in technology that has taken place in the automotive industry during the past decade. Modern cars are more dependable and trouble free than they have ever been, with the average car being driven over a hundred thousand miles before requiring major repair. During these more than three trips around the world, it has only been tuned up four times, usually only has new tires put on twice, and if properly maintained has had the oil changed about 30 times. The same type of car only a decade ago would have burned nearly 8500 gallons of gasoline during this time, but today's car will use much less than half that amount.

New cars today have a dazzling array of new technology. They not only have computers that monitor fuel and emission controls, but now have computer multiplexing. As many as eight on-board computers communicate with each other, controlling transmission shift points, vehicle ride and stability, climate controls, lighting, vehicle braking, four-wheel steering, instrument panel functions, and traction. These innovations have given us more dependable cold starts, better performance and fuel economy, and have reduced engine related emissions by 900%. Within the next five years, computers will also control electronic power steering, anti-spin acceleration systems, satellite linked electronic navigation and information systems, and even more exotic engine controls. Today's cars have already eliminated the carburetor, distributor, and many support systems. Tomorrow's will eliminate the camshaft and conventional valve train, replacing them with computer controlled electric solenoids that will be able to control valve timing to match engine loads, speeds, and fuel system demands, further increasing performance and driveability while squeezing even more mileage from a gallon of gasoline. Only a few years ago cars that achieved 25 miles per gallon fuel economy were unusual, but today one model car advertises 65 mpg highway and 55 mpg city.

Today's technology is not without limitations. The largest limiting factor facing automobile manufacturers is not where technology can lead, but how it can be maintained. In 1979 if a service technician could read and understand 5000 pages of printed information he could repair any problem on any passenger vehicle on the road. To have that same ability in 1989, he would have to be able to read and understand 650,000 pages of written information.

Because of the huge demand technology has placed on the repair technician, most automotive repair facilities have undergone significant changes. Many shops that used to offer general automotive repair have either had to specialize in one or two areas of repair, or have closed down because they did not have the technological expertise required to service today's cars. Mechanics that "came up through the ranks" by learning on the job have found that knowledge and procedures that have applied to automobile repair for the past 75 years are now obsolete. Consequently, many mechanics are retiring early or leaving the trade and are not being replaced by new ones.

The unfilled need of entrants into the automotive repair field is an area of major concern to automobile manufacturers. As more skilled mechanics leave the trade, businesses either have to hire unskilled mechanics or close their doors. During the past ten years 25% of the nations new car dealerships have closed down or merged with other dealers in order to meet customer demands. Service stations, once the mainstay of the repair industry, are moving away from car repair to convenience store formats, further compounding the problem of available repair facilities. In 1980 there were 250,000 full service stations in operation in America, each with an average of 2.5 bays dedicated to the repair of automobiles. Now there are only 235,000 service bays nationally, for a loss of over 400,000 service jobs per year. In fact, the only types of repair facilities that have remained stable and even shown a modest growth have been the independent repair shops and quick service specialty shops such as Midas, Mr. Brake, Jiffy-Lube, etc.

Industry is frantically trying to improve the training of technicians by improving dealer incentives for service training, requiring trained technicians before delivery of high technology cars, and by offering scholarships to those interested in pursuing a career in the automobile repair field. However, it is becoming increasingly difficult to find those interested in repairing automobiles. Young people do not develop an interest in cars like they did in the past when they could repair and service the car they inherited from their parents or bought to fix up and drive. There is also still a negative image conveyed to those who are considering becoming automotive repair technicians. People still view mechanics as "greasy garage gorillas" that work on cars because they haven't the intelligence or drive to become "something useful." Another major deterrent is that even though someone devotes a minimum of two years to technical training, during which he has invested over $5000 in repair tools, plus tuition, books, housing, and other related educational expenses, he finds that upon graduation he starts at "job entry"

level wages of $3.40 per hour (or the prevailing minimum wage for the area), and finds that he can't support a family or even himself on less than $600 per month. Consequently he leaves the automotive field to enter other vocational fields for a much higher wage. It's ironic that high school graduates can go to work immediately in a lumber mill or other areas of unskilled labor and start at $7.50 per hour or more.

Part of the reason for low starting pay is the pay structure of traditional automotive repair businesses. Independent repair shops generally pay skilled line mechanics from 50 to 60% of their flat-rate labor charge, which in this area is around $30 per hour. Most dealerships pay their mechanics considerably less, some as little as 20%, even though their flat-rate charges are generally higher than those of independent shops. Consequently, good mechanics usually leave the dealerships after a few years and move to independent shops where they can make a better living. As a result, less skilled mechanics often work in dealerships, sometimes resulting in lesser quality craftsmanship on cars taken to dealers for service and repair. Some dealerships are beginning to understand the impact this policy is having on their repeat customer clientele, and are increasing wages and benefits to retain their skilled service technicians in order to provide more reliable service for their customers. But, unfortunately, this policy is slow to catch on. In order to pay technicians enough to prevent their leaving the industry, dealerships and shops will have to increase their charges to the customers.

As a result of the lag between technology and repair skills, compounded by the dropout rate of service facilities, the future of the automotive consumer looks bleak. In 1979 the average major tune-up cost the customer approximately $150. In 1989 on a fuel-injected, computer controlled car, a comparable tune-up runs $750. In 1979 a major air-conditioner service and overhaul ran $250. In 1989 in many of the larger cities, air conditioner repairs run as high as $1250. In 1979 an overhaul on a THM 350 transmission averaged $550. Today an overhaul on a THM 700-4R will average $1500, and can run as high as $2200. In spite of these rising costs, many of the highly respected service shops already have a two to three week waiting list of customers wanting repairs because they know the work will be done right the first time at a reasonable (not cheap, but reasonable) price. As other repair shops close down, an even greater demand will be placed on these qualified shops, which will result in higher charges and longer waiting lists. Less skilled shops will not find that the solution to poor quality workmanship is lower prices. Customer satisfaction can not be bought. Successful businesses have found that quality is twice as important to the customer as price.

The key to better quality is better trained technicians. Unfortunately this is not easily achieved. Training institutions have consistently found that entering students are less prepared to learn than ever before. Many of them can't read or express themselves. Others don't understand the basic concepts of mathematics or logical reasoning. Many students must take remedial reading and math classes before they can be taught electrical theory, Ohm's law, or even how to interpret repair procedures or wiring diagrams. Today's students are working with space-age technology. They have to use computers to diagnose system failures, yet they don't know how to read the directions on how to hook up the diagnostic equipment. They have to find repair information by reviewing thousands of pages of information located on CD-ROM computerized information systems, yet they often can't follow the logic of the diagnostic steps involved. Is it any wonder the car may not be repaired correctly the first time?

As car repair becomes even more technologically advanced, the demand for qualified technicians will increase even further. Because of the shortage of mechanics, those highly skilled in the areas of electrical and emissions related systems diagnosis will be highly paid professionals demanding and receiving top wages. The San Jose "Sun" recently published a help-wanted Ad seeking to fill a position for a skilled tune-up technician with his own tools and five years experience in the trade starting at $1000 a week plus commission. These will become more common as the need continues to exceed the supply of qualified mechanics.

Shops that want to be successful must meet customer expectations, and customers will pay for excellence. It isn't difficult to find someone to work on your car. But who are you going to find to FIX it?

Teaching and Education

SCHOOLS, EDUCATION, AND CURRICULUM: A PERSONAL BELIEF

By John H. Thompson
Family Science Department

I believe that education is an on-going process through which an individual forms meaningful pictures of what for him is truth and reality, through which he finds his role in life, and through which he can unfold toward his limitless potential. Education takes place constantly throughout his life. It includes the adjustment and adaptation of man to all of his environment. in this broad sense, all men are the teachers of every other man. Schools were developed to facilitate, accelerate, and control the education of the young. We are in an era when continuing formal education is becoming more and more a necessity.

The curriculum is the formal plan for learning which is the business of the schools. The curriculum comprehends the idiographic dimensions of the learners, the nomothetic dimensions of the society, and the available knowledge (content) of the disciplines.

Content:

I believe that man has ever been engaged in a search to know "truth" and "reality." He has devised and used tools to aid his search. Perhaps all of these tools can be classified as either philosophy, science, or religion. In his need for organization and relevant relationships, man has structured, categorized, and catalogued the "bits" of "truth" he has "discovered" in his quest. These structures of classified knowledge are known as disciplines.

I am convinced that learning must be facilitated so that each learner can rapidly be brought into possession of the accumulated knowledge of man. This does not mean that I believe each individual must learn all of everything there is to know. Rather, I believe that each learner, in the context of his interests, abilities, goals, should be brought as rapidly as possible into possession of the knowledge that has been accumulated in the areas of his interests, needs, and goals. However, I believe that there are certain general inter-discipline areas such as social science with which all should become conversant in order to function as human beings in a social context.

The young need direction and guidance. Great waste would result from allowing each person to "discover" what he "needs" to learn. Therefore, I find myself in harmony with the ideas of the curriculum consisting of structured content divided into basic ideas or conceptual schemes, and of guiding the learn-

er into a "personal" discovery of these basic ideas.

Learning:

The needs of each individual can be placed into a heirarchy of priority, and underlying needs must be satisfied before attention can be focused on the next higher order of needs.

Learning takes place best in a setting of relevancy, that is, learning is facilitated by starting from where the learner is and then proceeding into associated areas of knowledge unknown to him.

There are stages of physical and emotional development. Perhaps there are periods of development during which certain things are best learned. It is well that much research is presently directed at isolating these imprinting periods.

With all the attention being focused on the process of learning, it is apparent we are groping, that there is a lack of consensus.

I find learning theory psychologists pitted against other learning theory psychologists. Cognitive psychologists strive against cognitive psychologists. Both groups argue with each other. All of this dialogue is meaningful and I believe that it will lead to more and more refinement and understanding of what takes place when a person "learns." But, for me it is apparent that we, at this point, are very much in the dark.

Society

It is apparent in the face of rapid technological advancement that man is changing his "environment" so fast that unless some kind of balance or control of this change is developed, society as we know it will disappear. I know some people would argue, existentially. So what, whatever emerges will emerge. But I, at this point, am convinced that there are many excellent qualities of our society which need perpetuating.

I also believe that though we artificially change man's environment, man himself remains much the same. His nature, meaning his basic needs, his self-perception, does not change, or at least changes very slowly. So it seems to me that some balancing factor in the emerging curricula must be centered in the most stable component of the curriculum, man himself.

I am for change, not indiscriminate change, but controlled change, change which enhances, enriches, and releases man. I do not believe that we have "arrived." There is room for improvement.

PHILOSOPHY

In concluding this brief statement of some of my beliefs about curriculum, I find it important to set forth some of my biases regarding the nature of reality and truth. I find it necessary to divide truth into two categories: ultimate truth and operational truth.

I am convinced that there is eternal truth, which was, is, and will be. Eternal truth is in complete harmony with itself. When men isolate a portion or portions of eternal truth they may categorize and catalogue it and from these structures, make projections of reality, and they may find what seems to be contradictions. To me, these contradictions are evidence of inadequate investigation, misunderstanding, or even false premises.

I conceive man to be in a position of groping through a vast, thick cloud. The cloud hovers dark and close. Truth and reality are obscure. Sometimes a little of the fog lifts, momentarily, for some individual. Perhaps through reasoning he discovers a truth, or through investigation and experimentation a glimpse of truth is obtained. But such truths are ever subject to the analysis and understanding (or misunderstanding) of man. The pictures they present are never final nor complete. Each picture is extended, modified, sometimes completely changed as relevant new truths are discovered. Through it all, the whole truth remains unseen, unchanged, still obscure.

A problem with my viewpoint of truth is that man can only operate with his determinations of what the "real" truth is. Since he does not see, comprehend, nor have available the whole truth, he must operate with that which he does see and comprehend. It is in this operational sense that groping mankind describes truth and reality as being constantly in flux. It is also unfortunate to me that I must apply the same label to the vacillating partial "truths" which man isolates and the whole truth which, for me, exists regardless of the limitations of man.

A Bagful of Ezekiel . . . to Make Teaching Memorable

by Dianne Dibb Forbis
English Department

The Ezekiel zeal is with me.

I pull a quart cardboard milk carton out of the bag. I take the clear, small glass out of the bag.

"Okay, so we've talked about how members of the Church of Jesus Christ of Latter-day Saints are watched by the world. Some of our behavioral standards are very well known, very widely known. We're labelled, aren't we?"

Nods of assent and murmurs of "We sure are!" come from members of the relief society class.

"What is our real label?"

A number of good responses. Someone finally touches upon the fact that we take upon us the name of Jesus Christ when we're baptized.

Now to the milk carton. "You're probably wondering why I brought this to class. Well, I'd like someone to pour a glass. I hand the glass and milk carton to a sister in the front row and ask her to stand and do the deed.

Soft gasps. Laughter.

The glass is now filled with a bright red liquid. It's tomato juice! We talk about how when something (or someone) is clearly labelled it is startling--and somewhat disturbing--when the expected truth of the label is not verified. Comments soon come to bring out the idea of "where much is given, much is expected."

By the time the lesson ends, I've pulled from my Ezekiel bag a few more unlikely items that work smoothly in graphically expressing the subject at hand.

Yes, my "Ezekiel bag." The Prophet Ezekiel, prompted and directed by Jehovah, learned and taught by means of unusual, unexpected, and unforgettable teaching devices.

Talk about a teacher training manual! Turn to the Book of the Prophet Ezekiel. Rich imagery and powerful allegories convey the prophecies of doom to Judah and Jerusalem. They express judgements against foreign nations. They proclaim assurances of future restoration to Ezekiel's people, nation, and to the holy temple.

A need to teach the people that Jerusalem will be destroyed? Here's the method: Ezekiel takes a tile and draws upon it a depiction of Jerusalem. He sets items around that tile to represent a siege. He does other things to bring forth realization of what will be involved. He takes positions, as directed and in bonds, on opposite sides of the little city setup. This gives indication of the years of iniquity in Israel and the years of iniquity in Judah. (See Ezekiel 4.)

How could it truly and without question be made known

that the Children of Israel would be scattered? Ezekiel takes a razor and shaves his head and beard. The hairs represent the Lord's covenant people. Ezekiel weighs the hair he has cut off. The gesture brings to mind divine justice. A third of the hair is burned, a third is cut up with a knife, a third is scattered to the wind. According to direction, Ezekiel allows a few of the hairs to stick in the weave of his clothing. (See Ezekiel 5.)

And how will the Lord teach Ezekiel about the reality of the resurrection, while at the same time reminding him about the inevitability of the promised restoration of Israel? The bones. The valley of the dry bones. Ezekiel watches the scattered bones come together. Then the sinews are layered on, then the skin is put in place. (See Ezekiel 37.) I doubt that Ezekiel dozed off or had his mind wandering during this presentation.

Also recorded in chapter 37 is the information given about the stick of Judah (The Bible) and the stick of Joseph (The Book of Mormon). Was Ezekiel really handling facsimilies of the sticks? Maybe. In telling Ezekiel to transmit the information about these records, the Lord says: "And the sticks whereon thou writest shall be in thine hand before their eyes. " (Ezekiel 37:20) There they are. Look at them! Visual aids are valuable.

Knowing that Jehovah worked with Ezekiel to present information and instruction in terms of creeping things, a great eagle, wheels, etc., has inspired me to go for the eye-opener when explaining a concept. I've used such items as a rock, a watermelon, a rubber alligator, a dead potted plant in classroom instruction. And I'm not talking primary classes here. . .I'm speaking of gospel doctrine and relief society classes.

Courses on teaching theory emphasize that teaching will become more memorable if the learner is required to use more than just his sense of hearing. Require that class member to look at something (sense of sight). Maybe have him/her touch something (sense of touch). Stop right there. Stirring to action just those three senses--without adding in smell and taste--can really work to cement the learning.

Ezekiel did a lot of seeing and touching as he learned in depth about how the future preferred building of the temple should be. He was escorted in vision through the temple-to-be. He, in fact, was escorted by a man who carried a measuring stick and noted exact specifications. (See Ezekiel chapters 40 through 46.) This was no mere verbal description. Ezekiel got a V.I.P. tour. I remember the time an adult group groaned about having to "take a tour." The Church history lesson was about the first mission to the Lamanites. Luckily, our classroom facility allowed for the moving-around activity. I had set up two groups of chairs at opposite ends of the cultural hall where we met. At a point inbetween was a small cluster of chairs with a sign nearby on the wall that said "Northeastern Ohio."

Class members seated themselves in the part of the hall where we usually held class. Before we began I gave name badges to a couple of the more adventurous spirits in the group. They were now identified as "Sidney Rigdon" and "Lyman Wight." I told them to go sit on the chairs by the "Northeastern Ohio" sign. I got some additional unlabeled volunteers to go to Ohio.

Well, the whole rest of the class became Parley P. Pratt, Oliver Cowdrey, Ziba Peterson, and Peter Whitmer, Jun. Yes, several people groaned about having to move. But soon a few were smiling. We left our original location, which I now revealed as being Fayette, New York. We trekked over to Ohio and converted many people there. We then traveled on to Missouri--which was the other setup of chairs at the far end of the hall. We talked about happenings along the way.

So was this a silly little-children thing to do? I think not. For in subsequent lessons that referred back to the missionary lesson, I was continually impressed with the excellent degree of recall manifest by so many people in the class. Persons who rarely answered a question or made a comment were bringing up facts and related reasonings that had to do with our trip from New York to Missouri.

Usually what I have a student look at and touch is not the real thing we're talking about. In most cases it's symbolic of a concept. Occasionally the thing to be seen and touched is symbolic of some other entirely different tangible thing.

I was never overwhelmed by the scale of the final destruction of the Nephites until I bought 10,000 toothpicks and dumped them into a very big bowl. I took the bowl of toothpicks to class and passed it around. I pointed out that the final demise of the Nephite civilization (if represented by one toothpick per person) would be symbolized by not just this large bowlful of toothpicks--but by twenty-three like bowls filled full. I crowded onto the chalkboard the outline shapes of twenty-two more bowls. This terrible destruction of human life happened in one battle! A comparison: I put stars on fourteen of the bowl shapes on the board. During five years of U. S. Civil War combat 140,000 died.

The words of Mormon became more sobering and sad and tragic than they had seemed in previous readings: "O ye fair ones, how could ye have departed from the ways of the Lord! O ye fair ones, how could ye have rejected that Jesus who stood with open arms to receive you! Behold, if ye had not done this, ye would not have fallen. But behold, ye are fallen, and I mourn your loss." (Mormon 6:17, 18)

The most memorable lessons happen when, with prayer and inspiration, a teacher is able to successfully get the learner to involve all of his/her senses: hearing, seeing, touching, smelling, tasting. How does a teacher choreograph a happening that waltzes beyond the hearing, seeing, touching territories? It's just not convenient nor appropriate to plan on having something for everyone to ingest each class period.

Thankfully, the senses of smell and taste are very well used by most people. Each individual, therefore, has vast data bases of olfactory and eating facts stored in the cerebrum and psyche. Anything that evokes remembrances of smell and/or taste experiences will translate into a mini-rerun of the desired experience in relation to stimuli at hand.

So there is terrific impact in using an edible item as a visual aid in front of the class. There's power in speaking with metaphors that have properties of known or easily imagined smell and taste.

The Old Testament is rich in words and phrases that play upon the senses of smell and taste. A few of the Ezekiel morsels are: honey for sweetness, bake it with dung, abominable flesh in my mouth, fathers shall eat the sons, evil arrows of famine, dead carcasses, the city is the cauldron and we be the flesh.

The Lord sometimes taught lessons wherein he required the learner to involve all five senses--and yet not actually end up doing any eating. A classic example is when the Lord wanted Peter to understand once and for all that the Gospel should, indeed, be taken to the Gentiles. He didn't just sternly state what was to be understood. Peter was shown animals that were "unclean" in terms of the Jewish dietary laws. He was told to rise up and kill and eat those animals. Peter refused saying they were unclean. The Lord proclaimed: "What God hath cleansed, that call not thou common." (See Acts 10:9-28.)

But sometimes the Lord's teaching went so far as to require actual eating. I love the whole-hearted (all-senses-involved) way Ezekiel was asked to accept his assignment to take the word of the Lord to Israel. There was no question about it being a complete acceptance, for Ezekiel ate a scroll that symbolized his call. (See Ezekiel chapters 2 and 3.) We have the similar

total assimilation of a call with John the Revelator. (See comment on this in Doctrine and Covenants 77:14.)

It takes only a little prayer, pondering, and preparation to incorporate into a lession something that has to do with smelling or eating.

Another relief society lesson. The subject was the importance of reading the scriptures. I had on display a bowlful of gorgeous fruit: shiny crisp-looking apple; beautiful and firm banana; sweet, succulent grapes; luscious peach. "Are these things capable of providing nourishment and bringing enjoyment to you and your family?" Of course.

Now out of my bag I pull another bowl of fruit (this is what took the weeks-in-advance preparation): a dry, dented apple; a black shrivelled banana; rotting grapes; and a dark bruised peach. I pass the bowl around. Get a close look; smell the odors of deterioration. "How about eating these? How about feeding these to your family?"

We discuss the type of foods we allow our spirits to eat. Is it food fit for the garbage? Then we talk of how maybe we are more particular about our physical food than about our spiritual food. Our physical bodies desire good meals and we want meals and we want meals daily. How can we stimulate healthy spiritual appetites? Good discussion ensues.

We didn't eat any of the fruit, but the lesson left us full.

Thanks, Ezekiel.

Thanks for following directions to learn and teach in mind-boggling ways. Thanks for writing it all down.

Here was a prophet who was technically in bondage. He was one of those who arrived in Babylon in 598 B. C.

He was stuck in Babylon. But through the Spirit, Ezekiel did not stay put. He soared and rode some mighty winds of learning.

And I read all about it. And I didn't understand it all. But a fresh breeze stirred my imagination.

Five Honorable Summers

By Dr. Victor G. Forsnes
Engineering Department

June 1985 began the first Ricks College Summer Honors Institute for academically talented high-school juniors. Twenty students from the western United States and from Alberta arrived at the campus on the first day of the second session of summer school to initiate a successful experiment in enhanced educational opportunity. These students, and their eighty successors, were selected from a much larger pool of applicants, where the screening apparatus included:

(1) high school grades in classes of substance and breadth;
(2) national aptitude and achievement test scores;
(3) letters of recommendation from high school teachers and administrators;
(4) two student essays, where applicants were asked to respond at length and in depth to the topics, "A Personal Assessment of the Strengths and Weaknesses of Secondary Education in my Home State," and "How Participation in the Summer Honors Institute Could Affect My Ability to Influence Others";
(5) demography, where a complement between large school-small school, urban area-rural area, and Mormon majority-Mormon minority high school residence was sought;
(6) an equal number of males and females;
(7) breadth of extracurricular and community service involvement; and
(8) qualification for admission to a Church school.

Additionally, the letters of recommendation, essays, and accompanying biographical information were assessed for evidence of the ability to *cooperate* with other students rather than to just *compete* for grades and honors. Students who had been tutors were given increased sanction. The average grade-point-average of the first participants was in excess of 3.95; national aptitude and achievement test scores indicated typical abilities in the high ninety-percentile range. In some occasions, a "marginal" student, who had the desire and motivation to participate and seemed to be able to accept assistance, was selected for participation.

The students selected in 1984 and in the subsequent four summers were awarded scholarships which included tuition and five weeks of room and board. Books, supplies and travel expenses were the responsibility of the families. The students were housed in regular campus dorms, ate meals in college dining halls, attended student wards and accepted Church service assignments, were accepted as regular college students with full access to campus facilities, and were allowed to take one additional summer session class. About one-half of the group decided to do so.

The curriculum for the students was designed about a year earlier, when a funding proposal for the institute was written and accepted. Each morning, the students met with Dr. Larry Thompson in the Letters 201: Intellectual Heritage class. The Intellectual Heritage course had been designed by Bruce Hafen, Larry Thompson, Joe Romney, Carolyn Roberts, Richard Graham and Victor Forsnes during a two-year period from 1982-84. The objectives of the class were to study five "big questions" which are the mainstream of the great intellectual conversation of the western world, viz.,

(1) the God/man relationship issue, where the governing question was "How has the type of God in which man has believed affected his life?"
(2) freedom, with the accompanying question, "What is the relationship between personal freedom and individual moral responsibility?"
(3) the social contract, or, "How have political theories and organizations affected mankind?"
(4) epistemology, "In what ways do our models of 'know ing' affect how we live?"
(5) aesthetics, "How do the arts of a society reveal its values?"

The issue questions were given a framework via student readings in a marvelously lucid condensed western civilization text, A Brief History of the Western World, by Thomas H. Greer. Additional readings from the classical literature which addressed the issue questions were assigned. In the intervening years of the institute, students have read from sources as diverse as *The Koran*, a social history of Christianity, *The Inferno*, a history of Christian art, Greek plays, Erasmus' *Ten Colloquies* and several anthologies of period literature. No effort was made to diffuse the course content nor slow the pace for these students, soon to enter their senior year of high school.

Each afternoon the students met from one to three hours in a seminar under the direction of a Ricks College faculty member. The seminars were generally grouped into social science, arts and letters, natural science, physical science, and technology/business. Seminar leaders were informed of the "issue questions" and asked to attempt to include these major concerns in

their area of personal expertise and interest presented in their seminars. An invitation to the faculty to prepare and present a seminar has each year brought many more offers to participate than the available twenty-five seminar opportunities. My strong personal impression from these seminars is that there exists at Ricks College a very talented faculty, who exhibit considerable depth in scholarship, who are extremely anxious and willing to share their best thoughts, and who demonstrate a sincere desire to help a beginning student, without imposing upon the student a professorial ego-trip. A very capable example of the best of gospel-influenced scholarship is among us!

Seminar topics over the five years of the institute have been diverse and stimulating: Gordon Timothy's Free Will and Determinism; Lou Buhrley's Human Anatomy (complete with an afternoon in the cadaver lab); Jack Reinwand's Urban Terrorism and Street Gangs; Merle Fisher's Scientific Method (complete with Fisheresque graphic demonstrations); Allen Wilson's New Crop Varieties and Propagation Techniques; Jerry Hansen's Literary Analysis of the Old Testament; Ed Malstrom's Biology of Behavior (complete with trays of human and animal brains); Bron Ingoldsby's Psychobiology (where the kids will never forget the definition of Machismo); Glade Merrill's Existentialism; Neal Kramer's Islamic Verses and Religious Toleration; Steve Hansen's Catastrophism, Uniformitarianism and Evolution; Ed Williams' Earthquake Prediction; Steve Terry's Mathematical Techniques for Decision-Making; Mel Eckman's CAD-CAM (where the kids were producing computer-aided drawings after about an hour); and a host of other equally diverse and exciting demonstrations of academic competence.

The institute students wrote an essay on each seminar, relating the seminar topics to the content of the Intellectual Heritage Class and the five issue questions. Typical essays were three or four typewritten pages long. The essays were read at regular intervals by the institute director (who was usually an observer at the afternoon seminars). Comments were made about content, logic, synthesis of thought and essential grasp of the seminar issues, and correct grammar, logic and structure were demanded for each paper. If substantial improvements were possible for any paper, students were asked to "resubmit" an edited version of the essay. Students often submitted three or more versions of a paper until an articulate response to the seminar was produced. To the interested observer, this means that students wrote 20-25 papers in five weeks with several editorial revisions of many papers. To facilitate student-written responses, a word-processing seminar was given the second day of the seminar. It was a delight to watch Rick Davis teach, in about an hour-and-a-half, twenty bright and motivated students word-processing skills (on PFS ProWrite) sufficient to begin writing papers that evening. Many of the students had computer experience, but few had any familiarity with the word processing software selected for student use. There was little doubt remaining after the experience that word-processing skills substantially enhanced student ability to write and edit essays where opportunity to improve written expression was more pleasure than pain.

Built into the curriculum were other experiences designed to enhance cooperation, build group identity and afford breadth of experience--a weekend trip to Badger Creek (where the "full treatment" was offered to students by the energetic staff of the Outdoor Education Center); to the Playmill Theatre (avoiding the melodramas for the more serious productions); to the planetarium and to the observatory (for one of Ellis Miller's "stellar" performances); to the demonstration garden shelter area for Gordon Hoagland's dutch oven chicken feast; to an early morning clandestine service project weeding a cornpatch (it was early morning, a 4th of July, and we sang American and Canadian patriotic hymns, and then ate 16,000 pancakes); to evening yoghurt-and-video firesides (where videos illustrative of the issue concepts were viewed); to fireside presentations (where the institute students presented a sensitive and inspirational fireside rather than acting as passive observers); to a backyard woodsplitting, intellectual "bull-session" and ice-cream-sundae activity.

As a conclusion to this narrative and structural explanation, several observations are evident to me:

(1) Bright students profit from an enriched and intensive academic experience where they are offered the best which can be offered by Ricks College. The student gains include grasp and synthesis of great ideas of our culture and civilization; integration and reinforcement of high school educational experiences; realization that there is "much more out there" than they ever before realized; that there are other people "like themselves" who are interested in matters of the mind; that cooperation produces benefits which far outweigh competition; that specialization at an early age is a barrier to "cultural literacy" and a plausible cause for the "closing of the American mind"; that academic ability and talent can be focused on and transferred to a broad variety of disciplines, if a coherent structure for the disciplinary approach is revealed to the student; that scholarship is a gospel imperative, not an adjunct to spirituality nor a detour or side road on the mortal probationary experience.

(2) Ricks College currently has the ability to influence the best young minds in the Church. In an open-enrollment institution, where much attention and resource are directed toward remediation and diffuse curricular offerings, there is a remarkable corps of faculty with depth of thought and enthusiasm prepared and anxious to "conquer the summits yet ahead." A substantial part of the effectiveness of the honors institute can be reproduced for the students regularly in attendance here. So much depends upon designed intent of the quality of education we offer. We can deliver much more to students if we do not unconsciously perceive nonexistent limitations and constraints upon the abilities, motivations and capacities of the students in our daily classroom settings.

(3) There is a way to improve the quality of education which is offered to our students, and the students are anxious for the challenge. The incentives offered by the institute were essentially the thrills of discovery, learning, improvement, progress and mutual growth. The strongest correlates in improvement are curriculum design, common objectives of all facets of the educational spectrum (from Plato to religious activities to pulling weeds) and a faculty dedicated to the same educational outcomes (there is a strong temptation to launch here into a "if ye are not one, ye are not mine"homily).

Yes, the summers were honorable, per the Oxford English Dictionary citations of distinction, civility, attainment, and merit. A deep current of personally sensing that "this is what I always wanted my education to be" became my wellspring of delight and satisfaction. And the satisfaction waned without a sense of loss as I contemplated new possibilities for improvement, progress, and a better institute next time. Education in its purest sense has a way of producing an effect like that!

Odyssey of a Fledgling Military Historian

By Andrew C. Skinner
History Department

On a calm spring afternoon in May 1962--far from the thunder of cannon and the cry of battle--General of the Army, Douglas MacArthur, received the highest award that the United States Military Academy bestows on its own, the Thayer Medal. That morning as "Old Mac" was leaving his hotel to go to the ceremony, a doorman asked, "Where are you headed for, General?" And when MacArthur replied, "West Point, " the doorman remarked, "Beautiful place. Have you ever been there before?"

Few older Americans will fail to grasp the humor, even irony, in the doorman's question. The General, indeed, had been there--first as a cadet and later as commandant of the Academy itself. Each visit to West Point for MacArthur seemed to be a renewing experience and the inauguration of some new phase of his life. It was so in 1899 at the beginning of his career; it was so in 1962 at the end of his career. In 1962 West Point marked MacArthur's full-circle career journey. During this last visit to his old rockbound highland home, the General concluded his remarks to the Cadet Corps with the following words:

> The Long Gray Line has never failed us. Were you to do so, a million ghosts in olive drab, in brown khaki, in blue and gray, would rise from their white crosses thundering those magic words--Duty-Honor-Country. . . .In my dreams I hear again the crash of guns, the rattle of musketry, the strange mournful mutter of the battlefield. But in the evening of my memory, always I come back to West Point.

Though not a MacArthur in word or deed, this writer, too, has the feeling that there is something special about West Point--something ennobling about the motto of the place, "Duty-Honor-Country." It is a feeling born of recent personal experience.

This summer I was invited to spend the month of June at West Point to participate in the United States Military Academy--R.O.T.C. Fellowship in Military History, along with thirty-three other civilian professors of military history. The course of activities included tours of Revolutionary and Civil War battlefields, visits to museums, lectures by prominent scholars in the field, war games, weapons demonstrations, evaluations of military historians and their craft, panel discussions, and late-night arguments between us northerners and "them-there Johnny rebs" over Civil War tactics. (The latter activity was extra-curricular.)

My arrival at "the Point" was not as auspicious as Douglas MacArthur's, the son of an already important Major General and hero of the Philippine Insurrection. On the other hand, my departure was not as foreboding as that of George Custer's, who graduated 34th--in a class of thirty-four.

The purpose of the West Point military history fellowship (also called a workshop) was to enhance and standardize, somewhat, R.O.T.C. military history programs around the country. Each year the Military Academy invites and pays for a number of civilian professors, who teach history for the college R.O.T.C. program, to come and study military history from each other as well as a few other experts. As most historians know the facts, West Point's forte is their capability of providing hands-on experience, whether that be shooting a Revolutionary War musket, walking a battlefield, or touring the U. S. Ordinance Museum at Aberdeen Proving Ground, Md., and viewing every type of tank, howitzer, or rocket ever used in combat.

West Point was, for me, an experience of reflection, renewal, and recommitment to the path I have chosen to follow; a path which aims at promoting peace and renouncing war (D&C 98:16). This does not mean, however, that I came away from the Academy disapproving of the warrior. On the contrary, as I sat and walked with the "ghosts of West Point" I was moved to feelings of gratitude for those simple, steady men of honor who acted on what they truly believed in.

There is a wonderful story which exemplifies the character and calibre of some of the ghosts which haunt West Point. In 1891, Union General William T. Sherman (class of '40) died of asthma at the age of 71. Sherman, it will be remembered, was responsible for commanding the devastating march to the sea in order to end the Civil War by making "Georgia howl." His constant, indefatigable, and ardent foe in the northern Georgia hills (before Jeff Davis had him replaced) was Confederate General Joseph Johnston (class of '29). Johnston himself died at age 84 only weeks after Sherman's demise. The old rebel had caught pneumonia, after refusing to cover his head at the chilly funeral of his arch enemy, Sherman. Some things are sometimes more important than even self preservation; honor and principles are among them.

West Point is a place conducive to reflection, reflection about honor and shame, about heroism and villainy, about courage and cowardice, about wisdom and foolishness, about brilliance and incompetence. The geography of the place itself exudes history and brings to remembrance at every glance examples of those antithetical characteristics just listed. A case in point is an outcropping of rock on the far eastern end of the dress parade ground which represents the foundation of old Fort Clinton, named after an American officer and built under the direction of Thaddeus Kosciuszko. The ghost of Thaddeus Kosciuszko (the great Polish engineer whose statue stands high on a granite column overlooking the Hudson River) seems to roam the Academy perimeter in vigilance, ever watchful for the likes of a Benedict Arnold, whose treachery is legend.

The names Kosciuszko and Arnold--symbols of opposite actions and loyalties--are both intertwined with the history of West Point, and not very far from the consciousness of those who have been there. With the seizure of Fort Ticonderoga by patriot militia under Ethan Allen and Benedict Arnold in 1775 (the latter had an auspicious beginning) came the realization that New York and the Hudson Highlands would have to be defended against British invasion. The site selected for fortification was West Point, across from Constitution Island, where the Hudson River narrows and makes a sharp bend.

After three years of close calls for the Continental Army, Kosciuszko, in 1778, was commissioned to organize and supervise the construction of West Point fortifications. The French-trained engineer did a brilliant and sophisticated job of designing a series of mutually reinforcing bunkers, gun emplacements, and lookout posts around the surrounding hills. The crowning touch was added by his associate, Thomas Machin, who forged and then emplaced a great chain and boom across the narrowest point of the river, between West Point and Constitution Island. The chain had links two and one half feet in diameter and weighed a minimum of 65 tons. Even today, as one looks out across the river from the parade ground, it is possible to see the spot where the chain was anchored to the rocky shoreline.

Kosciuszko was a God-send (literally)! His engineering feats prevented the British from even thinking about sailing up the Hudson past West Point, or attempting to capture the surrounding Highlands. The upper Hudson Valley, an important strategic pivot point which controlled access to both the northern and southern colonies, was made safe as a result of the Polish engineer's efforts.

But, alas, treachery almost accomplished what British ship and shot could not. Benedict Arnold, patriot hero of land and sea and a widower since 1775, met and married a ravishing young Tory sympathizer named Peggy Shippen while both were in Philadelphia in 1777 and 1778. At the same time Arnold was busy socializing, he was also being reprimanded by both Washington and an official military court for his poorly administered command.

Arnold then learned, through the Tory network, that British General Sir Henry Clinton wanted West Point and was willing to pay a high price for it. Major General Arnold, facing a deteriorating career, asked his old friend Washington for command of the West Point fortifications. At the same time, Arnold contacted Clinton and set the price for his treason at 10,000 pounds sterling (later upped to 20,000 pounds). As we know, the plot was discovered. John Andre, a British officer and agent in the deal, was hanged as a spy. Arnold and his wife barely escaped. They went to London where he was commissioned a brigadier general and later pensioned as a retired British officer until his death.

The history of West Point (where a nation was once saved by a quiet hero and then almost lost by a flamboyant villain) provides an excellent microcosm of the entire Revolutionary War. West Point is a tangible reminder of both the Kosciuszkos and the Arnolds of the world. In 1802 it became the home of the United States Military Academy, an institution whose ghosts remind us of duty, honor, and country.

In addition to the three weeks spent at West Point and various other Revolutionary War sites, the U.S.M.A.-R.O.T.C. Military History Fellowship included one week spent at Civil War sites, particularly Gettysburg and Antietam. Antietam was the bloodiest single day of the Civil War: 23,000 casualties, including approximately 5,000 killed within a twelve-hour period. Antietam was an artillery duel. Both Confederate and Union artillerists honed their craft to perfection. They used a special type of projectile only recently developed by English artillery officer Henry Shrapnel (whose name describes his legacy.) The effects of the thin shell, which exploded in midair and produced a hail of lead balls and jagged metallic chunks, were devastating. It is both sobering and rivetting to walk the area known as Bloody Lane and realize that so many boys and men died in that one place on September 17, 1862, that not one spot of bare ground could be found big enough to put one's foot without stepping on dead soldiers for one half mile.

Of all the places visited this past June, the one which most touched me was Gettysburg. During that three-day battle in July 1863, casualties reached 50,000. I shall not quickly forget the silence of Gettysburg National Cemetery, nor the rows and rows of numbered white headstones depicting the graves of unknown soldiers. How much young blood was spilled during the Civil War! One Gettysburg monument states simply that the number of casualties (both killed and wounded) for boys, seventeen years of age and under, who fought in the Civil War runs to over 800,000.

On Fame's eternal camping-ground
Their silent tents are spread
And glory guards with solemn round
The Bivouac of the Dead.

At Gettysburg, the ghosts of war are very near.

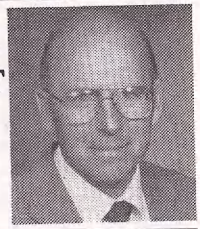
Any historical workshop, abounding with so many history experts, is bound to produce a mountain of trivia. Some of it is interesting; some of it is truly useful. It is interesting, for example, to note that the great Civil War battle of Shiloh (a name loaded with Messianic meaning) was fought on April 6. Far more useful, however, for one's personal life is the little kernel of wisdom gleaned almost by accident from one of the great military historians of all time. Thucydides said in his commentary on the Peloponnesian War: "Self control is the chief element in self-respect, and self-respect is the chief element in courage."

In conclusion, I should like to say that my West Point odyssey was, like MacArthur's in 1962, something of a full-circle journey. I became interested in military history through the stories of my long-deceased father, who began a lengthy stint in the Marine Corps in 1917 at age 16. He served with the 5th Marine Regiment which was attached to the Army's 2nd Division, and was among the first to enter Europe during WW I in Pershing's AEF. My father's memoirs, left to me years ago, contain some personal accounts of war. But, like my father's life, these accounts have always remained somewhat incomplete. This summer our West Point group traveled to the Army War College at Carlisle Barracks, PA. One can imagine the excitement I felt when there, in the library, I was shown the diary accounts of others who served in the 5th Marine Regiment with my father at Chateau-Thierry, Belleau Wood and other well-known places. My father's stories have become more meaningful.

I am grateful for my summer odyssey, for the time spent at West Point, at Antietam and Gettysburg, at Saratoga, Stony Point, Newburgh and Fredericksburg. I also gained much from our discussions about places we couldn't visit such as Verdun, Omaha Beach, Kasserine Pass, Pork Chop Hill, and Khe Sanh. Again, I state that while I am not a warrior, my appreciation for the warrior increased. To study military history, the great captains and campaigns of ages past, does not mean that one is a war monger or a lover of violence. On the contrary, the military historian often comes to realize, better than most, the wisdom of the admonition to renounce war and proclaim peace; for it is the warrior who not infrequently must bear the deepest wounds and scars of war.

IN SEARCH OF THE IDEAL LEARNING ENVIRONMENT

By Dean Sorensen
Academic Vice President



I have felt for some time that we have all the ingredients at Ricks--faculty, facilities, students, curriculum, and staff support--to create the finest learning environment of any college in the world. I believe that it is within our reach to be known and respected as much for the quality of learning that takes place here as for any other characteristic or feature.

But what is the ideal learning environment for our students? Which conditions or features of our classroom climate are most rewarding; which will foster the most growth? These are questions that have captured my interest over the past decade.

With the help of Dick Hooton and Alan Clark, I have been trying to tease out the features that make our learning environment most ideal. We don't have any final answers, but I believe we have made a promising start. This paper is a report on our progress. I'll first describe briefly the theoretical model guiding our research, then I'll present a summary of some of our findings to date.

William Perry's Theory of Cognitive and Ethical Development

William Perry was a Harvard professor of psychology who became intrigued with the drama of cognitive and ethical development in students as they progress through their college experience. After observing students over many years, he developed a scheme which attempted to describe the way students changed their way of viewing things as they matured intellectually.

According to Perry's theory, we adopt a particular point of view or set of assumptions about the world at a given point in our cognitive development. As we mature over time, we find that it no longer is adequate to account for our experience, so (with some reluctance because changing our world view is not easy), we abandon our present version of the world and move on to something more complex. Perry has identified nine stages or "positions" as he calls them. They represent characteristic ways students view their world and learning at a given time.

I won't describe in detail each of Perry's stages, but will summarize the direction and nature of the cognitive changes which occur by reducing his nine stages into four primary positions. *

DUALISM. The first position he called dualism. Here meaning is divided into two realms--Good versus Bad, Right versus Wrong, We versus They. Right answers exist somewhere for every problem, and authorities know them. Right answers are to be memorized by hard work, and knowledge is quantitative. This is what Perry calls the Garden of Eden, a position of cognitive simplicity, naivete, and innocence. Teachers are viewed as authority figures who know right from wrong, good from bad; and their role is to give it to students. Knowledge is a collection of information. The student's only requirement is obedience: do the assignment as asked, receive the information, and demonstrate having learned the right answers. Peers are not a legitimate source of knowledge or learning. The best questions and answers are crisp and clear-cut.

According to the theory, students at this position would respond well to a high degree of structure, concrete examples, experiential learning, and careful sequencing of course content. They would also seek a safe learning environment where people are respected and treated kindly, where the teacher models what is to be learned, and where students would have the chance to practice skills and evaluate tasks.

Sources of concern for students at this position would include such things as ambiguity, diffuseness or its appearance, multiple perspectives on something, uncertainty-especially by an authority, disagreement between two respected authorities, the concept of independent thought, and requests for students to be involved in interpretation.

MULTIPLICITY. In the next major position, multiplicity, students come to realize that uncertainty exists regarding solutions to problems and issues and that authorities don't always have clear answers. Students at this stage still believe, or at least hope, that there really are "right" answers but the authorities just have not discovered them yet. In areas where right answers are not known, diversity of opinions and values is seen as legitimate and tolerable.

The teacher's role at this position is no longer to simply dispense truth but to show the student the way or process of finding it. Students at this position tend to balk at too much structure. Their role is to learn how to learn, how to do the processes called for; and they seek a class atmosphere which is free and independent. Peers are now more legitimate, often with respect to processes like small group discussions.

The primary intellectual tasks for students are to compare and contrast, see multiple perspectives, do basic analytic tasks, use supportive evidence, and relate issues to other classes or "real life." Students at this position still take comfort in the thought that the right answer is out there and, with our processes for learning, we will someday know all.

Students here can become unsettled at the thought that uncertainty may not just be temporary. And they can experience frustration in trying to determine which of the multiples is really right.

RELATIVISM. Complexity increases even more in Perry's third major position: relativism. Here students admit that there are areas in which many points of view exist and where the context of a problem helps to determine its possible solutions. In this position knowledge is contextual; it is disconnected from any concept of Absolute Truth. However, right and wrong, adequate and inadequate can exist within a specific context and are judged by expertise and good thought processes. There is an important shift here from focusing on an external source of judgment to developing one's own mode of thinking. "Authorities" no longer determine how the students think; instead, students begin to acknowledge making their own decisions.

The role of teacher at this position is that of expert/guide/consultant within the framework of the basic rules of the discipline. Mutuality of learning is sought. Although in some cases one person's opinion is as good (or bad) as everyone else's, authority can be earned through demonstrating expertise.

The role of the student here is to exercise the use of the intellect, to shift from context to context, and to apply the rules of adequacy to information, concepts, perspectives, and judgments. Peers are legitimate sources of learning if they are adequate.

Students at this level truly enjoy diversity and options. They feel comfortable moving across contexts and have the intellectual tools to do so. They can both seek and reflect advice from authorities without stress.

COMMITMENT. Perry's final position is called commitment. In the fact of growing relativism and complexity, students consciously choose values and accept responsibility for their choices.

*Adapted from unpublished report by Lee Kneflekamp

Now the question arises: "Where on Perry's scheme do our students fall?" I have asked many teachers this question. While all have recognized that no two students are exactly alike in how they view the world, most have said that the typical Ricks freshman would fall somewhere between the first two stages--dualism and multiplicity. I agree with that assessment, and our investigations have centered on learning features pertinent to these levels.

Learning Environment Variables

Consistent with Perry's model, we have directed most of our attention toward the following features:

Personalism of teacher
Teacher preparation
Encouraging/discouraging learning climate
Vicarious/direct contact with that to be learned
Competition/cooperation emphasis
Student involvement in learning
Degree of structure
Teacher example-honor/expediency

Just for interest's sake before we go on, let's do a little exercise. Look at the table below which arranges the eight features on a continuum. Put an X at the place where, on average, you feel the learning experiences for freshmen should be ideally pitched. Where is the right balance in terms of challenge and support?

	Personalism	
Low		High
	Preparation	
Low		High
	Encouragement	
Low		High
	Experience	
Direct		Vicarious
	Competition	
Low		High
	Involvement	
Low		High
	Structure	
Low		High
	Honor	
Principled		Expedient

Now let's look at some of the data we've gathered. We identified 60 Ricks teachers and arranged them in pairs; each pair taught the exact same course. One of the teachers (which we call Teacher A) was identified as the stronger teacher of the two; the other (Teacher B) was identified as the weaker one. This judgment was based on their merit evaluations over a number of years and became the independent variable in our study. I might mention that we are not comparing poor teachers with excellent ones, but rather quite good teachers with very good ones. The overall ratings by students on the value of the class averaged 2.7 for the "second-rated" teachers and 3.4 for the "top-rated" ones (0 = poor; 4 = excellent).

We set about to compare the learning environments of each of the 30 pairs of teachers. We contacted the students in each matched course and asked them to rate the learning environment of that class along six dimensions. Here's what we found:

	A	B	
Personalism	3.6	2.7	Mean Ratings
Preparation	3.8	3.2	(5-point scale)
Encouragement	3.4	2.7	
Vicarious Experience	1.6	1.9	
Competition	2.2	2.5	
Structure	3.4	2.6	

These differences were all significant at the .001 level and were consistent with Perry's model. I felt encouraged that perhaps we were tapping into some productive areas for consideration.

We wondered what the relationship would be between student ratings in a given area and two other dimensions: (1) his or her designation as "top-rated" or "second-rated" (teacher), and (2) what the student thought of the overall quality of the course (class). So we ran a series of correlations between the variables. Here's what we found:

CORRELATION COEFFICIENTS BETWEEN
1987 STUDENT RATINGS OF LEARNING ENVIRONMENT FEATURES AND
ADMINISTRATOR RATINGS OF TEACHER QUALITY (Tea)
and also
STUDENT RATINGS OF OVERALL CLASS WORTH (Class)

	Tea	Class
PERSONALISM		
Friendly	.58	.60
Enthusiastic	.66	.64
Humor	.63	.59
PREPARATION		
Knowledge	.69	.61
ENCOURAGEMENT		
Encouragement	.59	.66
EXPERIENCE		
Vicarious/Direct	.21	.31
COMPETITION		
Competition/Cooperation	.27	.53
STRUCTURE		
Objectives clear	.61	.75
Organized subject matter	.58	.75

These findings seemed to support our expectations, and they also seemed consistent with some other studies we had done. In 1985, for example we asked a large group of students to rate various environmental factors in selected classes and to assess the overall value of the course in terms of being worthwhile. Correlation coefficients between three environmental factors and how worthwhile the course was rated were as follows:

CORRELATION COEFFICIENTS BETWEEN
LEARNING ENVIRONMENT FEATURES AND
OVERALL QUALITY OF CLASS
as judged by
STUDENT RATINGS IN 1985 RICKS COLLEGE STUDY

EXPERIENCE	
Emphasis upon doing as opposed to listening or watching	.38
COOPERATION	
Emphasis upon sharing as opposed to competing with other students	.34
STRUCTURE	
Course expectations clearly explained	.38

In summary, the data we have gathered so far suggest that learning environments are best which exhibit high personalism, preparation, encouragement, involvement, and structure; low levels of competition; and learning experiences that are direct rather than vicarious.

Expressed differently, here is my tentative list of the best features we can offer our students:

Ideal Expectations in the Ricks Learning Environment

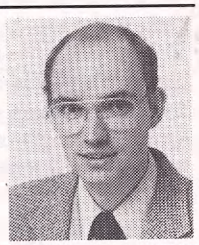
1. A teacher who is warm and friendly
2. A teacher who knows his material and is well prepared
3. Clear expectations on what is to be learned and how it will be evaluated
4. A classroom climate that is encouraging and positive
5. Learning where direct experience is emphasized over vicarious
6. Involvement in the learning rather than being a passive bystander

7. Cooperation with fellow students emphasized over competition with them
8. The total learning experience characterized by honor and integrity

We intend to continue refining our model. Our hope is to provide teachers useful information as they strive to make their classes all they can be.

Book Review

My Family and Other Animals



by Rod Keller
English Department

Meet a nine year old boy who lives on a Greek island in a strawberry-pink villa, a daffodil-yellow villa, and a snow-white villa. This boy immerses himself head first into the island's natural life with a sensitive curiosity. And fortunately, he relives and describes his adventures precisely for a tag-along audience.

Gerald Durrell introduces himself and his purpose in the first paragraph of My Family and Other Animals:

> This is the story of a five-year sojourn that I and my family made on the Greek island of Corfu. It was original ly intended of the island, but I made a grave mistake by introducing my family into the book in the first few pages. Having got themselves on paper, they then proceeded to establish themselves and invite various friends to share the chapters. It was only with the greatest difficulty, and by exercising considerable cunning, that I managed to retain a few pages here and there which I could devote exclusively to animals.

Durrell's family does intrude, but it's because they're such a normal family having an exotic, unifying experience. His gardening mother, writing brother (Lawrence Durrell is the author of The Avignon Quintet series,) hunting brother, and pining sister all add their personalities to young Gerry and his escapades.

But the most memorable and affecting parts of the book include his nose-to-nose observations of spiders, scorpions, beetles, tortises, porpoises, goldfish, snakes, owls, magpies, gulls, pigeons, crane-flies, fireflies, and his mammoth dog/pal Roger. In a chapter entitled "The World in a Wall," Durrell gets the reader belly-flat exploring the seemingly invisible life of a crumbling wall. With a thin knife blade lifting loose plaster, he reveals "polished chocolate" scorpions with "their flattened, oval bodies, their neat, crooked legs, the enormous crablike claws, bulbous and neatly jointed as armour, and the tail like a string of brown beads ending in a sting like a rose-thorn." The reader returns often to this wall and eventually and intrusively makes the scorpions a part of everyday life. And with a flashlight Durrell spies and captures for his audience glimpses of the scorpions' wonderful courtship dances as they slowly waltz claw in claw on the moss until the light disturbs them and they retreat away into the living wall.

The young Durrell finds a female scorpion with what appears to be a fur coat only to discover that the coat is a mass of tiny babies clinging to the mother's back. Durrell determines to capture this wonderful discovery in a convenient matchbox to hide in his menagerie bedroom. He is distracted by a call to dinner, and he unthinkingly puts the matchbox on the mantel. Then Durrell and we knowingly watch his brother Larry open the matchbox to light an after-dinner cigarette, and we observe the chaotic hysteria that explodes as all try to escape fleeing, tail-raised scorpions.

Gerald Durrell writes with the similar personal and personable style of James Herriot in All Creatures Great and Small. Durrell's greatest writing strength is his detailed, deliberate, but effortless descriptions of insects, family, and life. Durrell emphasizes on each page of My Family and Other Animals the power of observation to enhance daily life and learning. His book takes readers out of the everyday humdrum of life and introduces them to the mysterious, fascinating world possible under every rock. He gives his readers an awakening to the newly visible world around them.

Other books (there are nearly twenty) by Gerald Durrell include: The Overloaded Ark, The New Noah, A Zoo in My Luggage, My Favorite Animal Stories, Menagerie Manor, and Birds, Beasts, and Relatives.